# ABSTRACT

Training Effects on Recovering Parents' Self-Efficacy to Identify Problems, Solutions, and

Resources to Prevent Internet Addiction in Youth

by

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This study examined the effects of a 2-hour training on the self-efficacy of parents in recovery from substance use disorder to intercede in their children's Internet technology use in order to prevent future problems with Internet addiction (IA). Using a quasi-experimental pre-post-test/post-test design, 32 parents between the ages of 19-48 in a recovery center were assigned to receive the parent training or to participate in control-comparison group. Prior to the study, a Parental Self-Assessment Inventory (PSAI) was developed and field tested as a measure of Parental Self-Efficacy (PSE) to identify *problems*, *solutions* and *resources* supported in research to increase resiliency of children and adolescents to manage appropriately their technology use. During the study, The PSAI demonstrated internal consistency and was shown to be an effective measure of PSE to intervene effectively in youth Internet technology use. A doubly univariate analysis was conducted to determine whether there were significant PSAI outcomes between study participants. Significant multivariate effects were not found for main effect of group. However, significant multivariate effect with a large effect size was found for the main effect of time. Moreover, a statistically significant and large effect size was also found for the multivariate the training by group interaction. The parent training produced a significant

positive effect on PSE of the study participants who attended the 2-hour training. Researchers, counselor educators, and clinicians could all benefit from considering these findings when addressing parenting issues for individuals in recovery.

TRAINING EFFECTS ON RECOVERING PARENTS' SELF-EFFICACY TO IDENTIFY

PROBLEMS, SOLUTIONS, AND RESOURCES TO PREVENT INTERNET ADDICTION IN

YOUTH

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**DEDICATION**

This research project is dedicated to those individuals who have struggled in their lives with undiagnosed ADHD. May the successful completion of this research study serve as an example of what can be accomplished with proper identification and treatment of the condition.

# ACKNOWLEDGMENTS

I would like to express my gratitude to a number of special individuals who helped me to achieve this life-long goal. First, I would like to thank my immediate family, who sacrificed much in order for me to pursue a terminal degree. They uprooted their lives to move across country for 4 years to live in Greenville, NC while I completed Ph.D. coursework and passed comprehensive exams. They also gave me the space and time to work on my dissertation study without complaining even once. I would also like to thank my dear friends who were consistently supportive and understanding of last minute cancellations or long stints of being absent from their lives. And, I would like to thank Dr. Elizabeth Boland, Dr. Lloyd Goodwin and Dr. Steven Sligar, who graciously and diligently served as my dissertation committee. I would also like to thank faculty and staff members from the Department of Addictions and Rehabilitation Studies at East Carolina University, for the time they devoted to my professional development. And last, but far from least, I would like to acknowledge my profound appreciation to Dr. Stephen Leierer, my dissertation chair, mentor and coach. Dr. Leierer devoted every Saturday from 3-4 pm to meet with me by phone for the past 4 years. He was unrelenting in his support and I now know what unconditional positive regard truly feels like, because Dr. Leierer offered that gift to me every week without fail. I am sure I am a better person for having known Dr. Leierer and I will be a devoted fan of his for the rest of my life.

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# CHAPTER 1: INTRODUCTION

## Introduction to the Study

This chapter offers an overview of a dissertation study, which examined the impact of a two-hour Internet addiction prevention parent-training module on the relevant self-efficacy beliefs, expectations, and knowledge of parents in recovery from addictive disorders. The chapter includes background information, a statement of the problem, and the justification for the study, the research questions, and the significance of the outcome findings. The definition of terms and a summary conclude the chapter.

## Background

Few innovations in recorded human history have altered human experience as much as Internet technology (Steiner-Adair, 2013; Loader & Dutton, 2012; Rosen, 2012). Along with numerous positive contributions this technology has afforded us (Du, Jiang, & Vance, 2010; Khan, Kim, & Yoji, 2013; Yildiz & Yildirim, 2012), Internet technology has provoked both considerable speculation about its influence on human interaction and growing anxiety about the increasing amount of time youth spend engaged in online activities (Hamlen, 2013; Rosen, 2012; Turkle, 2011). Parents, educators, counselors and other healthcare providers worldwide have begun to express concern that Internet technology is affecting youth in ways both unanticipated and difficult to gauge (Hamlen, 2013; Gentile, 2009; Loader & Dutton, 2012).

Over the last two decades, many parents openly embraced technological innovation and actively encouraged their children to grow comfortable with its use (Cash & McDaniel, 2008). Recently researchers (Steiner-Adair, 2013; Turkle, 2011) have reported that many parents have expressed discomfort with their ability to intervene successfully and guide their children toward responsible Internet use and video gaming. These studies indicate that parents prefer rules and

standards for their children's Internet use, but find their parental effectiveness compromised by inconsistent and ambiguous strategies that no longer work in the digital age (Steiner-Adair, 2013; Turkle, 2011). Hence, many public leaders, educators, counselors, healthcare providers, and parents want to identify best strategies for supporting youth development and improving long-term outcomes given young people's pervasive Internet technology use (Tam & Walter, 2013; Valkenburg & Peter, 2010; Yates, Gregor, & Haviland, 2012).

As the availability of new digital technologies has accelerated, parenting guidelines for children's use have not kept pace (Loader & Dutton, 2012; Yates et al., 2012). This disconnect has led to rapid escalation in the amount of time children and adolescents in many advanced countries daily interact with computer screens and smart phones, and/or play video games through online media (Gencer & Koc 2012; Loader & Dutton, 2012; Mitchell, Jones, & Wells, 2013; Valcke, Wever, Van Keer, & Schellens, 2011). Moreover, some youth are reported to engage with Internet technology in a compulsive manner similar to behaviors associated with other addictive disorders, such as substance abuse or gambling (Valkenburg & Peter, 2009). These concerns have provoked intensified empirical interest in this phenomenon, which is taking place with an increasingly larger sub-set of youth worldwide.

In a recent study examining a representative sample of American teens, the Pew Research Center (Lenhart, 2015) reported that because of convenience and unlimited access to mobile devices, especially smartphones, 92% of teens report going online daily, with 24% reporting they go online almost constantly. Moreover, a greater number of African-American and Hispanic youth admit to being online almost non-stop (34% and 32%, respectively), as compared to white teens (19%). Children and adolescents spend more time on screen technology--more than 7 hours

per day—than they do on any other activity except sleeping (Sanders, Parent, Forehand, Sullivan, & Jones, 2016; Strasburger, Jordan & Donnerstein, 2010).

In addition, Rideout et al. (2010) found that 46% of 8-18-year-olds reported sending 118 text messages on a normal day, resulting in approximately 1.5 hours spent engaged in this activity daily. Youth are also ardent video gamers, with 97% reporting they play video games while using a computer or hand-held device (Strasburger et al., 2010). According to Prot, Anderson, Gentile, Brown, & Swing (2014), youth spend an average of two hours per day playing video games, with a significant number of males playing four hours or more per day. Pew Research Center's Internet and American Life Project (2013) reported that teens' Internet use dramatically changed after 2006, from earlier stationary connections tied to desktops at home to mobile connections readily accessible at any place and any time. Undoubtedly, then, Internet use is pervasive in the lives of youth today (Livingstone & Smith, 2014; Rideout et al., 2010; Sorbring, 2012; Uhls et al., 2014).

Research suggests that regulating children's Internet use is different from overseeing use of more traditional media devices (e.g., televisions, stereos) as Internet use is harder to manage due to ease of access and wider diversity of content (Padilla-Walker & Coyne 2011). Additionally, children sometimes know more about newer interactive technology devices than their parents (Hamlen, 2013; Wong, 2011). Because of these factors, important parent/child relationships related to rules and guidance have become vulnerable to problems (Appel, Holtz, Stiglbauer, & Batinic, 2012). In response, though parents recognize both the positive and negative aspects of Internet technology, parenting practices often lean more toward restricting Internet use, highlighting parental anxiety about online risks and associated negative outcomes (Lee, 2012). Indeed, many parents believe that they have very little control, including few rules

they can enforce, and also minimal understanding of what constitutes appropriate monitoring in the first place, all of which primarily emerge from rapid adoption of online technologies found in every corner of the world (Leung & Lee, 2011; Mitchell et al., 2013; Carlisle, Carlisle, Polychronopoulos, Goodman-Scott, & Kirk-Jenkins, 2016). Further, because the use of interactive technology is so common in the lives of youth today, parents and healthcare professionals find it difficult to discern normal use from problematic, thus giving rise to the question, "What is too much?" (Mitchell et al., 2013).

Increasing numbers of empirical and clinical reports have delineated patterns of diagnosable symptoms and related outcomes associated with compulsive use of Internet technology (Gentile, Coyne, & Bricolo, 2013; Lam, 2014). In the last two decades, published studies in professional journals have begun to report on the condition, which is referenced by an assortment of names, including compulsive Internet use (CIU), pathological or problematic Internet use, and Internet addiction (IA; Liu et al., 2015; Lopez-Fernanadez, Honrubia-Serrano, Gibson, & Griffiths, 2014). For the purposes of this study, this condition will be referred to as Internet Addiction (IA) and will include any digital device that can be used to access Internet online activities, including: online video games, gambling, pornography, shopping, and social media (Carlisle et al., 2016).

Watters, Keefer, Kloosterman, Summerfeldt, and Parker (2013) described IA as maladaptive preoccupation with and excessive, impulsive use of the Internet leading to substantial distress and impairments in daily functioning. Numerous studies have characterized the condition as similar to substance use disorders and gambling addictions (Ak, Koruklu, & Yilmaz, 2013; Cho, Sung, Shin, Lim, & Shin, 2013; Czincz & Hechanova, 2009; Gentile et al, 2011; Hinvest & Brosnan, 2012; Kuss, Shorter, van Rooij, Griffiths, & Schoenmakers,

2013;Kuss, van Rooij, Shorter, Griffiths, & van de Mheen, 2013; Lee, Han, Kim, & Renshaw, 2013; Li, O'Brien, Snyder, & Howard, 2015; Liu, Desai, Krishnan-Sarin, Cavallo, & Potenza, 2011; Mitchell, et al., 2013; Moreno, Jelenchick, & Christakis, 2013; Yu, Kim, & Hay, 2013). The symptoms of IA have been said to include: (a) preoccupation with Internet activities; (b) increasing tolerance of Internet use; (c) development of psychological dependency for the Internet and withdrawal symptoms when not using Internet; (d) inability to reduce Internet use; (e) use of the Internet to cope with negative moods and reduce stress; and (f) interference with prior activities and relationships due to recurrent Internet use, despite increasing knowledge of deleterious consequences related to ongoing use of the Internet (Li et al., 2015 Prevalence of IA among youth in the United States is estimated at 4-6% (Moreno, Jelenchick, & Breland, 2015). In a sample of more than 1,000 U.S. youth ages 8 to 18, Sim, Gentile, Bricolo, Serpellone, and Gualamoydeen (2012) classified 8.5% as pathological video game players. Liu et al. (2011) found an overall prevalence rate of 4% in a cross-sectional survey sample of 3,560 Connecticut high school students. In a telephone survey of 1,560 users ages 10-17 and their parents, Mitchell et al. (2013) found that 20% of 10-12-year-olds and 13% of 13-17-year-olds had major problematic Internet experiences, as defined by Internet overuse and online social and communication problems.

**Youth Most at Risk for Internet Addiction**

Empirical research suggests that youth most at risk for IA are more likely to smoke tobacco and use other mood-altering substances (Lee et al., 2012). Villealla et al. (2011), found that 60 % of people who initiated drug use and 80% of those who started drinking alcohol and using tobacco products undertook these behaviors before or at the age of 18. In another study of more than 73, 000 South Korean youths ages 13-18, researchers found that those with IA drank

more alcohol (32.1%) compared to a control group of non-Internet addicted students (Lee et al., 2013). Further, the researchers reported that youth who used 3 or more substances were 9.26 times (Odds ratio = 9.26) more likely to be at risk for IA (Lee et al., 2012). In a different study examining 1444 adolescents in Germany, problematic alcohol use (PAU) was higher in adolescents with problematic Internet use (PIU), compared to those without PIU (Wartberg et al., 2016). The researchers also reported that both adolescent PAU and PIU were significantly associated with externalizing (conduct problems) and internalizing behaviors (depressive symptoms). Rücker, Akre, Berchtold, and Suris (2015) conducted a different study that examined 3067 adolescents in Switzerland and reported that PIU was associated with other risky behaviors. These researchers concluded that PIU may be an important early predictor of adolescent substance abuse. As a result, the researchers recommended addressing PIU as part of psychosocial screening of adolescents.

Tam and Walter (2013) reviewed the relevant literature and developed a laconic model depicting key predisposing factors underlying the development and progression of IA in youth. The authors divided the predisposing factors into two categories based on severity: those related to problematic/heavy Internet use and those related to pathological Internet and gaming addiction. Factors related to problematic/heavy Internet use included: low self-esteem and related personality traits (e.g. reward seeking); family discord, and associated mental health difficulties; and, high engagement with technologies. Factors related to pathological IA included: genetic/temperamental vulnerabilities; lack of parent authority/supervision or parental over-control/pressure; and untreated mental illness.

Gender also has been associated with IA. Recent studies have reported that adolescent and young adult males experienced higher rates of compulsive Internet use compared to same-

aged females (Durkee et al., 2012; Gencer & Koe, 2012; Kormas, Critselis, Janikian, Kafetzis, & Tsitsika, 2011; Kuss, Griffiths, Karila & Billieux, 2014; Wallace, 2014). However, in a recent study of 403 adolescents in junior high and high school, a significant negative relationship was found between females' compulsive texting and academic achievement. While a correlation was also found in adolescent males in the study, the relationship was shown to be less significant (Lister-Landman, Domoff, & Dubow, 2015). Moreover, Laconi, Tricard, and Chabrol (2015) reported that women demonstrated problematic Internet use more frequently for social networking and online shopping, while men's compulsive use was primarily related to Internet pornography, video-gaming, and gambling. In general, males use the Internet for entertainment purposes (e.g., fantasy football, video gaming, Internet pornography), checking sports scores, and downloading or streaming music or videos. In contrast, females are more likely to use the Internet to communicate socially and to maintain, renew or form relationships, typically through social networking sites and texted-based communication on mobile devices (Lister-Landman et al., 2015; Moreno et al., 2015; Wartberg et al., 2015).

Youth most susceptible to IA often report that they use the Internet for mood regulation, experience lower life satisfaction and sense of wellbeing, feel lonely, and confide in fewer people (Kuss et al., 2014: Parker et al., 2013; Sim et al., 2012). These youths also have been shown to be higher in novelty seeking and harm avoidance and to experience lower reward dependence, self-esteem, and frustration levels (especially males; Lee et al., 2013; Kuss et al., 2014; Sim et al., 2012; Spada, 2014; Wallace, 2014; Yu et al., 2013). Moreover, they have appeared to be more introverted and lower in agreeableness, emotional stability, conscientiousness, and resourcefulness (Kuss, 2013; Kuss et al., 2014: Müller et al., 2013; Spada, 2014). Researchers also have identified a range of co-morbid conditions in this

population, such as: impulsivity, low self-esteem, depression, attention deficit/hyperactivity disorder (ADHD), social anxiety, elevated hostility, and emotional instability (Cho, et al., 2013; Coyne, Padilla-Walker, & Howard, 2013; Wallace, 2014), as well as obsessive-compulsive disorders (Kaltiala-Heino, Lintonen, & Rimpelä, 2004). Furthermore, many of the psychosocial and co-morbid problems associated with IA have been found in other addictive disorders (Suissa, 2015).

**Family Factors Associated with Internet Addiction Risk**

Researchers have identified several notable family factors related to risk for developing IA in adolescents. These factors include: family non-intactness, negative parental rearing style, family violence, parental marital discord, family dissatisfaction, family member substance abuse (Yu et al., 2013), and perceived parents' positive attitude to adolescent substance use (Wartberg et al., 2015). Families manifesting a high degree of interfamilial conflict typically experience a low degree of child-parent engagement, which may contribute to decreased levels of parental control and, in turn, ultimately increase youth susceptibility to IA (Durkee et al., 2012; Malygin, Khomeriki, Smirnova, & Antonenko, 2013).

Parental mediation is considered key to preventing and protecting children and adolescents from engaging in many different risk behaviors, including IA (de Morentin, Cortés, Medrano, & Apodaca, 2014). A longitudinal study conducted by van den Eijnden, Spijkerman, Vermulst, van Rooij, and Engels (2010) found that parental monitoring and rule setting pertaining to children's Internet use served as both a deterrent to compulsive early use and also a preventative measure for future development of IA. Parenting practices, therefore, can either support or prevent development of Internet-related problems (van den Eijnden et al., 2010; Wartberg et al., 2014). In addition, parental supervision and co-viewing of media provide a

protective layer for children and adolescents in diminishing vulnerability to serious risk from

such things as cyber-bullying, exposure to adult-themed websites, and risk of inadvertent

revelation of too much personal information over the Internet (de Morentin et al., 2014).

**Growing Need for Parent Education on Internet Addiction Prevention**

Senormanci, Senormanci, Güclü, and Konkan (2013) report disturbed family functioning

is linked to IA vulnerability. Empirical evidence suggests that unhealthy family functioning and

family conflict were related to IA in large samples of under-aged users (Cassidy, Brown, &

Jackson, 2012; Senormanci et al., 2013; van den Eijnden et al., 2010). Youth with IA have

reported perceiving their parents as lacking warmth and engaging in intrusive, rejecting, and

punitive behaviors. As a result, these youths are more likely to exhibit negative or problematic

psychosocial behaviors (Davis, 2013; Yu et al., 2013). Based on these findings, the quality of

parent-child relationships has been reported to be the strongest protective factor in deterring IA

(Liu & Kuo, 2007) and also the best prevention strategy for supporting healthy interpersonal and

parent-child alliances (Kalaitzaki & Birtchnell, 2014; Senormanci et al., 2013).

In general, children reared by a substance-abusing parent(s) experience poorer outcomes

across developmental stages (Neger & Prinz, 2015). Some researchers have speculated that

ineffective parenting practices underlie adverse age-related outcomes for children of substance-

abusing parents (Calhoun, Conner, Miller, & Messina, 2015; Gruber & Taylor, 2006). Growing

evidence suggests that problematic parenting behaviors are passed from one generation to the

next through poor parenting practices, disrupted family processes during adolescence, and family

management conflict (Bailey et al., 2013; Senormanci et al., 2013). Maladaptive parenting

strategies have been linked to Substance Use Disorder (SUD) risk (Arria et al., 2013; Bailey,

Hill, Oesterle, & Hawkins, 2006; Icick et al., 2013; Pears, Capaldi, & Owen, 2007) and other

bio-psychosocial vulnerabilities (Arria et al., 2013; Bailey et al., 2013; Macleod et al., 2012).

Research in this area has established empirical evidence for the transference of substance use

problems from parents to offspring through underlying mechanisms within families that expedite

this process (Campbell & Oei, 2010). A cognitive model for the intergenerational transference of

gambling and substance abuse has generated positive reviews from scientific communities

investigating these negative health conditions and was found useful for conceptualizing effective

prevention strategies to offset risk (Campbell & Oei, 2010). This same model merits

consideration in a review of IA prevention planning.

One strategy recommended to improve long-term wellbeing and positive outcomes for

children of substance-abusing parents is improving parenting practices while parents are still in

treatment for addiction (Bailey et al., 2013; Haggerty, McGlynn-Wright, & Klima, 2013; Neger

& Prinz, 2015; Niccols et al., 2012). Calhoun et.al. (2015) reviewed randomized controlled trials

of programs that targeted parents in treatment for substance abuse for exposure to interventions

focused on improving their parenting practices. These strategies showed great promise for

improving family functioning and enhancing the health and wellbeing of children.

Building on this evidence, increasing support exists for combining family-based

interventions with substance abuse treatment to produce positive effects on offspring of

individuals with SUD (Arria et al., 2013; Haggerty, Skinner, Fleming, Gainey, & Catalano,

2008; Icick et al., 2013; Niccols et al., 2012). Helping parents in recovery to focus on both

reducing their drug use and improving their parenting skills may mitigate SUD in their own

children (Arria et al., 2013; Burlew et al., 2013; Haggerty et al., 2008; Suchman et al., 2010).

This approach is considered an important first step toward breaking the cycle of addiction,

dysfunctional parenting, and poorer outcomes for many high-risk children including early

substance abuse, teenage pregnancy, juvenile delinquency, and early school dropout (Arria et al., 2013; Macleod et al., 2012; Niccols et al., 2012).

Parent trainings are key mechanisms to teach preventive strategies for combating substance use disorders (Haggerty et al., 2013). These trainings reduce childhood participation in risky behaviors, improve academic performance, and improve mental health outcomes (Haggerty et al., 2013; Temple, 2011). Additionally, support is growing support for inclusion of parenting interventions as part of comprehensive planning for Recovery-Oriented Systems of Care (ROSC; Arria et al., 2013; Burns, Solis, Shadur, & Hussong, 2012). Up until the time of this writing, 2017, scant research has been conducted on the effects of incorporating parenting interventions into formal addiction treatment or extended recovery support services (Arria et al., 2013; Stranger, Ryan, Fu, & Budney, 2011; Taylor, 2011). However, in a recent review of 21 studies examining programs that address both parents' substance abuse and parenting practices simultaneously, the authors found significant benefits when parents were enrolled concurrently in substance abuse treatment and parenting intervention, as opposed to delaying the parenting component until parents completed treatment (Neger & Prinz, 2015). Moreover, these authors noted that parents gained the most benefit when the parenting intervention began by addressing parents' psychological processes, such as developing emotional regulation, before addressing parenting techniques like effective discipline (Neger & Prinz, 2015).

As IA becomes increasingly recognized as a potential problem for individuals with addictive proclivities (Kaltiala-Heino et al., 2004; Yen, Yen, Chen, Chen, & Ko, 2007), scholars have called for research that can influence the development of trainings focused on both informing parents about mediation strategies to prevent IA and evaluating the effectiveness of these parent trainings (Du et al., 2010; Kim, Jeong & Zhong, 2010; Xiuqin et al., 2010; Yen et

al., 2007). Hence, implementing a training module on IA prevention for parents in recovery would be both timely and within the purview of currently recommended best practices for addiction treatment recovery support in the United States. Therefore, this study addresses a gap in services within the addiction treatment field.

**Understanding Internet Addiction Through a Social Cognitive Theory Framework**

Albert Bandura is considered the founder of Social Cognitive Theory (SCT), a comprehensive model for interpreting cognitive and social mechanisms underlying human behavior (LaRose, Mastro, & Eastin, 2001; Niaura, 2000). Over the past two decades, SCT has gained recognition for its value in explaining addictive processes (Lin, Ko, & Wu, 2008). Social Cognitive Theory contends that deficient self-regulatory mechanisms play an important role in the development of addiction and thus serve as possible precursors to IA (LaRose et al., 2003; Lin et al., 2008). According to SCT, two mediating psychological variables are vital to self-regulation: self-efficacy and outcome expectancy (Lin et al., 2008; Vakalahi, 2001). Self-efficacy refers to an individual's belief that he or she can perform a behavior to a specific level of attainment, and outcome expectancy constitutes the anticipated consequences of behavior once enacted (Bandura, 2005; Vakalahi, 2001). Self-efficacy is considered the higher order cognitive mechanism of the two, as it contributes to motivation, socio-cognitive functioning, emotional wellbeing, and performance accomplishments (Bandura, 2005; Connor, George, Gullo, Kelly, & Young, 2011; Lin et al., 2008).

Researchers studying self-efficacy have examined the relationship between task- and domain-specific efficacy beliefs and performance across a wide array of behaviors such as career development, academic achievement, athletic performance, treatment of bulimia, smoking cessation (Bandura, 1995; Coleman & Karraker, 1997). Scientific review of parental self-

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efficacy is especially relevant to the current study (Sanders, Parent, Forehand, Sullivan, & Jones, 2016; Wong & Lee, 2017). According to Bandura (2006b), a strong sense of parenting efficacy serves as an empowering and protective moderator, reducing vulnerability to emotional distress and depression, both of which strongly correlate to addictive proclivities (Haagsma, Caplan, Peters, & Pieterse, 2013). Further, strong parental self-efficacy reinforces emotional health and caregiving qualities, and also influences developmental trajectories of children (Bandura, 2006b).

In accordance with SCT, parental efficacy beliefs originate from childhood experiences and transform into internalized mental representations of relationships with others or "cognitive structures" that help guide parenting (Coleman & Karraker, 1997). From an SCT perspective, family self-efficacy perceptions are major determinants in managing familial relationships and influencing family members' overall quality of life. Further, psychosocial interventions designed to increase parental self-efficacy beliefs have shown a positive impact on childrearing practices (Bandura, 2005). Bandura reported that, when compared to mothers who did not participate in an enhancement program, mothers involved in an efficacy-enhancing program who were raising difficult children were later found to interact more positively with their children, experience lower familial stress, and witness reductions in child behavior problems.

In a systematic review of self-efficacy interventions targeting addictive behaviors, Hyde, Hankins, Deale and Marteau (2008) reported that strategies incorporating verbal persuasion and experiential activities demonstrated the most positive results. To date, no known interventions focus on increasing the self-efficacy beliefs of recovering parents in order to influence positively their children's use of technology and thus prevent future IA, despite increasing evidence supporting use of such interventions for countering risk generally (Bailey et al., 2006; Bailey et

al., 2013; Livingstone & Smith, 2014; Pears et al., 2007; Rosen et al., 2014; Sorbring, 2012 van

den Eijnden et al., 2010; Xiuqin et al., 2010; Yen et al., 2007; Yu et al., 2013). Prior research has

shown that a good relationship and communication with parents are protective factors for

deterring IA in adolescents and family-based intervention offers the most effective strategy for

reducing the problem (Liu et al., 2015). According to Bleckmann, Rehbein, Seidel, and Möβle

(2014):

> So it may well be that strengthening the ability of parents and children to prevent
>
> problematic media use and addiction could turn out to be the most effective strategy for
>
> promoting children's 'media maturity,' i.e., the ability for limited, autonomous and
>
> critically informed use. Since media abuse heavily contributes significantly to health and
>
> educational disadvantages of already vulnerable children long before passing the
>
> threshold to an addiction, this type of intervention holds potential for reducing health and
>
> educational inequalities (p. 209).

### Problem Statement

The current pervasiveness of young people's technology use has given parents reason to

seek new information to integrate into their repertoire of parenting skills (Amichai-Hamburger,

2013; Barker, 2013; Boyd, 2014). Many parents have reported feeling they have less control and

limited options for oversight of their children and adolescents' Internet technology use (Lee,

2012; Leung & Lee, 2011; Mitchell et al., 2013). Lacking alternatives, some parents either resort

to less effective punitive or restrictive measures, or allow their children unfettered Internet access

(Lee, 2012; Leung & Lee, 2011; Mitchell et al., 2013). Complicating the situation,

approximately 4-8% of youth today are reported to be at risk of developing IA, which has been

shown to share pathogenesis to behavioral and chemical addictions (Liu et al., 2011; Sim et al.,

2012). When young people do not receive guidance and supervision, unhealthy practices can intensify into more serious psychosocial problems, and, as a result, impair major areas of life functioning, especially important developmental processes (Panayides & Walker, 2012; Widyanto, Griffiths, & Brunsden, 2011).

Specific types of parenting approaches utilized to monitor children and young people's Internet use and support family cohesiveness are considered prime strategies for preventing future IA problems (Xiuqin et al., 2010). Children most at risk for IA share similar personality traits and family backgrounds often associated with addiction and co-occurring disorders (Kuss et al., 2013). Moreover, scholars have established the existence of an intergenerational component in the transmission of addictive tendencies from one generation to the next (Bailey et al., 2006). Modeling by early caregivers is thought to play a pivotal role in this transmission process (Shin, Kim, & Jang, 2011). Punitive, controlling, or inconsistent parenting practices, for example, is correlated to diminished capacity for caring and respectful interpersonal interactions with others in later years (Johnson, Liu, & Cohen, 2011). Parents in recovery from addiction are more likely to demonstrate diminished self-efficacy and less knowledge about child-rearing practices that lead to self-efficacious offspring (Bandura, 1997).

Amid the rapid advancement of technological innovation, IA remains in the early stages of recognition as a potential problem for individuals with addictive proclivities (Kaltiala-Heino et al., 2004; Yen et al., 2007). Yet, there have been recent appeals in the professional literature for the development of parent trainings on IA that can offset risk, especially for those deemed most vulnerable (Du et al., 2010; Kim et al., 2010; Xiuqin et al., 2010; Yen et al., 2007). Developing a parent-education protocol focused on describing IA and then determining if it is effective for parents fit the armature for prevention in Recovery Oriented Systems of Care

(ROSC) currently being implemented nationwide as part of a national healthcare reform effort (Substance Abuse and Mental Health Services Administration, 2010).

According to Carlisle et al. (2016), mental health counselors would benefit from learning to recognize IA as a disorder that has potential to create similar ruination in an individual's life as substance abuse or other process addictive disorders (e.g., gambling, pornography, sex addiction, eating disorders). A critical aspect of understanding IA is the controversies surrounding its definition and conceptualization (Vondráčková & Gabrhelík, 2016). Knowing which individuals are most susceptible and what environmental conditions are necessary for the problem to proliferate is essential to creating effective solutions to address problematic Internet use. This study provides a comprehensive review of professional literature examining IA and outlines effective prevention and treatment strategies shown through research to produce positive outcomes. The information gained from the results of this study will contribute to the pool of knowledge and understanding of best counseling practices to counter the effects of problematic Internet use.

## Purpose of the Study

The central aim of this study was to examine the effectiveness of an IA prevention training module at increasing recovering parents' self-efficacy concerning the identification of: (a) what IA is; (b) solutions for addressing IA; and (c) local and national resources focused on preventing and treating IA in youth. To address the research questions, the author created and conducted an IA training module that is urgently needed and targets a high-risk group of parents in recovery from substance addictions.

## Research Questions

This study evaluated changes in the self-efficacy beliefs, expectations, and knowledge of parents in recovery from addictions following their participation in a researcher-designed IA prevention-training module. The following three research questions were addressed:

1. Does the 2-hour training module affect study-participants' self-efficacy about identifying appropriate behavioral expectations for children's use of Internet technology?

2. Does the 2-hour training module affect study-participants' self-efficacy about identifying IA in their children?

3. Does the 2-hour training module affect study-participants' self-efficacy about identifying local and national resources that address IA?

## Study Justification and Significance

In direct response to the growing body of evidence linking parenting approaches to increased risk for problematic Internet use, the author developed a two-hour prevention parent training module that provided a general overview of best strategies for preventing IA. Further, based on accumulated empirical support, the training module was offered to a group of parents who evince the greatest potential for transmission of addictive disorders to their offspring (Pears et al., 2007). Additionally, the training module explained strategies that demonstrate the most promise of changing targeted behaviors. Educational strategies linked to positive outcomes include: (a) *in vivo* practice with parent's own child, (b) teaching parent's emotional communication skills, (c) teaching parents to interact positively with their children in non-disciplinary situations, and (d) education that addresses disciplinary consistency (Kaminski, Valle, Filene, & Boyle, 2008; Kumpfer, Whiteside, Greene, & Allen, 2010).

The parent-training module developed as part of this study targeted an area of research recommended for further scientific investigation: educational programming that accesses a high-risk and highly stigmatized population (Burns et al., 2012). Burns et al. (2012) estimated that between 20-40% of adults involved in treatment for substance use disorders are raising at least one child at the time of admission. This study addressed the challenge to incorporate a parent intervention into the continuum of recovery support services as part of the comprehensive planning for ROSC (Arria et al., 2013).

Finally, in leading the world's populace through the transition of becoming a fully wired and virtual world civilization, youth require effective safeguards to protect against any risks brought about by the technological revolution (Christakis, 2010). This study provided initial evidence of an effective prevention strategy that targeted parents of youth whom empirical research identifies at greatest risk for developing future problems related to their Internet technology use.

## Definition of Terms

*Behavioral Addiction*: A compulsive condition in which overt symptoms are behaviorally expressed (e.g., gambling, sex, shopping, Internet use). Behavioral addiction shares core features commonly found in substance addictions, including: endophenotypes, clinical features, and similar responses to treatment approaches (Black, 2013; Karim & Chaudhri, 2012).

*Brief Parent Training:* A mental health approach that focuses on efficiency and cost-effectiveness in delivering interventions at a population level. The intervention is provided in a brief discussion-based delivery format for parents of children with early onset conduct problems (Joachim, Sanders, & Turner, 2010).

*Internet Addiction:* IA is a behavioral pattern that manifests as: recurrent urge to connect to the Internet, the need to be connected often, repeated attempts to stop using the Internet, replacement of social and family relationships with connection to the Internet, use of the Internet to escape problems and the emergence of substantial distress and negative life consequences due to Internet use (Gámez-Guadix, Orue, & Calvete, 2013; Kuss & Griffiths, 2015; Watters et al., 2013).

*Internet Gaming Disorder:* Pattern of excessive and prolonged Internet gaming that results in a cluster of cognitive and behavioral symptoms, including progressive loss of control, over- gaming, tolerance and withdrawal symptoms similar to SUDs (APA, 2013).

*Intergenerational Transmission of Addiction:* Specific parental characteristics and behavioral problems (e.g. gambling, antisocial behavior, substance abuse, domestic violence) are connected to increased risk that similar or related problems will occur in the next generation. Cognitive behavioral theory of transference proposes that the observation of parental addictive behaviors contributes to the child's beliefs and expectations about the problematic substance(s) or behaviors' overall effects, which conversely reinforces their future engagement with the substance(s) (Campbell & Oei, 2010).

*Parenting Efficacy:* Parents' expectations about the extent to which they are able to perform competently and effectively in their roles as parents. Parenting efficacy involves perceived ability to exercise positive influence on the behavior and development of an offspring. Parental self-efficacy pertains to the integration of specific knowledge in child-rearing practices and the degree of confidence one has about his or her own abilities to perform behaviors required of the parental role (Coleman & Karraker, 1997).

*Recovery from Addiction:* The rehabilitation from addiction problems through a process of change in which an individual achieves abstinence and improved health, wellness, and quality of life (SAMHSA, 2012).

*Recovery Oriented Systems of Care:* Coordinated network of community-based services and supports that are person-centered and builds on the strengths and resiliencies of individuals, families, and communities to achieve abstinence and improved health, wellness and quality of life for those with or at risk of alcohol and drug problems (SAMHSA, 2010).

*Self-Efficacy:* The conviction of individuals that they can successfully execute behavior necessary to effectuate expected outcomes. Self-efficacy concerns motivation, cognitive resources, and courses of action needed to exercise control over given events (Coleman & Karraker, 1997). Reinforced with appropriate skills and incentives, efficacy beliefs constitute major determinants of people's choices of activities, including how much effort they will exert, and how long they will persist when faced with adverse circumstances. Self-efficacy information is obtained through mastery experiences, vicarious experiences, verbal persuasion, and emotional arousal (Bandura, 1977).

*Training Module:* A training module is a self-contained, formally structured learning experience with a coherent and definitive set of learning outcomes and assessments. Modules are a planned integrated approach to the educational process, primarily focused on the quality of learning of the intended recipient of the information (Donnelly & Fitzmaurice, 2005).

**Chapter Summary**

The purpose of the chapter was to provide an overview of a study that examined self-efficacy beliefs of recovering parents to influence positively their children's technology use after attending a two-hour training module focused on preventing IA. The chapter contained

background information on youth involvement with Internet technology and corresponding lag time with parental understanding of how best to mediate effectively their children's growing attachment to this technology. An overview was presented defining IA, which youth are most at risk for the problem, and what parenting approaches contribute to its development. Rationale was offered justifying why educating recovering parents on the topic serves as an important prevention strategy. Brief overview of SCT outlined how self-efficacy beliefs influence parenting practices and contribute to addiction proclivities. The problem statement, study purpose and justification, research questions, and significance of the outcome findings were also extended. Definition of terms and summary comments completed chapter discourse.

# CHAPTER 2: LITERATURE REVIEW

## Introduction

The literature review begins by describing the state of youth technology use in the United Sates (U.S.) and offers ideas why some youth are more inclined toward problematic use of technology in particular. The topic of Internet addiction (IA) is explored, illuminating some of the controversy surrounding the condition, as well as recommended prevention and treatment strategies suggested to address IA. The role parents play in reducing or enhancing risk is highlighted. Social Cognitive Theory is presented as the conceptual framework for the study, including discussion of parental self-efficacy's contributions to the parenting process and types of psychometric instruments required to measure self-efficacy as a construct. The role of substance abuse in parent practices is explained, including a review of why combining parent training with addiction treatment is a viable approach for addressing both issues. The last section of the chapter explains how parent trainings are considered potent antidotes to prevent problematic behaviors in children, and reviews two types of training structures that serve as models for this research study. The chapter concludes with discussion of how the study will benefit counselor education and counseling practices and provides a summary of the literature review.

## Youth Internet Technology Use in the United States

Contemporary youth are inundated by interactive technologies that in many ways have come to define their generation's hallmark experience. Digital natives, or members of the "Net Generation," are known as skillful purveyors of online devices with which they connect to the cyber world (Rideout, 2016). The resulting online activities these youths undertake include playing multiplayer online games; consulting search engines for instantaneous access to

unlimited information; interfacing with music through IPods and MP3 players; socializing on Facebook or other social networking platforms; and using smartphones, personal computers, and tablets to stream video services (Kabali et al., 2015; Lauricella, Wartella, & Rideout, 2015; Lim, 2016; Rideout, 2016). Significantly, thanks to touch screen mobile devices and cloud based computing, all these activities are accessible 24 hours per day (Rideout, 2016).

Current public opinion regarding online technology's impact on children and adolescents has been mixed and often extreme. On one hand, some have great concern for the developmental and social well-being of youth growing up amid this online environment (Barker, 2013; Rafla et al., 2014). Others have a more accepting view, declaring most risk has been exaggerated because of popular anxiety and related mass media influences; that any heightened concern should focus only on a minority of youth (Boyd, 2014; Livingstone, 2014; Livingstone & Smith, 2014). What is not in contention, however, is that young people's involvement with online technology in the U.S. is ubiquitous and growing.

In a 2015 study examining a nationally representative sample of American teens' attitudes toward technology, the Pew Research Center (PRC) reported that due to the convenience and unlimited access of mobile devices, especially smartphones, 92% of teens went online daily (Lenhart, 2015). Pew Research Center also found social media plays a dominant role in the lives of teens in the U.S. A majority of the 13- to 17-year-olds (71%) study participants revealed they were frequent users of Facebook, with over half using Instagram (52%), and four in ten using Snapchat (41%). The PRC study also reported that approximately 88% of American teens owned smartphones as major modes of communication with peers and family. Ninety percent of teens reported that they exchange texts, commonly sending and receiving at least 30 per day. Gender also plays a role in online preferences with teenage girls reported to use social

media sites more frequently for sharing information, as compared to boys in the United States boys on the other hand are more likely to own gaming consoles and play video games as compared to the number of girls who play (PRC, 2015).

In 2015, Common Sense Media, a non-profit social science research group, conducted a large-scale study examining the media habits of U.S. youth age 8 to 18 years old (Rideout, 2016). A major finding of the study was that on any given day, teenagers (13-18 years old) averaged six-and-a-half hours viewing screen media, excluding the time spent at school or doing homework. Tweens (8-12 years old) averaged four-and-a half hours per day. The definition of screen media applied in the study included: watching TV, movies, and online videos; playing video, computer, and mobile games; using social media; and using the Internet.

Fifty percent of teens participating in the Common Sense Media (2015) survey reported that they frequently multi-task with media while doing their homework. Similarly, Bleakley, Vaala, Jordan, and Rommer (2014) reported that on an average day approximately 80% of youth engage in multiple forms of media use, including during time spent doing homework. Research has suggested that media multitasking has been associated with higher incidence of depression and social anxiety, as well as reduced attention and ability to block out distractions (Bleakley et al., 2014). Yet a majority of youth in the Common Sense Media survey did not see any problem with media multitasking and, specifically, did not notice that this activity made any difference in the quality of their finished homework (2015).

Current research has indicated that young people's Internet use can bring benefits, such as increased social connectedness and well-being through maintenance of existing friendships (Ciarrochi et al., 2016). Also, educational videogames can help children make healthier lifestyle choices, such as exercising and/or nutritional intake. Video games have been shown to improve

executive functioning in children with ADHD. Further, video games have been created or modified for therapeutic purposes in the treatment of depression, anxiety, phobias, and post-traumatic stress disorder (Olson, 2016). Video games have also served as powerful learning tools, offering dynamic learning environments that hone deductive and inductive reasoning skills, and have also been used to train in complex tasks, such as conducting laparoscopic surgery in resident physicians or improving flying skills in beginner pilots (Dale & Green, 2016; Quandt & Kowert, 2016). Although new technologies have been associated with numerous positive attributes, concerns have also been raised about potential for some youth to engage compulsively in screen media use and/or become addicted to use of these media (Andreassen et al., 2016).

## Youth Internet Addiction

With rising rates of Internet accessibility found among youth worldwide, increasing interest has been directed toward this age group as potentially high-risk for problematic use of Internet technology (Durkee et al., 2016; Jorgenson, Hsiao, & Yen, 2016; Wang, Ho, Chan, & Tse, 2015). Onset of behavioral addictions typically occurs in adolescents and young adults, with chronic impairment commonly paralleling impairments related to substance addictions (Jorgenson et al., 2016). Internet gaming and social networking are two online applications with which youth have been commonly associated and research has consistently identified a gender division in online activity preferences (Andreassen et al., 2016). Adolescent males are more likely to become compulsively involved with online video gaming, cyber-pornography, and online gambling, while adolescent females are most drawn to social media, texting, and online shopping (Andreassen et al., 2016).

Internet Addiction has been frequently described as a disorder in which an individual

lacks the ability to control his or her use of the Internet, an experience accompanied by distress

and/or functional impairment (Burnay et al., 2015; Laconi, Tricard, & Chabrol, 2015; Moreno,

Jelenchick, & Breland, 2015; Pontes et al., 2015; Weinstein & LeJoyeux, 2015; Young &

Nabuco de Abreu, 2011). Internet Addiction has been associated with psychological; social;

physical and academic; and/or employment difficulties, such as isolation, lower grades, obesity,

sleep problems (King Delfabbro, Zwaans, & Kaptsis, 2014), and/or conflict with family

members (Burnay et al., 2015; Laconi, Rodgers, & Chabrol, 2014; Pontes et al., 2015; Young &

Nabuco de Abreu, 2011), depression (Moreno et al., 2015; Tortolero et al., 2014), social anxiety

(Weinstein, Dorani, Elhadif, Bukovza, & Yarmulnik, 2015), ADHD (Chou, Liu, Yang, Yen, &

Hu, 2015), and substance abuse (Lee, Han, Kim, & Renshaw, 2013; Rücker, Akre, Berchtold, &

Suris, 2015).

Compulsive Internet users are known to spend a significant amount of time online,

isolating themselves from face to face interactions and concentrating almost entirely on Internet

activities (Weinstein et al., 2015). Internet Addiction has been shown to take place in at least

four different types of online activities, including: Internet gaming, viewing of Internet

pornography (Lin, Dong, Wang, & Du, 2015), visiting social networking sites (SNS; Blinka,

Škařupová, Ševčíková, Wölfing, Müller, & Dreier, 2015), and engaging in online shopping

(Carlisle, Carlisle, Polychronopoulos, Goodman-Scott, & Kirk-Jenkins, 2016).

Numerous explanations for IA have been offered in scientific literature. Some authors

have considered IA as part of Impulse-Control Disorder or Obsessive-Compulsive Disorder

models (Király et al., 2014; Weinstein, Feder, Rosenberg, & Dannon, 2014). Others have

considered IA as part of the behavioral addiction spectrum because it shows evidence of shared

features with gambling (Hsu et al., 2014; Laconi, Rodgers, & Chabrol, 2014; Quinones & Kakabadse, 2015; Rehbein, Kliem, Baier, MöBle, & Petry, 2015; Weinstein et al., 2014). Still others have conceptualized IA as a maladaptive coping strategy for dealing with negative life events (Burnay, Billiex, Blairy, & Larøi, 2015), or that IA is connected to specific features of the multi-dimensional impulsivity construct, suggesting that other psychological factors are involved in its development (Burnay et al., 2015). Regardless, authors of scientific literature have frequently debated whether IA can stand on its own as a primary disorder, or if it is the result of underlying mental disorders (e.g., depression, ADHD, impulse control disorder), configuring it as secondary disorder (Pontes et al., 2015; Tsitsika et al., 2014).

In 2013, after reviewing more than 250 professional articles in preparation for the publication of the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Disorders -5th edition  (DSM-5), Petry et al. (2014) reported that the workgroup responsible for non-substance addictive behaviors had concluded that research in this area was fairly limited and recommended that only gambling disorder be included in the substance-related, addictive disorders section of the APA's revised diagnostic manual. However, after careful review of other acknowledged non-substance related addictions, the workgroup voted to include only one other condition, Internet gaming disorder (IGD) in section 3 of the DSM-5, a step designed to stimulate further empirical investigation (Petry et al., 2014). According to Rehbein, Kühn, Rumpf, & Petry (2016), IGD is based on 9 criteria:

1. Preoccupation with Internet games (e.g., cognitive salience)

2. Withdrawal symptoms when prevented from gaming for extended periods of time

3. Tolerance manifested by need to spend increasing amounts of time engaged in games

4. Unsuccessful attempts to stop or reduce use

5. Loss of interest in previous hobbies or activities, with the exception of gaming (e.g., behavior salience)

6. Continued use despite knowledge of psychosocial problems

7. Deceit over amount used with family members, therapists, or others

8. Utilizing technology to escape or seek relief from a negative mood state

9. Jeopardizes important relationships, employment, or educational opportunities to play games

The DSM-5 supports a conservative cut-point of endorsing at least 5 of the 9 criteria over a 12-month period in order to warrant the diagnosis (Rehbein et al., 2016; Strittmatter et al., 2015).

While prevalence estimates vary considerably because of discrepant definitions, categorization, and diagnostic criteria, Cheng and Li (2014) conducted a meta-analysis to ascertain prevalence rates of IA across five continents. The authors found an overall frequency estimate of 6% for 31 nations spanning seven different world regions. Sim et al. (2012) reported that in a U.S. national sample of more than 1,100 youth aged 8 to 18, 8.5 % of video game players from this sample were classified as pathological. Li, O'Brien, Snyder, & Howard (2015) noted that epidemiological studies in the U.S. predict 1.2% to 26.3% of university students are affected by Internet addiction or problematic Internet use. And, in a review conducted by Moreno et al. (2011), prevalence estimates of IA ranged from 0% to 26.3% among U.S. youth (Hsu et al., 2014).

**Risk Factors for Internet Addiction**

Studies have evaluated different factors involving IA risk and how these variants contribute to development of the problem. Risk factors most often cited in professional literature

involve specific antecedents related to personality, comorbidity, and environmental factors (Griffiths, 2016). The personality traits commonly cited in research studies have included: sensation-seeking (Durkee et al., 2016; Griffiths, 2016; Jorgenson et al., 2016; Rehbein et al., 2016), low reward dependence (Jorgenson et al., 2016; Rehbein et al., 2016), diminished self-control (Griffiths, 2016), low self-esteem (Griffiths, 2016; Jorgenson et al., 2016; Rehbein et al., 2016), less social competence (Rehbein et al., 2016), loneliness and introversion (Griffiths, 2016; Jorgenson et al., 2016), and increased hostility and aggression (Andreassen et al., 2016; Carlisle et al., 2016; Griffiths, 2016; Lam, 2014a; Rehbein et al, 2016).

As earlier referenced, gender presents a significant variant in risk assessment, with females frequently associated with addictive social networking, and males more often identified with addictive video gaming (Andreassen et al., 2016; Durkee et al., 2016; Frölich et al., 2016; Griffiths, 2016; Jorgenson et al., 2016; Rumpf, Tao, Rehbein, & Petry, 2016). Common explanations given for gender preferences and online activities claim that females are more prone to social interaction and cooperative activities, while males are more drawn toward activities that involve aggression and competitive content (Andreassen et al., 2016). In addition, males are more frequent users of adult-only sites (Ciarrochi et al., 2016).

Environmental risk factors reported in empirical literature have included the amount of time an individual spends on the Internet, noting that increasing amounts are directly related to IA development (Jorgenson et al., 2016). In a clinical study, Frölich et al. (2016) examined 183 adolescent psychiatric patients and found that the identified high addiction group's game time use was on average six-times longer than game time use of those with lower addiction scores. The researchers concluded that male patients with the highest addiction scores spent increasingly more time computer gaming, while also demonstrating more school related problems and other

co-morbidities. Additionally, Griffiths (2016) reported that time spent playing online games was more frequently associated with Internet Gaming Disorder (IGD) than time spent playing offline games. Albeit, some have argued that because Internet use/gaming are popular forms of entertainment for youth, an analysis of time spent engaged with these activities may not be an accurate measurement of problematic Internet use (Ciarrochi et al, 2015; Durkee et al., 2016; Griffiths et al., 2015; Jorgenson et al., 2016).

However, Griffiths (2016) reports that spending larger amounts of time playing video games can lead to a wide array of negative psychosocial consequences for a minority of affected individuals. These consequences include sacrificing education, time with family and sleep, increased stress, fewer real life social relationships, lowered psychosocial well-being, loneliness, poorer social skills, maladaptive coping, decreased verbal memory performance, maladaptive coping, increased inattention, aggressive/oppositional behavior, and suicidal ideation. Additionally, excessive use has been reported to contribute to the following health and medical consequences: epileptic seizures, auditory and visual hallucinations, enuresis, encopresis, obesity, wrist pain, neck pain, elbow pain, numbness of fingers, tenosynovitis (also called nintendinitis), sleep abnormalities, and repetitive strain injuries (Griffiths, 2016). Taken altogether, these facts provide strong evidence that excessive use of Internet technology has negative psychosocial and medical consequences, irrespective of whether it can be linked to addiction (Durkee et al., 2016; Frölich et al., 2016; Griffiths, 2016).

Age is comparably associated with increased risk. Early exposure to mobile devices has been suggested as a major contributor to behavioral problems related to technology over-use in children and young adolescents (Kuss & Griffiths, 2015). Kabali et al. (2015) report that in conducting a cross-sectional research study of 350 children, aged 6 months to 4 years seen in a

pediatric clinic in an urban low-income area of the U.S., 96.6% of these children used mobile

devices, and most children began using the devices before the age of one. Seventy percent of the

parents surveyed reported that they gave their children electronic devices so they could complete

chores, 65% used the devices to keep their children calm, and 29% of the children were given

electronic devices at bedtime.

More recent studies have consistently indicated that adolescents develop IA/IGD at

higher rates than adults (Carlisle et al., 2016; Rehbein et al., 2016; Rumpf et al., 2016). A large

segment of today's youth culture communicates through digital media or online environments,

which provide unique avenues for psychosocial development among adolescents (Andreassen et

al., 2016; Durkee et al., 2016; Jorgenson et al., 2016). Adolescence is a developmental time

highly prone to the initiation of addictive behaviors. As social demands are increasingly more

connected to online activities, risk-taking behavior will spill over into that environment

(Jorgenson et al., 2016). Once problematic behavior patterns become entrenched, there is greater

likelihood that the behaviors will continue into adulthood (Durkee et al., 2016; Jorgenson et al.,

2016).

One of the few studies conducted to date, examining 2-year longitudinal data sets on

children and adolescents, found that increases in pathological gaming predicted future levels of

poorer mental health in the form of social phobia, anxiety, and depression in children between

grades three and four, and, also adolescents in grade eight (Gentile et al., 2011). In a different

study completed by Durkee et al. (2016), examining association between risk-behaviors and IA

in European adolescents, researchers determined that among the adolescents found to have IA,

89.9 % manifested multiple risk-behaviors. This finding suggests that the more risk factors a

youth partakes in, the greater the likelihood that the youth is vulnerable to problematic behaviors involving online technologies.

Family functioning also contributes to risk of IA (Carlisle et al., 2016; Lam, 2014b; Rumpf et al., 2016). Parenting styles have been found to influence indirectly the development of IA. Specifically, this includes low family monitoring (Frölich et al., 2016; Jorgenson et al., 2016; Lam et al., 2014), lack of external parental control (Frölich et al., 2016), infrequent parental support (Rehbein et al., 2016), and also high levels of family dysfunction and/or conflict between the parent and child (Jorgenson et al., 2016; Lam, 2014b).

**Prevention and Treatment of IA and IGD**

Jorgenson et al. (2016) have reported that prevention programs for IA/IGD are still in early formative stages, and empirical investigation into overall effectiveness has not been tested in any controlled studies. However, the authors offered some practical tips for parents (p. 6-7).

1. Encourage other interests and activities that do not involve the Internet. Team sports and after school clubs can promote healthy face-to-face peer interactions.

2. Set clear limits on time spent online (less than 2 hours per night). Restrict use of the computer to a common area so you can monitor online activity. Consider various apps to help limit use of the Internet through smartphones (limiting data usage, restricting texting, and web browsing to certain times of day). Model appropriate Internet use.

3. Talk to your teens about stressors in their lives. Consider the role of anxiety or depression. Seek professional help if there are concerns about mood.

Several online resources offer parents information on how to guide their children toward responsible use of online technology. These resources include links to sites devoted to protecting

youth from online risks and future problems related to their technology use. Table 1 provides a

brief overview of several of the most widely recognized of these online resources for parents.

Table 1
*Online Parental Educational Resources*

| Website | Description of Resource |
|---|---|
| Cyberwise<br>Website: http://www.cyberwise.org | At Cyberwise, no grownup is left behind! The site is set up to help parents and educators understand digital citizenship, online safety and privacy, reputation management, and more in order to help kids embrace technology safely and wisely. |
| Entertainment Software Rating Board (ESRB)<br>Website:  http://www.esrb.org | The ESRB is a non-profit, self-regulatory body that independently assigns age and content ratings for video games and mobile apps so parents can make informed choices. It also enforces advertising guidelines adopted by the video game industry and helps companies implement responsible online and mobile privacy practices under its "Privacy Certified" program. |
| OnGuardOnline.gov<br>Website: http://www.onguardonline.gov | OnGuardOnline.gov is the federal government's website to help U.S. citizens be safe, secure and responsible online. Has resources to help parents reduce online risks through online toolkits and tips based on developmental ages of youth. |
| The Center on Media and Child Health<br>Website: http://www.cmch.tv | The Center on Media and Child Health is part of Boston Children's Hospital (BCH) and serves as an academic research center whose mission is to educate and empower children and those who care for them to create and consume media in ways that optimize children's health and development. |
| Common Sense Media<br>Website:<br>https://www.commonsensemedia.org/blog | They offer developmentally age-appropriate, unbiased information to help parents decide what media are right for the family. Blog is entitled: "Parenting, Media, and Everything In Between." |
| Healthychildren.org<br>Website:<br>https://www.healthychildren.org/English/family-life/Media/Pages/Tips-for-Parents-Digital-Age.aspx | American Academy of Pediatrics resource for parents entitled: "Kids and Tech: 10 Tips for Parents in the Digital Age." Information came from proceedings of 2015 symposium, "Growing Up Digital: Media Research Symposium". |
| The Center on Media and Child Health<br>Website: http://www.cmch.tv | The Center on Media and Child Health is part of Boston Children's Hospital (BCH) and serves as an academic research center whose mission is to educate and empower children and those who care for them to create and consume media in ways that optimize children's health and development. |
| Top Ten Review<br>Website: http://www.toptenreviews.com/ | Online publishing company that provides free reviews of software, electronics, and web services, including information pertaining to Internet monitoring options for parents. |

Treatment of IA/IGD reflects similar psychological and pharmacological interventions currently used in existing substance and behavioral addiction treatment approaches. Effective interventions are suggested to target the condition directly, as well as interventions that are tied to decreasing the amount of time spent engaged in online activities. Additionally, the treatment of co-morbid conditions (e.g., depression, anxiety, ADHD) constitutes an important factor to consider when developing treatment strategies (Jorgenson et al., 2016). Cognitive-Behavioral Therapy and other psychosocial interventions can be effective in combination with 12-step self-help programs and other motivational enhancement strategies (Griffiths, 2016; Jorgenson et al., 2016; Kuss & Griffiths, 2015).

Family-based approaches are recommended as adjunct to any treatment modalities, especially in lieu of reported findings relating familial risk factors with IA/IGD. Jorgenson et al. (2016) have emphasized the need for interventions that reduce inter-parental conflict and promote healthy family functioning, as well as encourage Internet regulation; hence, these authors have stressed the importance of family-focused strategies as natural goals for any treatment plan. Pharmacotherapy has also been shown to produce positive results for people with comorbid psychiatric diagnoses. Studies have reported that use of bupropion and naltrexone can reduce cravings and severity and can also modify cue-induced brain activity. Additionally, methylphenidate has shown positive results to treat drug-naïve ADHD children by helping reduce time spent on the Internet (Jorgenson et al., 2016). However, research about treatment options for IA/IGD has remained limited in empirical literature because of inconsistencies in diagnostic and assessment measures for IA. Most research study recommendations have pointed to the need for future controlled, comparative studies to determine effectiveness of treatment

supports for IA/IGD (Carlisle et al., 2016; Griffiths, 2016; Jorgenson et al., 2016; Kumpf et al., 2016; Kuss & Griffiths, 2015).

Although not published in a peer reviewed journal, on November 5, 2015 *The Atlantic* article entitled "The Rise of the Internet-Addiction Industry" provided a significant and balanced overview of professional and patient observations related to the evolving definition of IA and accompanying approaches to therapeutic response. Clare Foran, the article's author and also associate editor for *The Atlantic,* reported that IA treatment programs have been opening up across the U.S., ranging from outdoor wilderness programs that blend mental health and wilderness adventure therapy, to programs modeled after substance abuse and gambling addiction treatment programs. In each case, the most important part of the program has been to support patients in refraining from any form of technology for specified periods, while also encouraging these individuals to examine underlying reasons for the compulsive nature of their technology use. As an update to Foran's overview, Table 2 provides a summary of prominent programs available in the United States (Alter, 2017). Significantly, IA remains an unrecognized mental health diagnosis in DSM 5, resulting in circumstances which remain much the same as Foran observed in her article: "…most insurance companies currently won't cover the cost of these expensive programs, placing them out of reach to many Americans who could potentially benefit from treatment."

Table 2

*Residential Internet Addiction Treatment Programs in the U.S.*

| Name of Program | Type of Intervention | Program Length | Estimated Cost |
|---|---|---|---|
| Bradford Regional Medical Center-Bradford, PA *Internet Addiction Program* | Structured group and individual therapy and detoxification from electronic media in voluntary secured (locked) hospital unit. Adult only. | 10 days | $14,000 |
| Camp Grounded-Mendocino, CA | Outdoor summer camp with no technology devices allowed. | Held over weekend | Sliding Scale starting at $495 |
| Outback Therapeutic Expeditions, Lehi, UT | Adolescent-focused mixture of mental health and outdoor wilderness program. | 8-10 weeks | $25,000 - $30,000 |
| reStart - Center for Digital Technology Sustainability, Fall City, WA<br><br>Adolescent program located in Sultan, WA opened in 2016. | Young adult (primarily male) retreat program located in wilderness setting. Modeled after traditional addiction treatment programs, including12-Step support group attendance | 8-12 weeks | A little over $30,000 |

According to Harrison (2015), the family home is the first place where children learn how to structure time and space in a way that directs the pace of everyday life. Families create opportunities for interacting with screen technologies, including deciding which devices are in the home and what restrictions exist for those who use them. In most cases, children are first exposed to media screens by their parents (Nathanson, 2015), and, as a result, the parents' technology use and attitudes become key factors in children's understanding of media devices (Lauricella, Wartella, & Rideout, 2015). Parents influence their children's technology use both intentionally and unintentionally through mechanisms of monitoring, mediating, and modeling online activities (Vaala & Bleakley, 2015).

**Parental Mediation and Monitoring**

According to Vaala and Bleakley (2015):

Parental mediation refers to intentional actions by parents to restrict their children's or

adolescents' time spent using media, exposure to certain content or types of involvement

and/ or, to mitigating negative effects of media through co-use or discussion of media

content (p. 42).

Parent mediation essentially involves parents' interactions and interventions (e.g., rule setting,

restrictions, co-viewing discussions) related to their children's technology use (Benrazavi et al.,

2015), and also serve to buffer potential negative influences, and facilitates positive outcomes

with interactive technology (Vaterlaus, Beckert, Tulane, & Bird, 2014).

Parental mediation has been divided into three distinct behavioral approaches: *active*

*mediation, restrictive mediation, and mediation through co-viewing* (Benrazavi et al., 2015;

Chng et al., 2015; Shin & Kang, 2016; de Morentin et al, 2014; Vaala & Bleakley, 2015;

Vaterlaus et al., 2014). First, *Active mediation,* also known as instructional or evaluative

mediation (Benrazavi et al., 2015; Shin & Kang, 2016), includes parental discussions, comments,

interpretations, and evaluations of children's media use in order to increase the children's

understanding of underlying messages parent's want to convey and also highlighting negative

effects media content can have on youth (Chng et al., 2015; Gentile et al., 2014; Vaala &

Bleakley, 2015). Active mediation also includes parents' explanations and/or discussions of

offensive aspects of media content and also suggestions for proper use of media (Shin & Kang,

2016). According to Chng et al. (2015), active communication associated with children's Internet

use serves as a preventative barrier for problematic Internet use. Moreover, this form of

mediation increases children's ability to become more critical of online content and therefore

discerning of Internet safety concerns (Benrazavi et al., 2015; Chng et al., 2015).

*Restrictive mediation* relates to parental rule setting intended to limit the amount of time or type of content identified as acceptable for children's technology use (Gentile et al., 2014). The term "restrictive" relates to parents' interest in controlling children's media use to support reducing and supervising technology use in general (Shin & Kang, 2016). "Restrictive" can also include the following preventative interventions: installing Internet filters (e.g., Net Nanny), blocking texting, limiting cell phone minutes, using timers on Internet modems, installing password protection devices, and maintaining control of devices through parental ownership (Vaterlaus et al., 2014). Chng et al. (2015) reported a positive link between children's online participation and risk reduction when parental mediation includes restrictive measures. However, Shin and Kang (2016) have reported that active mediation is more effective than restrictive because the mode of interaction displaces control-based mentality, replacing it with encouragement of critical thinking skills and perspicuity in children.

*Co-viewing* occurs when parents view or use media with children. In this case, parents take an active role in shaping children's media use by participating in the media experience (e.g., watching television shows together, being Facebook friends, or playing video games together) (Vaala & Bleakley, 2015; Vaterlaus et al., 2014). Most studies examining parental mediation have found that social mediation techniques, such as co-use, and the communication of rules between parents and children are generally more effective than the introduction of software or hardware that restricts use (Vaala & Bleakley, 2015).

According to de Morentin et al. (2014), most parents do not actually know how to intervene in their children's Internet technology use, so these parents often resort to restrictive mediation methods. These researchers have also highlighted that parents intervene or mediate TV viewing more often with active mediation methods. However, because parents may be

unfamiliar and uncomfortable with the Internet environment, they may not use an active

mediation approach. Moreover, Gentile et al. (2014) have reported that parental monitoring of

media use typically decreases as children grow, with heavier involvement taking place during

early childhood and less oversight occurring by the time children reach adolescence. Hence,

discrepancies exist between what parents and children report as the actual amount of mediation

occurring in families. Vaterlaus et al. (2014) stated that from their research examining

generational differences in perceptions of parental mediation between 80 adolescents (16-18

years of age), and their parents (n = 113), 55% of parents reported that they mediate in their

adolescents Internet use, as compared to 76% of the adolescents who reported that their parents

did not mediate their use at all.

Benrazavi et al. (2015) have contended that opposing opinions exist among researchers

concerning which mediation method is more effective in preventing problematic Internet use in

youth. A study conducted by van den Eijnden et al. (2010) found that constructive

communication about Internet use could provide an encouraging tool for parents to use when

seeking to prevent their adolescent children from developing behaviors related to compulsive

Internet use. Moreover, parents' rational reaction to excessive Internet use and clear family rules

about the use of newer technologies can combine to serve as preventative influences, whereas

strict rules about the amount of time allowed on the Internet was found to promote compulsive

tendencies in adolescent children. In a recent Australian study examining parental influence on

video game playing of 422 adolescents between 12-20 years of age, key findings included the

assertion that accessibility in number of devices owned and allowed use of the devices in

children's bedrooms significantly increased number of hours spent gaming. In contrast, parental

discussion of cyber-safety was associated with reduced number of hours spent engaged in online activity (Smith, Gradisar, & King, 2015).

Another study investigated the relationship between adolescents' excessive Internet use (EIU) and parental mediation in a random stratified sample of 18,709 11- to 16-year-olds from 25 European countries and their parents. Results of the study indicated that active involvement in youths' online activities within a family atmosphere of positive regard resulted in a modest impact on adolescent EIU (Kalmus et al., 2015). The authors suggested that policy initiatives ought to encourage parents to employ active mediation strategies realized through the mechanisms of encouragement, co-viewing, and discussion of children's online experiences. The goal of this approach would be to limit exposure to online risks without diminishing positive online opportunities (Kalmus et al., 2015).

**Correlation between Family Functioning and Internet Addiction**

Chng et al. (2015) reported that empirical data on the family role in creating IA is limited, but a review of available research highlights the reciprocal effect of impaired family functioning and IA on adolescents. Numerous studies have suggested that adolescents' perception of poor family functioning is a strong indicator of IA (Chng et al., 2015; Ko et al., 2015; Ruhbein & Baier, 2013; Lam, 2015; Vink, van Beijsterveldt, Huppertz, Bartels, & Boomsma, 2015; Wartberg et al., 2014; Xiuqin et al., 2010; Yen et al., 2007; Zhu, Zhang, Yu, & Bao, 2015). By contrast, excessive Internet use significantly decreases the amount of time youth interact with peers and family and participate in outside activities (Chng et al., 2015). Internet Addiction can result in more discord and poorer interpersonal relationships with family members. Those adolescents who view their home environments as problematic may engage in Internet use as a

form of escapism in which personal connections made online reinforce negative beliefs they have about their families (Chng et al., 2015; Li, Chen, Li, & Li, 2014).

Liu, Fang, Deng, and Zhang (2012) found that adolescents who receive more support from their parents tend to participate in fewer negative and antisocial behaviors. In contrast, adolescents whose parents provide insufficient attention and support are more likely to be psychologically unstable and prone to overuse the Internet as an escape from home situations. Additionally, these researchers reported that parental norms regarding adolescent Internet use and parent-adolescent communication negatively predicted adolescent IA when both parental Internet use behaviors and parent-adolescent communication were consistent and generally more supportive. Conversely, parent-adolescent communication predicted IA when parental norms were inconsistent with parental behaviors, and communication between the child and parent was strained. The authors concluded that the most effective monitoring and controlling strategies for parents are to censor their own behaviors and control their own words and actions that discourage youth from being open and communicative (Liu et al., 2012).

In a more recent study, Wasiński and Tomczyk (2015) assessed the risk for IA among 368 middle-school children in Poland and determined that key factors in the home environment increasing the risk for IA included: lack of parental interest in children's online activities, lack of preparedness to model safe forms of participation in online environments, and youth concealment of online activities. A review of English and Chinese language studies examining family correlates of IA in Chinese youth as compared to non-Internet addicted counterparts identified the following family factors as responsible for increasing risk: general dissatisfaction with parents or family; higher inter-parental, parent-child, or general family conflict; and less organized, cohesive, and adaptable families (Li, Garland, & Howard, 2014). Additionally, the

youth perceived their parents as "more punitive, and less supportive, warm, and involved" as compared to non-Internet addicted youth. Further, Internet addicted youth in the study were significantly more likely than their counterparts to have divorced parents, live with a single parent, and/or be an only child (Li et al., 2014).

An important aspect to consider in understanding the etiological mechanism of IA is the degree that both genetic and environmental influences contribute to development of the condition. Much of empirical research to date has been devoted to environmental factors underpinning IA, including: high family conflict, low family monitoring (Vink et al., 2015), poor family functioning, low socio-economic status, negative life events, and limited social supports (Li et al., 2014). However, attention has been directed recently toward genetic predisposition (Li et al., 2014; Vink et al., 2015) as well as neuropsychological and neuroimaging understanding of the problem (Brand et al., 2014).

In separate twin studies conducted by Li et al. (2014) and Vink et al. (2015), IA was correlated to both genetic and non-shared environmental factors (e.g., accessibility to the Internet, peer influence, and intrinsic self-regulation), but not family environment, as previously shown. However, Vink et al. (2015) were quick to point out that while they did not observe a correlation between the development of compulsive Internet use and undifferentiated family environmental factors, a growing body of scientific opinion has supported the view that a substantial part of individual differences in youth evaluation of family functioning involves genetic factors. This finding underscores the importance of examining genetic risk factor for IA along with environmental influences (Vink et al., 2015).

Brand et al. (2014) concluded from a review of professional articles on neuropsychological and neuroimaging that IA shares several similarities with other forms of

addictive behaviors and, as a result, should be classified as a clinically relevant disorder and conceptualized as a behavioral addiction. In line with this conceptual framework, family dynamics, disruptions, and stress can promote the development of IA, in addition to shaping how the family enables, encourages, and overlooks the addictive behaviors related to IA (Beard, 2011). Parents may rationalize their children's IA, or may be unaware of what their children are doing online. In some cases, a parent may even engage in problematic Internet use him or herself (Beard, 2011).

**Parent Modeling**

Bleakley, Vaala, Jordan, and Rommer (2014) contended that the best strategy to discern media use patterns and influences on youth requires closer examination of the home media environment. For instance, past studies have indicated that the number and placement of screen devices in the family home predicts the amount of time youth spend engaged with these devices (Jago, Sebire, Edwards, & Thompson, 2013). Therefore, family rules regarding the amount of time spent on media devices and content allowed in the home predict the extent of exposure children will likely experience (Gentile, Reimer, Nathanson, Walsh, & Eisenmann, 2014). Additionally, parents' own perceptions about the benefits and drawbacks to using newer media will also influence youth media habits (Lauricella et al., 2015). Most importantly, scientific literature has substantiated that children's consumption of screen media is patterned after parents' own use (Bleakley et al., 2014; Harrison, 2015; Jago et al., 2013; Lauricella et al., 2015; Lim, 2016; Nathanson, 2015; Vaala & Bleakley, 2015).

Consistent with Bandura's Social Cognitive Theory (SCT) (1986), children and adolescents learn by imitating what they see around them, especially if the behaviors appear realistic and are rewarded (Bleakley et al., 2014; Strasburger et al., 2010). According to

Lauricella et al. (2015), young children occupy much of their earliest years learning from their

parents and siblings at home. By studying others, a child forms rules of behavior that become

coded information and later guide behavioral decisions (Bandura, 1986; Lauricella et al. 2015).

Children observe their parents in numerous activities, such as preparing food, interacting with

others, and using different sorts of screen media (Lauricella et al., 2015). As children watch their

parents model media use in various scenarios throughout the day, they begin to imitate the

observed behaviors (Lauricella et al., 2015). Social Cognitive Theory provides a conceptual

framework for understanding how youth pattern Internet technology use by observing how their

parents and siblings interact with media at home (Bleakley et al., 2014).

## Social Cognitive Theory

Social Cognitive Theory embodies a theoretical model that attempts to explain how

children and adults function cognitively through their social experiences and how these

cognitions influence future behavior and psychosocial development (Grusec, 1992). According

to tenets of SCT, human behavior derives from multifaceted reciprocal interactions between an

individual, his/her environment, and behavioral determinants (Bandura, 1989, 1997). This

interplay of influencing factors guides development of individual competencies and self-

regulatory behaviors. Early observational and contingency learning create a sense of *personal

agency,* which is described as belief in one's ability to influence life circumstances and long-

term functioning (Bandura, 1997, 2005; LaRose, Mastro, & Eastin, 2001). One of the most

important mechanisms of personal agency is an individual's belief in his/her own competency to

organize and regulate his/her life events (Bandura, 1989; Niaura, 2000). Possession of strong

*self-efficacy* for pursuit of coveted endeavors is key to human attainment and wellbeing

(Bandura, 1995). A core supposition of SCT is that humans are active contributors to their life

circumstances, not just byproducts of them (Bandura, 1999, 2006; Davidson Films, Inc., 2013; Niaura, 2000; Pajares, 2001).

**Modeling and Observational Learning**

According to SCT, humans possess the evolved capacity for observational learning that enables them to absorb information rapidly and develop individual competencies through four main sources of influence: *attention processes, symbolic representation, transformative action,* and *motivational incentives* (Davidson Films, Inc., 2013). Attention involves the observer identifying behaviors of models through direct observation and/or through abstract processing. The amount of attention the observer gives is contingent upon a group of factors, including the vivacity of the model and circumstances surrounding how the model's behaviors are enacted (Grusec, 1992). When the information gained from observation is sufficiently addressed it will be retained and converted into memory through symbolic or verbal depictions. Once conceptualized, the symbolic representation is demonstrated through actions closely resembling the original behavior. Finally, an individual must have reason/motivation to continue to perform the modeled behavior (Davidson Films, Inc., 2013; Grusec, 1992). Thus, people are motivated to act when witnessing the successes of others who are similar to them. Conversely, they will be discouraged from pursuing certain behavioral actions because of observing aversive consequences affecting close social models (Bandura, 1999).

Bandura's early research on observational learning/social modeling included the famous *BoBo doll experiment*. In this field study, Bandura and his research team determined that children who had observed adults performing aggressive styles of behavior toward an inflated rebounding doll adopted in turn similar hostile actions toward the doll. These observations supported Bandura's supposition that aggressive behavior is learned (Davidson Films, Inc.,

2013). The *Bobo doll experiment* also corroborated his earlier research examining hyper-aggressive adolescents who grew up with parents who modeled hostile attitudes (Bandura, 2006a; Pajares, 2001).

**Self-Regulatory Capabilities**

Social cognitive theorists maintain that humans possess *self-regulatory* capabilities that influence intentional behavior through a sub-set of psychological functions, including *self-monitoring, self-judgment,* and *self-reaction* (Bandura, 1991, 1999, 2006a; Grusec, 1992; LaRose et al., 2001). Self-monitoring involves self-observations that provide diagnostic information on the impact that an individual's behavior has on others, the environment, and the individual him- or herself. The judgmental process uses personal standards, social norms, and perceived valuation of behavioral activities through the mechanism of self-observation to make behavioral decisions. Also, self-reactive processes reinforce behavioral incentives whenever attaining pre-established standards of behavior (LaRose, 2001). From an SCT perspective, addiction develops from a combination of dysfunctional self-regulatory capabilities and differential reinforcement of both positive and negative outcome expectancies, which are defined next. (LaRose, Lin, & Eastin, 2003; Ward & Gryczynski, 2009).

**Self-Efficacy**

Self-beliefs have the capacity to influence goals and aspirations, levels of motivation, and tenacity to overcome life adversities, self-beliefs can be either self-enhancing or self-depreciating. Additionally, self-beliefs influence *outcome expectations,* defined as judgments of the likely outcome of a behavior to influence events positively or negatively (LaRose et al., 2001). People exhibiting low efficacy have been reported to give up easily when encountering problems, resorting instead to default beliefs of persistent inability to leverage positive change in

problematic situations. Those with high efficacy, on other hand, display a strong sense that they can overcome any obstacles through perseverance and determination to exert positive influence (Bandura, 2005). Efficacy beliefs also influence the quality of emotional life and vulnerability to stress and depression. In conducting meta-analysis of self-efficacy research, Bandura (2005) reported a significant relationship between self-beliefs and an individual's level of motivation, socio-cognitive functioning, emotional wellness, and performance accomplishment.

According to Bandura (1977, 1986, 1995, 1997), strong self-efficacy beliefs develop through four sources of influence, including *mastery experiences, vicarious experiences, social persuasion, and physiological and emotional responses to stress* (Bandura, 1977; Davidson Films, Inc., 2013). The most influential and veracious method for infusing strong self-efficacy beliefs occurs through *mastery experiences* or performance accomplishments. These experiences entail seeking out and internalizing cognitive, behavioral, and self-regulatory tools needed to meet life's changing circumstances. Inversely, consistent failures to achieve set behavioral goals undermine efficacy beliefs, especially if these failure experiences occur before self-development is completed (Bandura, 1997, 1999). Yet, if an individual accomplishes things too easily, he/she becomes discouraged when faced with failures or setbacks. Hence, resiliency is built on the foundation of overcoming difficulties through persistent efforts in response to life's challenges (Bandura, 1995, 1999).

The second path to self-efficacious beliefs is through *vicarious experiences* that evolve from observing social models performing difficult tasks without experiencing adverse consequences. Viewing models in this way generates positive expectations that support the observer in both intensifying and persisting in his/her efforts (Bandura, 1995). In contrast, witnessing social models failing after repeated tries reduces observers' self-judgments about

their own efficacy and weakens their motivational levels (Bandura, 1995). The more similarity between observers and social models, the more convincing these models' achievements and failures become (Bandura, 1986, 1995). Competent models build efficacy beliefs by exhibiting effective responses to challenging situations (Bandura, 1999).

Another way to cultivate self-efficacious beliefs is through verbal persuasion. According to Bandura (1997), verbal persuasion involves using verbal suggestions to influence an individual's self-belief that he/she has the power to overcome any challenges he/she faces. Therefore, self-efficacious beliefs are strengthened when an individual receives verbal support and encouragement. In comparison, self-efficacious beliefs are weakened by verbal discouragement and belittlement, often leading to self-doubt and rumination about one's abilities to overcome life challenges (Bandura, 1977, 1995). Albeit, verbal persuasion by itself cannot sustain long-term efficacious beliefs, the commitment to self-change is often bolstered when the verbal feedback aligns with realistic expectations. In trying situations, an individual with high self-efficacy will expend more effort and maintain it until the concern is resolved. Individuals who do not believe they possess strong capabilities will avoid pursuing challenging activities that increase their competencies and will, as a consequence, back down quickly when facing difficult situations. By limiting behavioral choices and eroding motivational efforts, self-disbeliefs develop into their own form of self-reinforcing behaviors (Bandura, 1986, 1995, 1999).

In judging one's own capabilities, an individual relies on somatic information projected through *physiological and emotional responses* to stressful and challenging situations as evidence of the ability to withstand hardships (Bandura, 1986, 1997). Mood states can also affect individual judgments about personal self-efficacy. Positive mood can enhance self-efficacious beliefs, and despondency will reduce them (Bandura, 1995). The fourth way to alter efficacy

beliefs is to enhance physical strength, reduce stress, and modulate emotional reactions by correcting misinterpretations of bodily responses to onerous situations (Bandura, 1995, 1999).

Efficacy beliefs are thought to regulate human functioning through four processes, including *cognitive, motivational, affective, and choice/selection* processes. These different modes operate in unison, rather than in isolation, during the ongoing regulation of human functioning (Bandura, 1995). *Cognitive* processes influence efficacy beliefs by facilitating whether or not individual thinks optimistically or pessimistically. *Motivational* processes support the types of challenges in which people engage, based on their self-appraisal of capabilities. *Emotional* processes affect how people cope with stress and negative emotions in threatening or wearing situations. And, *choice/selection* center on processes that enable individuals to influence their life paths based on selection and construction of environments in which they exercise control over what they encounter daily (Bandura, 1986, 1989, 1995; Davidson Films Inc., 2013).

**Parenting Self-Efficacy.** Social Cognitive Theory contends that development of perceived efficacy beliefs results directly from how families manage various aspects of familial relationships and also the level and quality of family life conditions (Bandura, 2005). *Parental self-efficacy* (PSE) plays a pivotal role in this process, as a strong sense of PSE increases facilitative and protective factors for children, which in turn reduces their vulnerability to emotional distress and depression. Weakened parental attachments interfere with and/or constrict quality of parenting practices (Bandura, 2005) and may result in children exhibiting behaviors of learned helplessness in which their efforts yield ineffectual results (Doumas, King, Stallworth, Peterson & Lundquist, 2015). Social Cognitive Theory asserts that a high degree of PSE accounts for not only emotional wellness and enhanced quality of caretaking, but also shapes future direction of a child's developmental trajectory (Bandura, 2005).

Parental self-efficacy is achieved whenever parents report having confidence in their ability to provide important child-rearing activities (Coleman & Kaaracker, 1997, 2000; Jones & Prinz, 2005; Warren, Brown, Layne, & Nelson, 2011). Such beliefs facilitate parenting behavior, which among other developmental outcomes, influences children's own self-efficacy and "*control beliefs*" (Schneewind, 1995, p. 116). *Control beliefs* have been described as a child's knowledge of important avenues to attain desired goals in academic, social, and physical domains, and refers to the extent to which children believe these goal-relevant efforts are actually available and can be influenced by their behavior (Schneewind, 1995). Parental self-efficacy also involves belief in perceived ability to influence positively the behavior and development of one's own offspring (Jones & Prinz, 2005). Thus, PSE beliefs incorporate both the level of specific knowledge pertaining to behaviors involved in child rearing and the degree of confidence parents maintain in their ability to carry out requisite behavioral expectations (Coleman & Karraker, 1997).

Social cognitive theorists have established an association between high maternal self-efficacy and specific adaptive parenting skills, including: responsive, stimulating, and non-punitive caretaking; the ability to attend to and understand infant signals; more active and direct parenting interactions; parental acceptance and interest in promoting children's concerns; active maternal coping orientations; and absence of maternally perceived behavioral problems in offspring (Jones & Prinz, 2005; Warren et al., 2011). Additionally, parents with high PSE are more apt to persist when facing challenges, such as managing children with difficult temperaments or limited verbal skills (Johnston & Mash, 1989; Kunseler, et al., 2016; Warren et al., 2011), and maintaining a tendency to assess situations as less problematic, and believing that difficulties can be resolved (Bloomfield & Kendall, 2012). In general, parents with high PSE

demonstrate confidence when engaging in effective parenting strategies (Doumas et al., 2015; Johnston & Mash, 1989).

Conversely, low PSE has been correlated with parental depression, parenting stress, dysfunctional family interaction patterns, parental physical and mental health problems (Coleman & Kaaraker, 2000; Warren et al., 2011), maternal learned helplessness, defensive and controlling behaviors (Donovan, Leavitt, & Walsh, 1990; as seen in Coleman & Kaaraker, 1997; Doumas et al., 2015), maternal perceptions of child difficulty (Johnston & Mash, 1989), and passive coping style in parenting  (Warren et al., 2011; Wells-Parker, Miller, & Topping, 1990). Moreover, parents with low PSE are often hypersensitive, and as result become ineffective in dealing with difficult child behavior (Johnston & Mash, 1989; Jones & Prinz, 2005).

With positive supports, changing parents' perceptions of competency can serve as a useful strategy for improving immediate child-rearing environments and possibly augmenting efforts to moderate socio-economic conditions believed to impact negatively children's lives (Coleman & Kaaracker, 1997). One therapeutic technique demonstrating positive results in this area involves parent trainings that provide specific techniques, including didactic instruction, role-playing, and skills practice in structured settings (Coleman & Kaaracker, 1997). One study found that intervention attendance, expressed readiness for parenting change, and PSE all have been significant predictors of positive parenting outcomes based on programs designed to reduce child risk and early substance use initiation (Coleman & Karraker, 1997; See also Spoth, Redmond, Haggerty, & Ward, 1995). The authors of the study concluded that the degree to which parent-training efforts incorporate traditional goals of providing information and encouraging development of new skills depends largely on integration of PSE concepts into the intervention model (Coleman & Karraker, 1997; see also Spoth et al., 1995). Bloomfield and

Kendall (2012) have reported that "parenting programs provide opportunities for parents to develop their self-efficacy beliefs through learning and achieving positive behaviors, by experiencing other parents' success through encouragement from programme (UK) facilitators, and other parents" (p. 365).

**Measurement of PSE Beliefs.** According to Jones and Prinz (2005), PSE has been assessed primarily through self-reporting instruments. However, conceptualization and measurement of the construct have remained problematic (Coleman & Kaaraker, 2000). Typically, PSE is measured in one of three ways: *task-specific*, *domain specific,* or *general self-efficacy*. *Task-specific* measures parents' perceptions of their own competencies particular parenting tasks. Examples include identifying physical illness in their children or providing toilet training to their children (Coleman & Kaaracker, 2000; Jones & Prinz, 2005). *Domain specific* self-efficacy merges task-specific measures into a single measure of self-efficacy under predominant domain of parenting (Coleman & Kaarracker, 1997, 2000). Examples include statements on a self-report survey, such as: "I am doing a fine job as a parent" (Coleman & Kaaracker, 2000), or "Being a parent makes me tense and anxious" (Johnston & Mash, 1989). And finally, *general self-efficacy* (GSE) focuses on the degree a parent feels competent in the parenting role, without factoring in specific tasks related to parenting (Coleman & Kaarker, 1997; Jones & Prinz, 2005). This measure classifies self-efficacy as a stable personality trait emerging from combined efficacy information based on the number of conceptually related experiences (Coleman & Kaarker, 1997, 2000).

The majority of studies describing PSE assessments offer variant conceptualizations based on omnibus or domain-linked measures (Bandura, 1989, 1997; Coleman & Kaarkaker, 1997). Warren et al. (2011) have reported that PSE has been primarily operationalized as a one-

dimensional global construct. However, Warren and colleagues have stressed those structural features of parenting domain support multi-dimensionality analysis as a more fitting approach. Yet, those who support the GSE approach maintain that specific self-efficacy beliefs converge to create a broader sense of self-efficacy, which, in turn, also can influence outcome expectations in new situations. For example, recovering alcoholics shown to have high GSE are more likely to be employed and less apt to have quit or been fired from jobs, as compared to recovering alcoholics with demonstrated low GSE (Sherer et al., 1982; as reported in Coleman & Kaaracker, 1997). As a whole, task-specific measures are thought to represent accurate identification of efficacy-related performance outcomes, and GSE measures correlate to overall self-evaluative capabilities (Coleman & Kaaracker, 1997).

Bandura (2006b) has acknowledged perceived self-efficacy is difficult to gauge through a single measurement tool, as this approach limits explanatory and predictive power to extrapolate specific areas of functioning. Further, he has underscored the importance of maintaining separation between generalized concepts of self-efficacy and specific situational demands and contexts. Thus, Bandura has recommended tailoring self-efficacy measures to specific domains in order to predict more accurately internal attributions for successes and failures, self-control capabilities, and self-perception of abilities (1995, 2006b).

The construction of rigorous self-efficacy scales relies on thorough conceptual analysis of the relevant domains of interest. Knowledge of activity domains provides an understanding of which aspects of personal self-efficacy should be measured. A comprehensive self-efficacy assessment should align with behavioral factors in which an individual can exercise some control (Bandura, 2006b). Moreover, behavior is more effectively predicted by people's own beliefs in

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their capabilities to succeed than by what they think they can do in one aspect of self-efficacy relevant to a domain of interest (Bandura, 2006b).

In the case of parental self-efficacy specifically, effective intervention in children's technology use requires application of positive self-perceptions of the parents' ability to effectuate positive long-term outcomes for children's future technology use, including: a) ability to identify IA in one's own children; b) conceptual understanding of family functioning conducive to IA prevention; and c) knowledge and perceived capability to access local and national resources whose main purposes are to address problematic technology use in youth.

**Role of Self-Efficacy in Development of Addiction.** Social Cognitive Theory is consistent with the bio-psychosocial interactive model of addiction, in that the problem manifests through patterns of behavior that vary among individuals in severity, patterns of generative influences, and deference to personal regulatory control (Bandura, 1997). While genetic influences increase susceptibility to the problem, addictive processes are believed also to operate indirectly through temperamental personality characteristics and environmental influences that predispose a young person toward compulsive repeated behaviors and the subsequent problems connected to these behaviors (Bandura, 1997).

Professional literature supports that a combination of social influences and perceived self-efficacy will hasten or deter early first use of alcohol, cigarettes, and/or marijuana (Ellickson & Hays, 1991; Marlatt, Baer, & Quigley, 1995). Early substance use is linked to the belief or perception that specific substances will enhance social functioning (Ellickson & Hays, 1991). Pro-use influences observed through social modeling, verbal persuasion, and low sense of efficacy to resist social pressures predicate the level of future youth substance involvement (Bandura, 1997; Marlatt et al., 1995). Poor interpersonal skills and low sense of efficacy to

regulate use in socially pressured situations are known predictors of problematic use in young people. Moreover, cognitive distortions generated by flawed self-beliefs about how alcohol and/or drug use or behavioral obsessions reduce stress and provide calming influence adds to the degree of compulsivity (Bandura, 1997).

Recent studies have highlighted that psychological factors, such as the transference of beliefs, attitudes, and perceptions from parent to child, are key to the development of alcohol problems (Campbell & Oei, 2010). *Cognitive theory of transference* suggests that information pertaining to alcohol and its resultant effects are formulated during childhood, and that parents play a key role in acquisition and outcome processes. Observing parental drinking practices contributes to a child's beliefs and expectations about alcohol's effects, which essentially predetermine future behavior involving his/her own use of alcohol. This transmitted information is then saved in the child's long-term memory and later activated when alcohol use is initiated (Campbell & Oei, 2010). These same constructs underlie development of problematic Internet use (Fikkers, Piotrowski, Weeda, Vossen, & Valkenburg, 2013; Lauricella et al., 2015).

**Parental Self-Efficacy and Mediation of Children's Screen Media Use.** The number of research studies examining parental self-efficacy in relationship to children's use of screen media, while limited, has nevertheless been well received by reviewers in the field. Jago et al. (2013) explored whether parental TV viewing, parental self-efficacy, or access to media equipment were associated with the amount of time pre-school-aged children in the UK spent viewing TV. These researchers found that each unit increase in parental self-efficacy to limit screen viewing was associated with a 77% reduction in the likelihood that children watched more than 2 hours of TV per day.

In a different study, Jago, Wood, Zahra, Thompson, and Sebire (2015) examined whether parenting styles were associated with the screen viewing of young children, and if any negative effects could be mediated by parental self-efficacy to limit exposure. Results of the study indicated that parental control was associated with lower levels of screen viewing among 5- to 6-year-old children, though this association was partially mediated by parental self-efficacy to limit screen time. Further, the authors recommended that development of strategies to increase parent self-efficacy to limit screen viewing could increase the possibility of positive results for both children and parents.

Another view emerged from a 2015 Belgian study designed to assess the association between specific parenting practices and related parental self-efficacy with children's physical activity and screen time. In this instance, the researchers (De Lepleere, De Bourdeaudhuij, Ardon, & Verloigne, 2015) found that very few identifiable parenting practices and related degrees of parental self-efficacy were associated with the variables under investigation. These authors attributed their unexpected findings to ceiling effect because the participants began the experiment with such high levels of parental self-efficacy that discerning significant improvements would be unlikely (De Lepleere et al., 2015).

While only limited empirical evidence supports the relationship between parental self-efficacy and confidence to influence positively children's screen use, what has been published provides enough evidence to establish the viability of this relationship in child-rearing practices (Raynor, 2013). First, past research has consistently demonstrated a relationship between parental self-efficacy and use of effective parenting strategies to reduce children's problematic behaviors (Ardelt & Eccles, 2001; Kunseler et. al, 2016; Yomtov, Plunkett, Sands, & Reid, 2015; Raynor, 2013). Further validation of this relationship was established in the study conducted by

Doumas et al. (2015) in which these researchers found that a parent-based intervention targeting parents of high-risk adolescents produced improvements in child management, family involvement, parent-child affective quality, communication about rules involving substance use, and parental self-efficacy at 10-weeks follow-up.

Additionally, studies have identified that parenting self-efficacy serves as an important buffer against parenting stress, which can interfere with parenting behavior and ultimately, affect parent-child interactions (Bloomfield & Kendall, 2012). Evidence suggests that parents who engage in substance abuse are also more likely to resort to problematic parenting practices, leaving children exposed to a range of adverse outcomes (Calhoun, Conner, Miller, & Messina, 2015). In a study conducted by Schwaninger et. al. (2017) comparing trauma histories in patients with gambling addiction (GA) and IA with patients with heroin dependence, researchers found a high prevalence of childhood trauma in patients with non-substance-related disorders (e.g., GA, IA) and patients with heroin dependence. Augmenting parents' self-efficacy to affect appropriately their children's choices, is an important strategy to reduce at-risk behavior (Doumas, King, Stallworth, Peterson, & Lundquist, 2015). Therefore, intervention and training which target self-efficacy beliefs of substance-abusing parents to intervene effectively in their children's online technology use has important implications for this study (Raynor, 2013).

### Parental Substance Abuse

According to the Substance Abuse and Mental Health Services Administration (SAMHSA) 2012 National Survey on Drug Abuse, an estimated 7.5 million children (10.5% of the population) 17 years old or younger live with at least one parent who abuses drugs or alcohol. Of these, 35.9% are 5 years old or younger. Additionally, 59% of adults enrolled in publicly funded substance abuse treatment are parents of children under the age of 18 (Hyde, 2013; Neger

& Prinz, 2015). Children living with parental substance abuse have greater chance of experiencing adverse outcomes, including: early conduct problems; lower academic achievement; emotional, physical and sexual abuse; and early substance abuse (Arria, Mericle, Meyers, & Winters, 2012; Arria et al., 2013; Raynor, 2013; Wiechelt & Okundaye, 2012). These children frequently encounter domestic violence, drug selling and manufacturing, prostitution, and other criminal behavior in their home environments (Child Welfare Information Gateway, 2014; Taylor, 2011).

Further, the risks these children experience are first evident in early life, with poor health and behavioral outcomes occurring among children as young as three years of age. Problems related to internalizing and externalizing symptoms have been known to appear around the age of two for children living with parental addiction (Burns et al., 2014). Symptoms of internalizing behaviors include negative mood or emotional states, and externalizing behaviors characterized by dis-inhibition and impulsivity (Burlew et al., 2012).

Poorer outcomes for children raised by substance abusing parent(s) are apparent across developmental stages. In infancy, prenatal substance exposure is exhibited in difficult temperament, including irritability, sleep and feeding difficulties, and unending crying or inability to be soothed. According to the Child Welfare Information Gateway ([CWIG]; 2014), approximately 10% of all infants born in the U.S. are prenatally exposed to illicit substances and, as a result, exhibit weak attachments to parent(s) or caregivers and fair worse in speech and language development as compared to non-exposed infants (Neger & Prenz, 2015). Fetal Spectrum Disorder, a primary cause of mental retardation, is a consequence of maternal alcohol abuse. Fetal Spectrum Disorder affects 40,000 US infants born each year, yet it can be prevented (Taylor, 2011).

By the time these children reach school age, they are more likely to exhibit aggressive behaviors, have fewer friends, experience more peer conflict, and demonstrate higher rates of hyperactivity and inattention. Adolescent children living with parental substance abuse exhibit higher levels of psychopathology, including depression and/or anxiety and early substance abuse (Neger & Prenz, 2015). Additionally, these effects are universal across various ethnic groups, in that similar problematic outcomes have been demonstrated in African American, Latino, and European American samples (Burns et al., 2012).

Among other serious concerns, youth growing up with parental substance abuse are considered to be at significant risk for child maltreatment and child welfare involvement, as they experience abuse or neglect more than any other groups of children in U.S. households (CWIG, 2014; Neger & Prenz, 2015). Further substance abuse is one of the five key factors that have predicted Child Protective Services (CPS) reports. Indeed, once a report has been proven, these children are likely to be placed in out-of-home care, and more often stay longer within that environment than any other children placed in similar living circumstances (CWIG, 2014). The National Survey of Child and Adolescent Well-Being (2014) has estimated that 60% of infants and 41% of older children placed out of the home came from families living with active alcohol or drug abuse (as cited in CWIG, 2014). Because these children are at higher risk, they are also greater service-utilizers, being overrepresented in welfare, mental health, and special education programs (Burns et al., 2012).

Different substances may produce differing effects on prenatal exposure, parenting, and safety, and the severity of these manifestations will depend on several factors, including illicit substances abused, and frequency and duration of the parent's use (Calhoun, Conner, Miller, & Messina, 2015). For example, parents who abuse alcohol are more likely to abuse physically

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their children, whereas parents who abuse substances, such as opiates, are found to be more

neglectful of their children (Taylor, 2011). In addition, substance-abusing parents often exhibit

high levels of co-occurring psychopathology and personality problems, such as post-traumatic

stress disorder (PTSD), depression, and anxiety (CWIG, 2014; Neger & Prenz, 2015; Niccols et

al., 2012; Taylor, 2011). Parents who are substance abusers also possess extensive histories of

unemployment, housing instability (CWIG, 2014), poor health, and dependence on public

assistance (Knight, Menard & Simmons, 2014).

 Maladaptive parenting approaches have been considered significant mediators for the

inter-generational transmission of Substance Use Disorder (SUD) risk and other psychiatric

symptoms (Arria et al., 2013; Bailey et al., 2013). Substance use in one generation has been

found to affect the next generation, both through influences on temperamental risk (e.g., poor

inhibitory control) and/or also through influences on parenting processes (e.g., harsh discipline;

Pears et al., 2007). Albeit, there must be multiple mechanisms operating in unison to create an

environment conducive to transferring patterns of behavior from one generation to the next

(Serbin & Karp, 2003). While not all children living within parental substance abuse family

setting experience issues of abuse, neglect, or other problematic outcomes (CWIG, 2014).

However, many do, with family lives that are chaotic, unpredictable, and deprived of basic needs

(e.g., nutrition, supervision, and nurturance; Arria et al., 2012; Bailey et al., 2006; Burlew et al.,

2012; Burns et al., 2012; Calhoun et al., 2015; CWIG, 2014; Neger & Prinz, 2015; Niccols et al.,

2012; Pears et al., 2007; Raynor, 2013; Taylor, 2011).

 The parenting practices that most often contribute to negative outcomes for these children

include: demanding or coercive behaviors, reduced supervision, and harsh forms of discipline

(Arria et al., 2012; Bailey et al., 2006; Neger & Prinz, 2015). Some of these parenting styles

include authoritarian parenting strategies and aggressive, rejecting, cold, and unskilled interactions (Arria et al., 2012; Bailey et al., 2013); poor family management skills, greater parent-child conflict, and poorer quality parent-child interactions (Arria et al., 2012; Kumpfer, 2014); low engagement, positivity, and synchrony (Pears et al., 2007); and inconsistent discipline (Arria et al., 2012), and/or expression of core values (Kumpfer, 2014).

According to the Children's Welfare Information Gateway parental substance use may affect a parent's ability to function effectively in the role of parent. Ineffective or inconsistent parenting can be due to the following:

1. Physical or mental impairments caused by alcohol or other drugs

2. Reduced capacity to respond to a child's cues and needs

3. Difficulty regulating emotions and controlling anger and impulsivity

4. Disruptions in healthy parent-child attachment

5. Spending limited funds on alcohol and drugs rather than on food, or other household needs

6. Spending time seeking out, manufacturing, or using alcohol or other drugs

7. Incarceration, which can result in inadequate or inappropriate supervision of children

8. Estrangement from family and other social supports (CWIG, 2014, p.3).

**Integrated Programs for Parents in Substance Abuse Treatment**

Niccols et al. (2012) defined "integrated programs" as substance abuse treatment programs that provide comprehensive services to address substance abuse, including a specific focus on maternal and child well being addressed through prenatal services, parenting programs, child-care, and/or child-centered services in a centralized setting. Studies have suggested that providing integrated programs for parents while they are in treatment for substance abuse can

potentially act as stabilizing factor for the entire family (Haggerty, Skinner, Fleming, Gainey & Catalano, 2008). As a result, these programs generate positive effects for children by building behavioral structures and promoting healthier interactions with substance using and non-substance-using family members (Dawe, Harnett, Staiger, & Dadds, 2000; Haggerty et al., 2008).

Having the opportunity to improve childrearing practices while a parent is in treatment can also serve as a powerful motivator for the parent's own recovery (Haggerty et al., 2008). Integrated treatment not only addresses parental substance abuse problems, but can also address other social, physical, and mental health needs of both the parent and child (Calhoun et al., 2015). Further, participating in parent training programs also benefits children because of improved parental self-esteem and the parent's enhanced sense of competency in the parental role (Camp & Finkelstein, 1997). In past research, parent training was shown to be the most effective component in an intervention designed to help children with Fetal Alcohol Syndrome (Camp & Finkelstein, 1997). In a late 1990s demonstration project structured to examine the effects of parent training toward improving the parenting skills and self-esteem of 170 pregnant and parenting women enrolled in an inpatient treatment program which included a parenting component, the majority of study participants were reported to accomplish dramatic improvements in self-esteem. Participants also experienced significant gains in parenting knowledge and positive attitude changes (Camp & Finkelstein, 1997).

Despite the findings discussed above, the results of other studies have asserted, or at least suggested, substantive disagreement. For example, three recently published literature reviews examining the effectiveness of interventions that targeted both parental substance-abuse and parenting between the years of 1990-2014, all cited varying concerns related to the scientific

rigor of the study designs investigated (Calhoun et al., 2015; Neger & Prinz, 2015; Niccols et al., 2012). In the case of Neger and Prinz (2015), of the 290 studies generated from their search of scientific databases, only 21 fit the specific criteria for their review of using quantitative outcome data in the final analysis. Calhoun et al. (2015) reported that 288 published studies were initially retrieved and coded as eligible for their review of randomized controlled trials, but only four met full criteria for inclusion in their review. Finally, Niccols and his/her colleagues (Niccols et al., 2012) completed a review of studies between 1990 and 2011 by examining effectiveness of integrated programs for mothers with substance abuse problems. Of the 31 studies that met the initial criteria, 27 were excluded because they were not conducted as randomized trials, leaving only 4 to be analyzed as part of the systematic review.

While findings of empirical research to date have not entirely supported dual treatment programs as 100% effective in improving parenting practices of parents in recovery from substance use disorders, preliminary reports have corroborated these programs' underlying viability as prevention strategies and demonstrating the importance of continued implementation in clinical environments. Further, findings from randomized controlled trials of programs that target substance-abusing parents have indicated that interventions focusing on both parenting practices and treatment of the disorder hold the most promise for improving family functioning, including the health and well-being of children living with family addiction in the U.S. (Calhoun et al., 2015).

**Parent Trainings**

Empirical literature has suggested that one of the most modifiable risk factors correlated to development of problem behaviors in children is the quality of parenting they receive (Arria et al., 2013; Arria et al., 2012; Bloomfield & Kendall, 2012; Doumas et al., 2015; Gainey,

Haggerty, Fleming, & Catalano, 2007; Enebrink et al., 2015; Kaminski, Valle, Filene, & Boyle, 2008; Kumpfer, 2014; Mejia, Calam, & Sanders, 2015; Neger & Prinz, 2015; Niccols et al., 2012; Sanders & Kirby, 2014; Shorey et al., 2013). Tully and Hunt (2016) have reported that in the last 30 years parenting interventions created from social and cognitive behavior theory are known to reduce early child behavior problems, and it appears that these changes can be maintained over time (Morawska, Haslam, Milne, & Sanders, 2011). Additionally, parent trainings are correlated to: improved youth mental health, reduced anti-social behaviors, increased help-seeking, and reduction in drug-using behaviors in youth (Gilbo, Knight, Lewis, Toumbourou, & Bertino, 2015).

The beneficial effects of parent trainings not only impact youth outcomes, but also change parent behaviors in positive directions as well, including reduction of dysfunctional parenting approaches, increased parental self-efficacy, and lower levels of parental stress (Morawska et al., 2011); also, demonstrated benefits by reduction in inter-parental conflict over child rearing practices (Dittman, Farruggia, Keown, & Sanders, 2016). Additionally, interventions that teach parenting skills and promote pro-social behavior in youth can be implemented in a variety of settings, including juvenile justice centers, schools and universities, churches, and other community settings where parents congregate (Gilbo et al., 2015).

However, while most parent training programs offer strong empirical evidence to support their efficacy, standard parenting interventions tend to be both cost- and time-intensive for both parents and providers of the services. Parent programs often require professional workforce trained in evidence-based approaches and, as a result, face difficulty with recruitment and also experience higher participant drop-out rates (Bayer, Hiscock, Ukoumunne, Scalzo, & Wake, 2009; Dittman et al., 2016; Gilbo et al., 2015; Kaminski et al., 2008; Koerting et al., 2013; Mejia

et al., 2015: Morawska et al., 2011; Tully & Hunt, 2016). Morawska et al. (2011) reported that approximately 14% of all parents actually participate in any form of parent education, and that even fewer are exposed to evidence-based interventions. Further, not all parents rearing children who exhibit problematic behaviors seek out standard parent training programs. In the end, research has identified several barriers that contribute to low parent participation, including both practical considerations and other factors specific to the individual parents. A discussion of the barriers is provided next.

First, traditional parent trainings require significant time commitment from parents who already feel overwhelmed and conflicted (Gilbo et al., 2015). For example, Morawska et al. (2011) reported that the requirement of attending an 8- to 24-week program created a substantial barrier for some parents by asking them to give up valuable time and financial resources to attend the trainings. Barriers such as these often appear for parents who already face additional challenges with organizing childcare, transportation, and other family priorities in order to participate (Tully & Hunt, 2016). Moreover, parents who are interested in practical information involving developmental concerns or problems specific to their children (e.g., tantrums, sleep problems, or need for age appropriate rules), find broad-based programs excessive and unnecessary (Dittman et al., 2016). Sanders, Prior, and Ralph (2009) reported that parents should be able to access parenting information to the degree of intensity and duration they actually need, which is not always the case with standard parenting interventions (Dittman et al., 2016; Jordans, Tol, Ndayisaba, & Komproe, 2013; Morawska et al., 2011).

Moreover, individual factors, such as belief that parents can manage family problems on their own, or that their children do not need help after all, may prevent parents from engaging in parent trainings. Also, socio-economic concerns, such as feeling socially isolated, economically

disadvantaged, or depressed are also often reported in literature as barriers for parent

participation (Morawska et al., 2011). Koerting et al. (2013) identified key psychological barriers

that present valid challenges for parents, adding to their reluctance to participate in any type of

parenting intervention. These barriers include: lack of confidence; concern about being judged;

stigma attached to needing help; fear of being viewed as a parental failure; and distrust of

professionals, especially those with different cultural or ethnic backgrounds.

**Brief Parent Interventions**

In direct response to the concerns mentioned above, researchers have begun to investigate

parenting interventions that require less time commitment, while also including priority

components of effective parenting programs (Tully & Hunt, 2016). These more "compact"

interventions have emerged from a recognition that increased involvement of parents who

typically do not engage in more intensive approaches requires flexible options that emphasize a

lower level of time commitment and also reduced intensity of the parent trainings themselves

(Tully & Hunt, 2016). Additionally, brief parenting interventions provide an opportunity to focus

on specific concerns, thus serving as important first steps toward commitment to longer-term

parent trainings (Gilbo et al., 2015).

Brief parenting interventions provide great value, in that they can serve as part of a

continuum in a stepped-care approach, with potential for some parents who would benefit from

higher levels of support to be referred into more intensive interventions (Tully and Hunt, 2016).

Brief parent trainings can be useful targeted approaches and function as motivational

interviewing (MI) techniques to engage parents in need of additional services, while also

ambivalent about pursuing these services (Gilbo et al., 2015; Koerting et al., 2013). However

short the duration, brief programs have the potential to increase parental self-efficacy to overcome family problems just by engaging parents (Gilbo et al., 2015).

Mejia et al. (2015) referred to this approach as: "Brief targeted support for parents based on the principle of minimal sufficiency. Minimal sufficiency denotes simplicity in designs and procedures as well as investment of the right amount of effort" (p. 709). Dittman et al. (2016) suggest that parents differ according to the strength of intervention required to enable a parent to independently manage a problem. Therefore, advocates of brief interventions emphasize the importance of selecting parenting approaches that are established to achieve meaningful clinical outcomes using the most cost-effective and time-efficient strategies possible (Sanders & Kirby, 2014). While no accepted definition exists for brief parenting intervention, for purposes of this study the definition includes a psycho-educational, one time only, 2-hour group session. Jordans et al. (2013) define psycho-education as "generally (including) the provision and review of information about the development of mental health problems and how to cope with such problems" (p.1852).

The efficacy and brevity of brief interventions offer opportunities to embed these approaches into existing parenting and family support services, helping improve accessibility of evidence-based parenting programs in the community. Brief parent training models help reduce time investment of parents, while still being effective at increasing parenting skills and reducing child problem behaviors. In addition, this discussion group format can be delivered across a number of settings, including community, educational, health care, or workplace environments, thus further increasing the likelihood that parents will receive the support they need. Also, making brief and effective parenting support easily accessible and highly visible in the community contributes to reducing underlying stigma often accompanying the need for parenting

support. Additionally, this approach to parenting support may eventually promote genuinely reduced rates of behavior problems and parenting difficulties at a larger population level (Dittman et al., 2016), while using fewer resources at the same time (Jordans et al., 2013).

During the past decade, several studies have compared brief parenting interventions to longer duration traditional parent training programs. Tully and Hunt (2016) completed a systematic review of brief parenting interventions for children at-risk of externalizing behaviors. Their review only identified 9 articles describing 8 studies evaluating brief parenting interventions that met their inclusion criteria. These suggest that brief interventions may be effective in reducing child externalizing behaviors and dysfunctional parenting for parents seeking help in addressing their young children's emerging problem behaviors across a range of settings and manifestations. The families participating in these studies experienced improvements on measures of child behavior, parenting, and parenting efficacy at post-assessment remained largely intact at follow-up.

In a qualitative study examining 16 parents' experiences with and subsequent reactions to a targeted 2-hour program entitled "Parenting Challenging Adolescents" which was developed specifically to help parents concerned about their adolescents in the identification of mental disorders. The overall findings of the study suggested that even after a single session the majority of parent participants reported positive changes (Gilbo et al., 2015). While specific changes in patterns of negative communication and self-reflection were significant for the parents, the authors highlight that the main value of the seminars was to identify parents of at-risk youth to recognize the benefits of more substantive professional help, and assist them in following up to receive additional services (Gilbo et al., 2015).

In a different study, researchers examined the feasibility and preliminary efficacy of brief parent-based preventative intervention to delay or even prevent the initiation of alcohol and drug use in young adolescents with emotional/behavioral disorders. Findings from this small, randomized clinical trial indicated that parents in both conditions examined (90 - 120-minute family check-up session and 60 - 90-minute psycho-education session), reported an increase in alcohol-related communication at 3 and 6 months' post-intervention, in addition to an increase in overall family communication (Spirito, Herandez, Cancilliere, Graves, & Graves, 2015).

In order to increase the likelihood that a 2-hour brief parent group intervention would achieve positive outcomes, Joachim, Sanders, and Turner (2010) incorporated into their intervention design components from an empirically supported parent-training model. These identified components included: discussion and peer support, video modeling, problem solving exercises, organized activities transferable to home environment, and strategic planning for participants' own high-risk situations. While Joachim et al. (2010) reported that their discussion group focused mainly on problems related to shopping with young children, examples from other settings were also integrated into the intervention to promote generalization to other situations such as visiting friends or traveling via public transportation. In addition, Joachim and colleagues added problem-solving exercises for other types of problematic behavioral scenarios that could arise.

These recently published clinical trials examining effectiveness of brief parenting interventions highlight several important findings. First, these approaches give parents the option of participating in interventions that involve varying degrees of duration and intensity, allowing parents the opportunity to determine what they need to promote self-sufficient management of their children's behavior problems. Second, brief interventions enable practitioners to provide

comparatively effective programs using less agency capital (Dittman et al., 2016; Morawska et al, 2011). Third, studies have shown that shorter programs can promote improvements to longer-term problems, and any significant changes that do occur can be maintained over time (Dittman et al., 2016). Finally, not all families are in need of more intensive interventions, even for children with moderate to high levels of behavior problems. Current professional literature has suggested that brief parenting interventions are challenging traditional notions of what is needed for sufficient, dose-related combinations in order for parents both to address independently and also resolve their children's problematic behaviors (Dittman et al., 2016).

**"Media Protect" Parent Training**

Although IA is just beginning to receive attention in the U.S. as a potential problem for youth, prevention programs addressing the concern are in early stages of development. One program that relates to this study is "Media Protect," which was developed by Bleckmann, Rehbein, Seidel, and Möβle (2014) as a method to combat a growing problem observed in Germany that involved children's unrestricted use of screen media. These researchers developed and implemented an elementary-school parent counseling program intended to reduce children's problematic and long-term addictive use of screen media. The program was pilot tested with 220 different families from one elementary school in the rural area of Lower Saxony during the 2012/2013 school years. The training was unique because it represented one of the first such programs to target parents and teachers, rather than just children directly. The program was intended to start at an earlier stage in children's lives to prevent development of future problems. Additionally, the program addressed three dimensions suggested in professional literature to decrease risk of IA, including: infusing support for real life activities; reducing availability of

screen media in the home environment; and teaching children to self-regulate screen use (Bleckmann et al., 2015).

In the pilot phase of the Media Protect implementation, 220 families attended a 45-minute face-to-face session that offered advice on media education, information on media effects, and hands-on technical support for installing protective software based on support needs of targeted age groups. Sixty percent of the parents who participated in the intervention gave the educational session high satisfaction ratings and rated the written materials as useful. Parents also reported moderate positive changes in media-related parenting styles five months after training. Overall, preliminary results of the implementation phase of Media Protect are encouraging, leading program developers to suggest that similar programs be adapted to different settings and then developed for long-term evaluation and implementation on an international level (Bleckmann et al., 2014). The study conducted as part of this research project met the first challenge proposed by the Media Protect developer's by creating a parent-training model that was implemented in a SUD treatment setting.

### Contribution to Counselor Education and Counseling Practices

Counselor education and counseling practices will benefit from this research study in several ways because, first, a predominant focus of the study addresses in depth the topic of IA, an emerging mental health problem that has become a significant concern in relevance to the counseling profession today (Carlisle et. al, 2016). In fact, IA is viewed as a looming mental health problem that is estimated to affect directly 8-10% of the U.S. population in a negative way (Jorgenson, Hsiao, & Yen, 2016), and indirectly family members and friends of those directly affected. Therefore, counselors of every specialty need to learn how to identify IA and understand prevention and treatment services that most effectively address IA's negative

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consequences (Carlisle et al., 2016). The literature presented throughout this chapter offers a comprehensive synthesis of the most current information available on the topic of IA. This information could benefit counseling educators in preparing curriculum content and developing practice guidelines for educating counselors-in-training to assess, treat, and even prevent IA in a variety of human service settings.

Another important contribution this study will make to counselor education programs is that it identifies and applies an innovative approach to delivering prevention services for parents identified as high risk and in greatest need of the educational intervention (Gilbo et al., 2014; Lim, Stormshak, & Dishion, 2005; Nock, Kazdin, & Kazdin, 2005). The brief training model requires less time commitment from participants than more traditional parent education programs and disseminates information to reflect reading and learning styles of the study population (Koerting et al., 2013). Counselor education programs would benefit from this study because it teaches not only important cutting-edge diagnostic and remedial skills, but also offers a method to deliver the remediation efficiently; thereby creating the ability to reach and motivate more clients to undertake this effective and time-efficient approach to a serious problem (Moro, Wahesh, Likis-Werle, & Smith, 2016),

Developing effective responses to the concerns addressed above emerges from the professional counselor's obligation to honor the social justice perspective residing at the heart of the counseling profession (Kennedy & Arthur, 2014). The most important duties of counselors are to promote clients' attainment of both physical and mental health and well-being. Counseling educators play a critical role in promoting social justice as an important element of counselor identity. Translating the commitment to social justice into professional practices involves moving from philosophical conceptualization to forming concrete plans of action. This study

serves as an example for educators to reference when teaching how to actualize the value of social justice into the realm of counseling practices.

And finally, this research study could serve as a teaching tool in educating counselor's-in- training how to develop, plan and implement a program model steeped in the principles underlying evidence-based practices (EBP). According to Morrow, Lee, Bartoli, and Gillen (2017), EBP model should be based on three components: client characteristics, the best available research and counselor expertise. The parent training used for this study was created after a thorough review of professional literature and designed with the specific characteristics of the intended study participants in mind. Further, the parent training model evolved from combined experiences of seasoned professionals working in the counseling field (author and dissertation chair) for over two decades. Plus, the study filled a gap identified in professional literature calling for effective prevention programming to thwart development of IA in children and adolescents. Based on the findings of this study, the 2-hour parent training offers tenable evidence of being effective at improving parents in recovery's self-efficacy to mediate their children's Internet technology use. In general, this research study could benefit the counseling profession for years to come.

**Chapter Summary**

This chapter provided background information on the status of children's use of Internet technology and addressed why some youth is more at risk to develop problems related to compulsive use. The chapter offered an overview of IA, and a justification for concern about potential effects on high-risk youth. Parenting influences were also discussed, pinpointing how different strategies for monitoring and mediating serve as important barriers to assist in preventing future problems. SCT was reviewed, serving as the theoretical lens through which the

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study is structured, including special focus on the importance of self-efficacious beliefs to perseverance and willingness to exert positive influence in any endeavor.

The influence that substance abuse has on child rearing practices was presented, providing evidence why parents' treatment for addiction should be made a priority in any effort to address problems impacting effective child rearing practices. Parent training research was advanced as one of the most important available interventions to prevent a range of problematic behaviors in children. A brief one-time intervention was offered as an alternative parent training approach gaining popularity among prevention practitioners seeking to offset problems related to recruitment and retention of participants typically found in longer-term parenting programs. "Media Protect" parent training was presented as a model already in existence and showing promise as an approach supporting parents in learning how to structure family technology use in order to reduce risk and increase balanced lifestyles inclusive of Internet technology. Finally, the chapter concludes with a discussion of how the study will benefit counselor education and counseling practices, along with a summary of the contents.

# CHAPTER 3: METHODS

## Introduction

This chapter describes the research methods used to conduct a dissertation study. The chapter begins with a review of the three research questions. The research design is discussed, including recruitment strategies and eligibility requirements for participant inclusion. The research design is presented, along with brief mention of a pilot project that served as the model for the current study. The procedures, data collection, and study implementation plan are reviewed, along with a detailed description of the demographic questionnaire and assessment instrument used to measure the dependent variables providing the focus of this study. An overview of the intervention setting, training components and data analysis plan are also provided. Ethical considerations and an explanation of limitations of the study are presented. The chapter concludes with a summary review.

## Research Question

This research study examined the influence of a training module designed to support parents in applying self-efficacy beliefs to influence their children's positive technology use. The following three research questions addressed the study's purpose:

1. Does the 2-hour training module increase study-participants' self-efficacy about identifying appropriate behavioral expectations for their children's use of Internet technology?

2. Does the 2-hour training module increase study-participants' self-efficacy about identifying IA in their children?

3. Does the 2-hour training module increase study-participants' self-efficacy about identifying local and national resources that address IA?

## Research Design

**Participants**

Study participants were recruited from a substance abuse treatment facility (hereafter referred to as the recovery center [RC]) located in the northwest region of the United States. The RC is a private not-for-profit organization that offers a continuum of substance use disorder treatment services, including: intensive or long-term residential treatment for pregnant and parenting women and their children, a detoxification center, intensive outpatient treatment, and both relapse awareness and continuing care outpatient psycho-education groups. In addition, the RC engages in collaborative efforts with a large university that conducts extensive research activities, and oversees case-management programs for mothers who abuse alcohol or drugs during pregnancy.

Aggregated demographic information on the RC's treatment population is presented in Appendix B and Appendix C. These data sets were compared to study participants' demographic information to examine any observed differences between groups (Flay et al., 2005; Shadish, Cook, & Campbell, 2002). Binomial analyses were conducted to determine if any of the differences were significant between the study participants and the RC treatment population. In order to participate in the study, each participant had to be over the age of 18 and a parent of or parenting a child between 0-18 years of age. In addition, participants had to be literate in the English language, and not have physical or cognitive limitations that would restrict them from participating in the 2-hour educational or alternative activity. Participants also had to be enrolled in one of the facility's residential or outpatient substance abuse treatment programs. Other eligibility criteria are listed in Table 3.

Table 3

*Participant Eligibility at Pre-Intervention Interview*

| Inclusion Criteria | Exclusion Criteria |
| --- | --- |
| Must be at least 18 years of age. | Not 18 years of age |
| Parent of/or parenting a child 0-18 years of age. | Not a parent or parenting child 0-18 years of age. |
| Able to provide address/phone number and/or alternative means of contact. | Not able to provide contact information at start of study. |
| Literate in the English language. | Not literate in English language |
| Able to participate in 2-hour education seminar. | Not able to participate in 2-hour education seminar |
| Enrolled in one of RC's outpatient or residential treatment programs. | Not enrolled in any of the RC's outpatient or residential treatment programs |
| Willing to participate in seminar without being under influence of problematic substances. | Had cognitive impairment preventing active participation in the research study |

**Study Sample and Sampling Design**

This study utilized a quasi-experimental research design involving non-equivalent control group (NECG; Shadish et al., 2002) of participants living in the state of Washington. The study sample was comprised of parent volunteers who had children and/or were parenting a child 0-18 years of age and were enrolled in one of RC's outpatient or residential treatment programs. The NECG research design was considered an effective way to examine causal relationships in situations where it would have been difficult to implement a randomized control study in a natural setting, such as the treatment environment where this study was conducted (Babbie, 2013; Campbell & Stanley, 1963; Heppner, Wampold, & Kivlighan, 2008). The design was especially useful in this instance because the population of interest was considered a high-risk and highly stigmatized group that is difficult to access (Burns et al., 2012). Attempting to recruit enough parents of interest (e.g., parents with history of substance abuse) to implement an experimental design would have been problematic. Specifically, the population comprising this study was already established in clinical groups (cohorts) and had similar characteristics and

backgrounds. An analysis of the study participant's demographic data will be provided in chapters 4 and 5.

For this study, the outpatient study participants served as the intervention group and residential participants provided the control group. Each study group contained an equal number of participants recruited from both outpatient treatment (n = 16) and the women's residential program (n = 16). The control group followed the same experimental procedures as the intervention group, with the exception they were asked to participate in a 2-hour board game rather than the 2-hour parent education seminar. For purposes here, the intervention group shall be referred to as the training group and the control group will be referred to as the game group.

## Procedures

### Parenting Training Module Prototype

In fall of 2014, the author developed and implemented at a publicly funded alternative school a 2-hour educational module for parents and school staff. This module served as the prototype for the training that was implemented as part of this research study. Ten participants ($n$ =10) in the training prototype completed the pre-training multiple choice Internet Mediation Awareness Questionnaire (See Appendix E) and attended the educational training (See Appendix D for training announcement). However, nine ($n = 9$) of these participants completed the post-training questionnaire. Also, seven of the original ten participants completed the "Internet Mediation Seminar Evaluation" form (See Appendix J). The surveys that were completed and returned rated the training module as excellent overall, and the majority agreed that the information was useful and met with their expectations.

A one-way repeated measures analysis of variance (ANOVA RM) conducted on pre-tests and post-tests demonstrates significant improvement at the $p < .001$ levels on the Internet

Mediation Awareness Questionnaire scores, with average scores improving from 15.33 to 19.11. In addition, the partial eta squared ($\eta_p^2$) was .80, which indicates that the training influenced over 80% change in variance scores from pre-test to post-test. In general, the training helped improve participants' scores from pre-test to post-test and resulted in a large effect size of .80. In addition, the overall success of the parent Internet mediation training suggests the information is timely, increasingly in demand, and considered significant by a variety of parent audiences.

**Current Study**

The current study was implemented over four phases. Phase I involved obtaining approval from East Carolina University and Medical Center Institutional Review Board (IRB) to initiate the study. After receiving IRB approval (See Appendix A), the author, who shall be referred to as the Principle Investigator (PI) met with RC program administrators to work out logistics associated with implementing the study. The PI then attended RC's weekly program staff meetings to announce the training and answer questions related to client involvement. Next, the PI attended outpatient and residential treatment groups to announce the research study to potential participants. A letter of invitation (See Appendix G) to participate in the research project was distributed and briefly reviewed as part of the announcement.

Upon hearing about the study, any individual who expressed interest in participating were instructed to sign two copies of the informed consent. One signed copy was to be returned to the PI and the other was for the individual to keep. All those who signed the consent were informed the PI would contact them at later date to determine their eligibility and would provide more details about the parent training or alternative activity at that time. The forms were collected and securely stored in a locked room until participant's inclusion/exclusion status was determined, after which excluded participant forms were shredded.

In Phase II, the PI contacted the study participants and provided them with the scheduled dates and start times of the interventions. The PI prepared the experimental materials in individual packets and assigned a number to each. The packet was distributed to every study participant at the start of his or her respective intervention (parent training or game group activity). Onsite childcare was offered for any participant in need and refreshments were provided during both training and game interventions. The written study announcement (See Appendix F), letter of invitation to participate (Appendix G), and copy of the informed consent can be found in Appendix H.

**Data Collection**

Phase III involved implementing two parent trainings (n = 16) with outpatient study participants and one alternative control group activity (n = 16) with residential clients. At the start of both control and experiential group procedures, participants were asked to complete the demographic questionnaire (See Appendix I) and the Parental Self Appraisal Inventory (PSAI; See Appendix K), which served as a measure of the dependent variables (change in parental self-efficacy from pre- to post-intervention). After the parent training and alternative activity ended, each participant was asked to complete the post-PSAI questionnaire (See Appendix K). Training group participants were also asked to complete a training evaluation form (See Appendix J).

To address ethical considerations, both the demographic and parental self-efficacy questionnaires were assigned numbers to identify individual participant's forms. At the end of each experimental procedure, both training and game group participants were instructed to place all of their completed forms back into the provided 8" by 11" clasped envelope with their assigned number written on the outside and give the envelope to the research assistant before leaving the meeting location. The research assistant reviewed each packet to ensure all forms

were completed. Five-dollar Starbuck's gift cards and $5.00 travel reimbursement were given to the participants as they departed. Training group participants were also offered a list of resources addressing appropriate family technology use for future reference (See Table 1 and Table 2). At the completion of the game group activity, participants were informed of the post-study option to attend the parent training at a future date. Five of the 16 game group participants expressed interest in being contacted when the date for the training was scheduled. All collected information is currently stored in a locked file cabinet and will be maintained by the PI for three years per IRB requirements.

After all forms were collected, the data was prepared and analyzed using IBM SPSS v23 (2015). Preliminary results were collated and are reviewed in chapters 4 and 5 of this manuscript. The manuscript was submitted for approval to the dissertation chair and members of the dissertation committee. Phase IV will be completed after the presentation and defense of the research study to faculty members of the East Carolina University Department of Addictions and Rehabilitation Studies. Table 4 below provides an overview of different phases of the research study.

<div align="center">

**Instrumentation**

</div>

**Demographic Profile**

The demographic questionnaire (See Appendix I) used in this study asked participants about personal background information, including: gender, age, race, educational status, occupational status, level of income, drug of choice, age of first use, recovery status, and questions related to the presence of any disabilities. In addition, participants are asked to estimate how many hours they spend per day involved with some type of online technology, as well as their preferences for online activities.

Table 4

*Research Study Implementation Plan*

| Phase I | Phase II | Phase III | Phase IV |
|---------|----------|-----------|----------|
| Complete East Carolina University's IRB process and obtained approval to initiate the study. | Organized group assignment based on treatment cohort affiliation (i.e. outpatient or residential). | Implemented the 2-hour parent education seminars (n= 16). Completed control group alternative activity (n=16). | Write-up results and finishes Chapters 4 and 5. |
| Announced training and obtain completed forms from interested participants. | Arranged locations, dates, and times for 2-hour intervention and control group alternative activity. | Collect pre/post questionnaires from both study groups. Distribute gift cards upon submission of completed demographic form, Pre/Post PSAI and training evaluations. | Make corrections and submit to Dr. Leierer for final approval. |
| Contacted potential candidates and decided involvement in the study based on inclusion criteria. | Arranged childcare, food and refreshments for participants during intervention. Also, purchased coffee gift cards and travel reimbursement for all study participants. | Prepare data for statistical analysis. Run statistical analysis. | Submit Chapters 4 and 5 to Dissertation Committee for review and comments. |
| Informed participants about study's logistics and obtained copy of signed informed consent. | Prepared all materials used for educational seminars and game group activity. | Conduct educational seminar for control group participants. | Defend research study and receive terminal degree. |
| Complete power analysis to determine sample size needed for .05 $\alpha$ significance levels. | Notified participants of assigned training/game dates and times. | Prepare written results with analyzed outcome information and possible implications of any findings. | Graduate from East Carolina University. |

## Parental Self-Appraisal Inventory

**Inventory Development.** The Parental Self-Appraisal Inventory (PSAI) is a self-report

assessment instrument developed specifically to measure the capacity of parental self-efficacy to

intervene effectively in children's use of Internet technology (See Appendix K). The PSAI

evolved from a conceptual analysis of scientific literature conducted by the PI while seeking to

identify the most effective parenting prevention and intervention approaches to counter children's

risk of developing Internet addiction (Gentile et al., 2014; Griffiths, 2009; Kalmus et al., 2015;

Lim, 2016). Using Bandura's (1997, 2006b) work as a guide, the PSAI provides a self-efficacy

scale addressing specific activities pertinent to this sphere of parent influence in order to assess the multifaceted ways in which efficacy beliefs operate within the collection of parenting tasks (Bandura, 2006b).

According to Bandura (1997, 2006b), comprehensive self-efficacy scales should be constructed from a conceptual analysis of the relevant domain of functioning and should link to behavioral factors over which an individual can exercise some control. Further, Bandura suggested a scale should measure self-efficacy using gradations of challenges or impediments to reflect the levels of difficulty individuals believe they must overcome in order to be successful. Self-efficacy beliefs are concerned with perceived capabilities; therefore, items should be written to reflect a "can do" rather "will do" judgment of capability to perform in given situations. Individuals who score high on perceived self-efficacy scales should also differ in distinct ways from those who score low, which supports construct validity of the measure.

After the response items were created, a readability assessment was conducted using Microsoft Word program to examine items included in the self-efficacy inventory. According to Calderón, Morales, and Lu (2006), the average American has a seventh-to-eighth-grade reading ability. However, vulnerable populations (e.g., those living in poverty, the homeless, persons older than 65 years) are reported to be over-represented among those possessing marginal or very limited reading skills. The Flesch-Kincaid and Flesch Reading Ease are formulas most commonly used to assess survey readability. The PSAI was assessed to determine if the readability scores were appropriate for the study population based on demographic data of the overall treatment population reported in Table A1 and Table A2. The evaluation revealed that the Flesch-Kincaid score (literacy difficulty level of the questionnaire) was 8.9, indicating that study participants would need an eighth-grade reading level to understand the PSAI. The Flesch

Reading Ease score for the PSAI was 63.1, suggesting that the text was easier to read comparatively (minimum score = 0, maximum score = 100, higher scores indicates text is easier to read; Suleiman, Lin, & Constantine, 2016).

The PSAI was field tested in two waves. Initially, the assessment was administered to volunteer participants representing the study sample (n = 2) and to individuals from the general population (n = 3). In scoring the results, no significant difference emerged between the two groups. To address this issue, certain items determined to be too ambiguous were either rewritten or eliminated, and several other items were changed to reflect more challenging situations involving the domain of interest. The second wave of field-testing was completed with representatives of the RC outpatient population (n = 4) and one expert who agreed to evaluate the inventory. The expert is a state university research assistant who has experience working with the study population and has participated in the development of questionnaires for other research projects. After completing the PSAI, the volunteers were asked to provide feedback. Each participant, including the research assistant, responded to a set of questions specific to the PSAI format and usability (Flay et al., 2005).

Overall, the responses from the second set of volunteers were positive for the PSAI length, readability and rating scale clarity. These volunteers' feedback and recommendations prompted development of important adjustments to the instrument. For example, some questions were reworded to reflect better the respondent's reading abilities. Additionally, some questions were modified to clarify meaning. All volunteer participants from both phases of the PSAI development were offered a $5 coffee gift card to show appreciation for their time.

**Revised PSAI.** The final version of the PSAI includes three sub-scales, each containing 10 questions correlated to one of the three research questions. Each of the 30 items is rated on a

scale of 1 (Not at all) to 10 (A great deal). High scores for each of the subscales range between 90-100, and low scores between 10-20. The following represents an overview of the three different subscales of the PSAI and example questions correlated to each area:

1. Parents' belief in their ability to implement parenting strategies shown to offset risk of Internet Addiction (IA) development (Questions 1 through 10). Example: "How confident are you that you can initiate a conversation with your child about what he/she like to do online?"

2. Parents' belief in their ability to identify IA problematic symptoms in their children (Questions 11 to 20). Example: "How much can you do to keep from giving in to your child's demands to have access to screen technology devices when you are busy doing other things?"

3. Parent's understanding of how to access local and national resources focused on prevention and treatment of the Internet addiction problems in youth (Questions 21 to 30). Example: How much confidence do you have that you can improve your knowledge about the different types of online technology that your children are using?

In order to determine the reliability of the PSAI for this study, Cronbach's alpha reliability analysis (Leech, Barrett, & Morgan, 2008) was conducted on both the control and intervention group to determine the internal consistency and stability of the PSAI. The results are reported next.

***Reliability of the PSAI.*** The PSAI is an inventory intended to measure the self-efficacy of parents with regard to their children's use of Internet technology. The PSAI is a thirty-item inventory with three scales. The internal consistency of the PSAI subscales was evaluated using the Cronbach's alpha ($\alpha$) statistic. Although there were several levels of internal consistency,

those included in this study were acceptable ($0.70 > \alpha < 0.80$), good ($0.80 > \alpha < 0.90$) and excellent ($0.90 > \alpha < 1.0$). On pre-test Cronbach's $\alpha$ were acceptable to excellent: Strategies = .74, Identification = .86, and Resources = .93. On the post-test, Cronbach's $\alpha$ ranged from good to excellent: Strategies = .83, Identification = .89, and Resources = .90. Table 5 outlines Cronbach's $\alpha$ results.

Table 5
*Cronbach's Alpha for Parental Self-Appraisal Inventory Scales for Current Study*

|  | Pre-Test Cronbach's $\alpha$ | Post-Test Cronbach's $\alpha$ |
|---|---|---|
| Strategies | .74 | .83 |
| Identification | .86 | .89 |
| Resources | .93 | .90 |

**Intervention**

**Intervention Site**

The training and game group interventions were conducted at the RC's outpatient and residential locations, which provided ample parking and met International Building Code requirements for barrier-free accessibility (Washington State Administrative Code for Barrier-Free Accessibility, 2016). The group rooms were approximately 1024 square feet of floor space and comfortably accommodated all of study participants. The room where the parent trainings were held had a screen for viewing PowerPoint Slides and a Miroir HD Projector ®. Chairs were arranged in a circle, an arrangement similar to the treatment center's psycho-educational group format. Study participants were offered refreshments during the intervention and childcare was provided for any parent in need of this service.

**Training Components**

The PowerPoint slides shown in the parent-training seminar are included in Appendix F. According to Coleman & Kaaracker (1997), parent trainings known to increase parental self-efficacy (PSE) incorporate didactic instruction, role-playing exercises, and practicing of skills embedded into a structured format. Merged with training strategies known to increase PSE, the 2-hour educational seminar incorporated specific content area suggested in literature important to parental mediation of children's technology use. The didactic training included PowerPoint presentation linked to five training components. The five components and accompanying PowerPoint slide numbers (See Appendix L) for each are as follows:

1. Discuss the role technology plays in young people's lives. Seminar highlighted key findings from recent Pew Research Center's study on "Teens, Social Media and Technology Overview 2015," and "Common Sense Census: Media Use of 8-18 year olds in U.S." (2015). In addition, positive and negative aspects of newer technologies' influence on children/adolescents were reviewed. PowerPoint slides 1 to 18 are related to this component.

2. Review empirical research findings on Internet Addiction. This section included: Discussion of DSM 5 controversy surrounding Internet Addiction, diagnostic criteria, comorbid conditions, psychosocial risk factors, and prevalent socio-demographic variables. PowerPoint slides 19 to 30 pertain to this component.

3. Provided opportunity for parent participants to discuss challenging situations related to intervening in their children's/adolescents' technology use. For example, taking cell phone away, or initiating a conversation about proper disclosure of personal information on Facebook (PowerPoint slides 31to 38).

4. Showed 5-minute video recording of actors portraying a mother and 9-year old son modeling positive interaction between a parent and child discussing rules about family Internet technology use (See Appendix M for written description of video recording: Effective Parental Mediation of Youth Online Technology). PowerPoint slide 39 corresponds to video recording.

5. Reviewed local and national prevention and treatment programs addressing youth problematic technology use, including, online sites that offer ratings of software, video games, and apps. Additionally, seminar highlighted current residential programs in the U.S. that are known to treat Internet addiction. PowerPoint slides 40 to 45 are linked to this training objective.

## Data Analysis

All collected data was transformed, coded, and analyzed using IBM SPSS v23 (2015) for descriptive and inferential analysis. Binominal tests were used to compare the study sample's observed distribution to the expected distribution of the population sample reported earlier (See Table B in Appendix B; Table C in Appendix C; Table 11 in Chapter 5). In order to examine assumptions that the data followed a multivariate normal distribution, Kolmogorov-Smirnov test was used to compare groups (Field, 2009; Ghasemi & Zahediasl, 2012). Levene's Test of Equality of Error Variance was used to test the assumption of the homogeneity of variance with alpha set at $p < .05$.

To address research questions a doubly multivariate analysis was undertaken. The most important point of the analysis concerned whether or not there were any changes in scores on the PSAI over time (pre-test, post-test) for the two different groups (intervention, control). Overall, this basically determined the effectiveness of the intervention (parent training). Partial eta-

squared values ($\eta_p^2$) were also calculated as a measure of effect size, with $p \leq 0.05$ considered statistically significant. The results of the data analyses are reported in Chapter 4 and reviewed again in Chapter 5.

## Ethical Considerations

The study being reviewed fully adhered to the Code of Federal Regulations Public Law 93-34, established to protect human participants involved in behavioral research (Heppner, Wampold, & Kivilighan, 2008). An application was made to East Carolina University Institutional Review Board (IRB) to conduct the study. The IRB was approved on May 8, 2017, (See Appendix A) which certifies the study complied with all regulations and policies set forth by the Department of Health and Human Services regarding the health, welfare, safety, rights, and privileges of human participants involved in behavioral research. In line with the IRB policies and regulations, several protocols were addressed. Study participants were provided a written description of the study's purpose, along with details related to how their confidential information would be maintained throughout the research process. The issue of voluntary participation was outlined both in writing and verbally, emphasizing that participants had the right to withdraw from the study at any time, without risk to their status in substance abuse treatment or their being penalized in any other way.

All study participants will receive a written debriefing form, sent to them after the study is completed. This debriefing form will highlight the study's results and report on any conclusions drawn from the research. Further, the control group will be given the opportunity to participate in an educational seminar similar to what the intervention group received.

**Limitations**

Although significant efforts were made to safeguard against threats to the results of the study's findings, there are limitations that should be considered. The first involves the possible unreliability of the PSAI to measure true changes from pretest to posttest within and between subjects (Shadish et al., 2002). Cook and Campbell (1979) refer to this potentiality as a threat to statistical conclusion validity. Measures that are unreliable run the risk of diminishing bivariate relationships, which can increase Type I and Type II errors (Shadish et al., 2002). The types of countermeasures recommended to offset this threat include increasing the number of test items and improving the quality of those that are used to reduce the amount of error variance inherent to the measure (Bandura, 2006b). In the case of the PSAI, the initial version of the measure contained 25 items, but was later increased to 30 items. Additionally, some of the items in the original were changed to reflect more difficult situations a parent might encounter when trying to intercede with a child's Internet technology use. These changes seemed to improve the reliability of the measure, as evidenced by Cronbach's $\alpha$ results shown in Table 5.

One of the most viable threats to the validity of this study was the possibility the respondents were significantly different on key factors important to the dependent variables outside of the intervention, which may have influenced the results. The best strategy to control for this threat was to recruit participants that had similar characteristics closely matched on factors pertinent to the study (Cook & Campbell, 1979). By comparing demographic characteristics of the study participants with the RC treatment population's archival data and conducting over 57 chi-square tests examining differences between study groups on major demographic factors, the PI and Dissertation Chair were satisfied the sample population came

from a normal distribution and met the assumptions of statistical independence of observations (Cook & Campbell, 1979; Shadish et al., 2002).

## Chapter Summary

The purpose of this chapter is to discuss the methods section for this dissertation study. Chapter Three includes a description of participant recruitment procedures, an overview of the study research design, review of study procedures, data collection methods, study implementation plan and a description of the setting where the study was carried out. A review of contingency planning, statistical analysis of collected data, ethical considerations, and possible limitations of any of the findings were also reported. Summary of contents completed the chapter discussion.

# CHAPTER 4: RESULTS

## Introduction

The chapter commences with a review of study participants' response rates and demographic information. A discussion of descriptive statistics is followed by a comparison of training group and game group characteristics. An overview of the analysis examines the three research questions supporting the study's principal focus. The chapter concludes with a summary of the study results.

## Response Rates

The sample consisted of 32 adults, ages 19-48, who were enrolled in RC's treatment programs, including either one of two different outpatient programs or one residential treatment program. Fifty-five individuals initially agreed to participate in the study, and 32 (58%) of the 55 completed all phases of the experiment. There were 16 identified females in the residential program. Likewise, in the outpatient program -13 (81.25%) participants were female and 3 (18.75%) were male.

## Sample Demographics

Participants' ages ranged from 19-48 years. Each participant had been diagnosed with a substance use disorder. The outpatient participants received the intervention, and the 16 female residential participants served as the control group. The purpose of splitting the study sample by treatment type was to control for cross-contamination among participants. Moreover, the treatment and control groups were compared against 57 separate characteristics.

The overall study sample was comprised of 29 females (90.6%) and 3 males (9.4%). The age ranges were between 19 to 48 years ($M = 32.65$, $SD = 6.86$). The intervention group was made up of 13 females (81%) and 3 males (19%) with an average age of 35.5 ($SD = 5.98$). The

control group included 16 females (100%) with an average age of 29.6 ($SD = 6.59$). A compilation of study participant's general demographic data is included in Table 6.

Because the study focused on training parents to support their children's Internet use, this chapter begins by examining the information about parenting. The 32 participants in the sample reported that they were parents to a combined total of 67 children. The number of children per parent varied and included: one child ($n = 7$, 21.9%), two children ($n = 15$, 46.9%), three children ($n = 8$, 25%), and eight children ($n = 1$, 3.1%). One participant did not report a number of children ($n = 1$, 3.1%). Typically, participants had two children, ($M = 2.28$, $Mdn = 2.00$, $SD = 1.28$). The majority of reported children ($n = 66$, 94.2%) were between 0-18 years of age ($M = 7.14$, $Mdn = 6.00$, $SD = 6.24$). The number of participants living with their children also varied, as 14 participants reported that they were not living with their children (45.2%), another 14 (54.2%) reported living with one child, and three participants (9.4%) reported living with two children.

To explore possible differences between the treatment and control group specific to the topic of children, two independent *t-tests* were conducted. The assumption of homogeneity of variances was tested using Levene's *F* test and found tenable for both the number of children, $p = .105$ and number of children living with a parent participant at the time of the training, $p =. 314$. The PI and Dissertation Chair found that difference between the intervention and control groups on number of children per parent $t(29) = -.38$, $p = ns$ was not significant. However, significantly fewer children lived with parents in the treatment group ($M = .38$, $SD = .62$), as compared to the control group ($M = .93$, $SD = .59$), $t(29) = -2.56$, $p = .016$. One contributing factor to these findings may emerge from the control group consisting of women participating in a residential program that allowed children to live with a parent enrolled in treatment.

Table 6

*Participants' Demographic Characteristics by Treatment Group*

| Characteristics | Full Sample $n$=32 (%) | Control/Game Group $n$=16 (%) | Treatment Group $n$=16 (%) |
|---|---|---|---|
| Age | 32.7 (*SD*=6.86) | 29.6 (*SD*=5.98) | 35.5 (*SD*=5.98) |
| Race | | | |
| White | 26 (81.3) | 12 (75) | 14 (87.5) |
| Native American | 3 (9.4) | 2 (12.5) | 1 (6.3) |
| African American | 1 (3.1) | 0 | 1 (6.3) |
| Asian American | 1 (3.1) | 1 (6.3) | 0 |
| Other | 1 (3.1) | 1 (6.3) | 0 |
| Gender | | | |
| Female | 29 (90.6) | 100 | 13 (81.3) |
| Male | 3 (9.4) | 0 | 3 (18.8) |
| Disability Status | | | |
| Multiple Disability | 5 (16) | 2 (13) | 3 (19) |
| Yes | 16 (500 | 5 (31.3) | 12 (75) |
| No | 16 (50) | 11(68.8) | 4 (25) |
| Type of Disability | | | |
| Psychological | 14 (44) | 4 (25) | 10 (62.5) |
| ADHD | 4 (13) | 2 (12.5) | 2 (12.5) |
| Mobility | 1 (3.1) | 0 | 1 6.3) |
| Sensory | 4 (13) | 1 (6.3) | 3 (18.8) |
| Learning | 2 (6.3) | 0 | 2 (12.5) |
| Marital Status | | | |
| Single | 25 (78) | 12 (75) | 13 (81.3) |
| Married | 3 (9.4) | 2 (12.5) | 1 (6.3) |
| Divorced | 4 (12.5) | 2 (12.5) | 2 (12.5) |

*Note. * p < .05, ** p < .01, *** p < .001. Percentages* are shown in parentheses next to number.

Of the full study sample, 81.3% reported their ethnicity to be white, and 78% indicated they were single at the time the study took place. Five chi-square tests were conducted to examine demographic differences between the treatment and control groups, and no significant differences emerged from the results. Table 7 contains study participants' socio-demographic information, including: educational attainment, employment status, monthly income, and health insurance coverage.

Table 7

*Socio-Demographic Characteristics by Treatment Group*

| | Full Sample $n$=32 (%) | Control/ Game Group $n$=16 (%) | Treatment Group $n$=16 (%) |
|---|---|---|---|
| Educational Attainment | | | |
| Some High School | 10 (31) | 8 (50) | 2 (12.5) |
| High School | 11 (34.45) | 3 (18.8) | 8 (50) |
| Vocational-Technical School | 3 (9.4) | 1 (6.3) | 2 (12.5) |
| Some College | 7 (21.9) | 3 (18.8) | 4 (25) |
| College | 1 (3.1) | 1 (6.3) | 0 |
| Employment Status | | | |
| Not Employed | 24 (75) | 12 (75) | 12 (75) |
| Looking for Work | 5 (15.6) | 4 (25) | 1 (6.3) |
| Part-Time | 2 (6.3) | 0 | 2 (12.5) |
| Full-Time | 1 (3.1) | 0 | 1 (6.3) |
| Monthly Income ** | | | |
| $0-$500 | 24 (75) | 16 (100) | 8 (50) |
| $501-$1000 | 5 (15.6) | 0 | 5 (31.3) |
| $1001-$1500 | 3 (9.4) | 0 | 3 (18.8) |
| Health Insurance | | | |
| Washington State Medical Assistance | 10 (31.3) | 5 (31.3) | 5 (31.3) |
| Temporary Aide to Needy Families (TANF) | 16 (50) | 11 (68.8) | 5 (31.30 |
| SSI | 1 (3.1) | 1 (6.3) | 0 |
| Medicare | 5 (15.6) | 2 (12.5) | 3 (18.8) |
| Other Types of Medicaid | 10 (31.3) | 4 (25) | 6 (37.5) |

*Note. \* p < .05, \*\* p < .01, \*\*\* p < .001. Percentages* are shown in parentheses next to number.

A majority of study participants reported being unemployed at the time of the study and receiving various public funds, placing their earnings at 50% below the U.S. Government's 2017 poverty threshold (Annual Update of the HHS Poverty Guidelines, 2017). Four chi-square tests were conducted to examine the relationships between the treatment and control groups on socio-demographic variables. The only significant difference between groups occurred in the monthly income data, $\chi^2$ (2, $N = 32$) = 10.67, $p = .005$. That is, 16 (100%) of the participants in the control group reported earning $500 or less per month. By contrast, the intervention group

reported three levels of monthly income: 8 (50%) reported earning $0.00-500.00, 5 (31.3%) reported earning $501-$1000, and 3 (18.8%) reported earning $1001-$1500.

Table 8 contains study participants reported psychosocial characteristics, including: use of mental health services at the time of the study, reported substance-use preferences, age of first use, and legal history. To examine the relationship between the treatment and control groups on the psychosocial variables, 28 additional chi-square tests were conducted. The only significant difference between groups occurred on the psychosocial characteristics of alcohol as drug of choice, $\chi^2$ (1, $N = 32$) = 10.67, $p$ = .001. That is, eight participants in the intervention group reported alcohol as their drug of choice, while no individual in the control group listed alcohol as his/her drug of choice.

Table 8
*Psychosocial Characteristics by Treatment Group*

|  | Full Sample $n$=32 (%) | Control/Game Group $n$=16 (%) | Treatment Group $n$=16 (%) |
|---|---|---|---|
| Reported Receiving MH Services | 25 (78.1) | 13 (81.35) | 12 (75) |
| Drug of Choice: |  |  |  |
|     Methamphetamines | 21 (65.6) | 12 (75) | 9 (56.3) |
|     Heroin/Methamphetamines | 7 (21.9) | 5(31.3) | 2 12.5) |
|     Heroin | 11 (34.4) | 9 (56.3) | 2 (12.5) |
|     Alcohol | 8 (25) | 0 | 8 (50) ** |
|     Alcohol/Cannabis | 1 (3.1) | 0 | 1 (6.3) |
|     Methamphetamines/Cannabis | 2 (6.3) | 1 (6.3) | 1 (6.3) |
|     Cannabis | 6 (18.8) | 3(18.8) | 3 (18.8) |
|     Alcohol/Methamphetamines | 2 (6.3) | 0 | 2 (12.5) |
|     Alcohol/Methamphetamines/Cannabis | 1 (3.1) | 1 (6.3) | 0 |
|     Heroin/Methamphetamines/Cannabis | 1 (3.1) | 1 (6.3) | 0 |
|     Other | 1 (3.1) | 0 | 1 (6.3) |
| Age of first use: |  |  |  |
|     13 years or less | 11 (34) | 5 (31.35) | 6 (37.5) |
|     14-18 years | 17 (53.1) | 7 (43.8) | 10 (62.5) |
|     19-30 years | 4 (12.1) | 4 (25) | 0 |
| Legal/Crime: |  |  |  |
|     Committed a Crime | 24 (75) | 10 (62.5) | 14 (87.5) |
|     Theft | 11 (34.4) | 6 (37.5) | 5 (31.3) |
|     Drug Possession | 9 (28.1) | 6 (37.5) | 3 (18.8) |
|     DUI | 8 (25) | 2 12.5) | 6 (37.5) |
|     Domestic Violence | 7 (21.9) | 4 (25) | 3 (18.8) |
|     Forgery | 5 (15.6) | 4 (25) | 1 (6.3) |
|     Criminal Trespassing | 3 (9.4) | 2 (12.5) | 1 (6.3) |
|     Violent Crime | 3 (9.4) | 1 (6.3) | 2 (12.5) |
|     Fraud | 2 (6.3) | 2 (12.5) | 0 |
|     ID Theft | 2 (6.3) | 1 (6.3) | 1 (6.3) |
|     Drug Trafficking | 1 (3.1) | 0 | 1 (6.3) |
|     Disorderly Conduct | 1 (3.1) | 0 | 1 (6.3) |
|     Other Public Offenses | 2 (6.3) | 2 (12.5) | 0 |
|     Crimes Unknown | 3 (9.4) | 3(18.8) | 0 |

*Note.* $* p < .05, ** p < .01, *** p < .001$. *Percentages* are shown in parentheses next to number.

Table 9 contains study participants' reported Internet technology use characteristics,

including: comfort level with computers, amount of time spent on the Internet, and favorite

Internet activities. To examine the relationship between the treatment and control groups on the

Internet Technology characteristics variables, three chi-square tests were conducted. The only significant difference between groups occurred on the Internet technology characteristics was for comfort level, $\chi^2$ (2, $N = 32$) = 12.79, $p = .001$. That is, 11 (68.8%) participants in the intervention group reported being somewhat comfortable with computers, and, inversely, 14 (87.5%) of the control group stated that they were very comfortable with computers.

Table 9
*Internet Technology Use Factors*

|  | Full Sample | Game/ Control Group | Training/ Intervention Group |
|---|---|---|---|
| Comfort Level with Computers*** |  |  |  |
| Very Comfortable | 18 (56) | 14 (87.5) | 4 (25) |
| Somewhat Comfortable | 13 (41) | 2 (12.5) | 11 (68.8) |
| Not Comfortable | 1 (2) | 0 | 1 (6.3) |
| Daily Amount of Time Spent on Internet |  |  |  |
| None | 1 (6) | 1 (6.3) | 0 |
| 1-120 Minutes | 19(59) | 12 (75) | 7 (43.8) |
| 121-240 Minutes | 5 (15) | 3 (18.8) | 2 (12.5) |
| 241-360 Minutes | 4 (12) | 3 (18.8) | 1 (6.3) |
| 361-600 Minutes | 3 (9) | 2 (12.5) | 1 (6.3) |
| Favorite Internet Activity |  |  |  |
| Gambling | 3 (9) | 2 (22) | 1 (6.3) |
| Shopping | 7 (22) | 6 (37.5) | 1 (6.3) |
| Social Networking | 22 (69) | 14 (87.5) | 8 (50) |
| Surfing the Web | 9 (28) | 5 (31.3) | 4 (25) |
| Video Gaming | 3 (9) | 1 (6.3) | 2 (12.5) |
| Other Activities | 5 (16) | 0 | 5 (31.3) |

*Note. * p < .05, ** p <. 01, *** p <. 001. Percentages* are shown in parentheses next to number.

Overall, 57 chi-square tests were conducted to compare the treatment and the control groups to determine match of the groups in four major categories, including demographic, social-demographic, and psychosocial and Internet technology use. Typically, $\alpha$ is set at $p < .05$, however, with a Bonferroni correction, then $\alpha$ would equal .05 / 50 or $\alpha = 0.001$. If $\alpha = 0.001$, then there would not be a significant difference between the treatment and control groups on any

of the demographic variables. Using $\alpha = 0.001$, a significant difference between the treatment and control groups only occurred for three variables, including monthly income, alcohol as drug of choice, and comfort level with computers.

Finally, results for the Kolmogorov-Smirnov test for normality (Ghasemi & Zahediasl, 2012) indicate that the distributions of scores on the pre-tests, including Strategies ($D = .10$, $p = ns$), Identify Problems ($D = .11$, $p = ns$), and Access Resources ($D = .11$, $p = ns$), did not deviate significantly from a multivariate normal distribution. Likewise, results on the post-tests including Strategies ($D = .12$, $p = ns$), Identify Problems ($D = .12$, $p = ns$), and Access Resources ($D = .15$, $p = ns$), did not deviate significantly from a multivariate normal distribution. Therefore, the variables being analyzed met the assumption of multivariate normality.

In summary, the study groups were not significantly different from one another on the majority of demographic, socioeconomic, psychological, criminal, and Internet usage variables. Fifty-seven chi-square tests were conducted, and only 3 (5.0%) of these were found to be significantly different at $p < .001$ level of significance. Moreover, the Kolmogorov-Smirnov test results supported the conclusion that the distribution of scores obtained was not significantly different from what would have been expected in a normal distribution. Although one scale, Post-Test Access to Resources, produced one outlier. Using the Kolmogorov-Smirnov test, we found that the dependent measures included a multivariate normal distribution. The multivariate assumptions were considered met, so therefore, the PI and Dissertation Chair were able to proceed to the statistical analyses. Those results will be reported next.

## Data Analysis for Research Questions

Research questions pertinent to the study are:

1. Does the educational seminar increase parent-participants' self-efficacy to identify appropriate behavioral expectations for child and family use of Internet technology?

2. Does the educational seminar increase parent-participants' self-efficacy to identify their children's problematic Internet technology use?

3. Does the educational seminar increase parent-participant's' self-efficacy to identify local and national resources that address Internet addiction?

Data for the study were collected at pre-training seminar and at the beginning of the control group activity and after both assigned activities (post-training/control group activity) were completed. A doubly multivariate analysis was conducted to determine whether there were significant outcomes between the participants receiving the parenting training and the participants in the game group. Significant multivariate effects were not found for the main effects of group $F(3, 28) = .69$, $p = ns$. However, significant multivariate effects were found for the main effect of time $F(3, 28) = 14.29$, $p < .0005$, $\eta_p^2 = .61$, and the interaction of group and time $F(3, 28) = 7.71$, $p = .001$, $\eta_p^2 = .45$. This interaction effect indicates that the difference between the treatment/training group and the control/game group on the linear combination of the three dependent variables is different at the post-test than at the pre-test. Examination of the variable means suggests that this difference occurred because groups do not differ on any of the three dependent variables at the time of the pre-test, but they do differ at the time of the post-test. Follow-up ANOVAs reveal significant change from the pre-test to the post-test for all three-outcome variables, including: Strategies, Identification, and Resources.

An examination of the means suggests that the change in the three outcome variables held for the intervention group. Specifically, the increase in parenting self-efficacy for Internet strategies was greater for the treatment group ($M = 8.61$, $SD = .93$) than the control group ($M =$

8.04, $SD = 1.15$). This difference was significant $F(1, 30) = 17.60$, $p < .0005$, $\eta_p^2 = .37$.

Likewise, there was a greater change in self-efficacy scores for the treatment group on

identification of Internet addiction ($M = 8.29$, $SD = 1.06$), as compared to the control group ($M = $

7.69, $SD = 1.46$). This difference between the groups on the identification was also significant, $F$

$(1, 30) = 11.17$, $p = .002$, $\eta_p^2 = .27$. And finally, there was a greater change in self-efficacy for

the treatment group on identifying resources ($M = 8.01$, $SD = 1.37$), as compared to the control

group ($M = 7.58$, $SD = 1.89$). This difference was also significant $F(1, 30) = 15.80$, $p < .0005$,

$\eta_p^2 = .35$. Table 10 contains the pre- and post-testing group means, standard deviations, and

Cohen's effect size index ($d$) for both the intervention and control groups. Also, time interaction

and main effect of time results for each group are also reported in the table.

Table 10
*Pre-/Post-Test Means and Standard Deviations for PSAI Scales Comparing Training and Game Group*

|  | Training (N=16) | | | Control/Game (N=16) | | | Group * Time Interaction | | Main Effect Time | |
|---|---|---|---|---|---|---|---|---|---|---|
|  | Pre M (SD) | Post M (SD) | $d$ | Pre M (SD) | Post M (SD) | $d$ | $F$ | $\eta_p^2$ | $F$ | $\eta_p^2$ |
| Strategies | 7.21 (1.21) | 8.61*** (1.93) | 1.30 | 7.85 (.92) | 8.04 (1.15) | .18 | 17.60*** | .37 | 30.24*** | .50 |
| Identify | 7.18 (1.22) | 8.29*** (1.06) | .97 | 7.49 (1.44) | 7.69 (1.46) | .14 | 11.17** | .27 | 23.00*** | .43 |
| Resources | 5.56 (2.01) | 8.01*** (1.37) | 1.04 | 7.18 (2.03) | 7.58 (1.89) | .20 | 15.79*** | .35 | 30.73*** | .50 |

*Note. *p < .05, **p <. 01, ***p <. 001.* Means with different subscripts are statistically significant.

Figure 1 illustrates the differences between the training group and game group from pre-

to post-test on the Strategies subscales of the PSAI. The differences between the two groups is

decidedly different, as evidenced by the increase in score of 1.4 point from pre-test to post-test

for the training group; however, the control group only increased .19 point.



**Parenting Self-Efficacy to Develop Strategies**
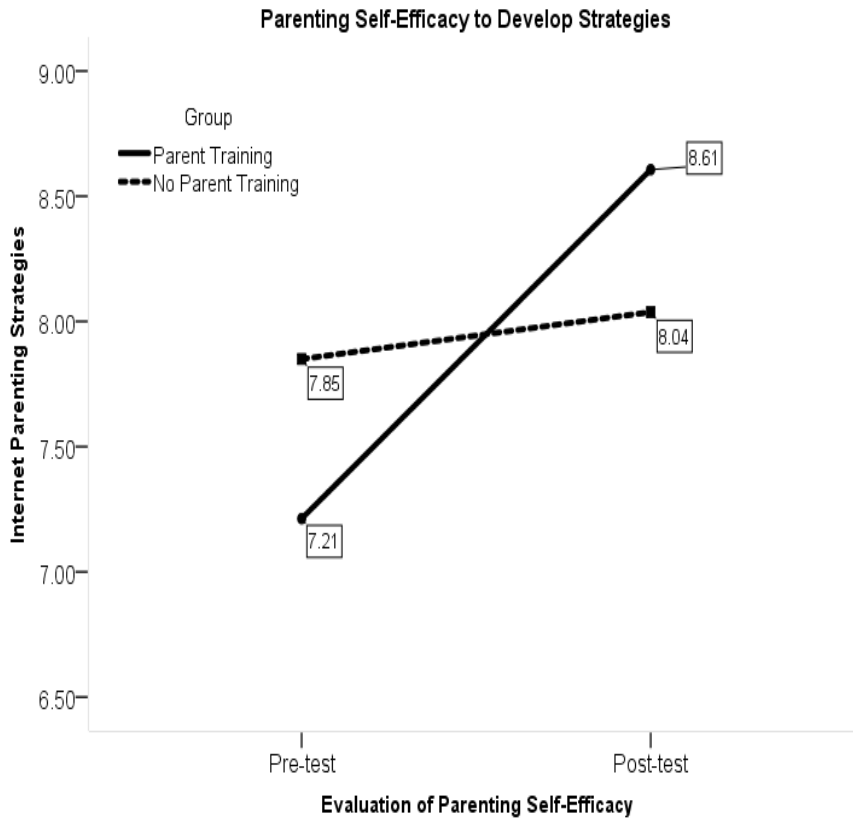
*Figure 1.* Profile plot of pre-post test PSAI Strategies scores

Similarly, Figure 2 illustrates the differences between training group and game group from pre-test to post-test on the PSAI subscale for Identification of a Problem. The increase of 1.2 points for the training group from pre-test to post-test was significantly greater than the change of .20 for the game group.

Parenting Self-Efficacy to Identify Internet Addiction Behaviors
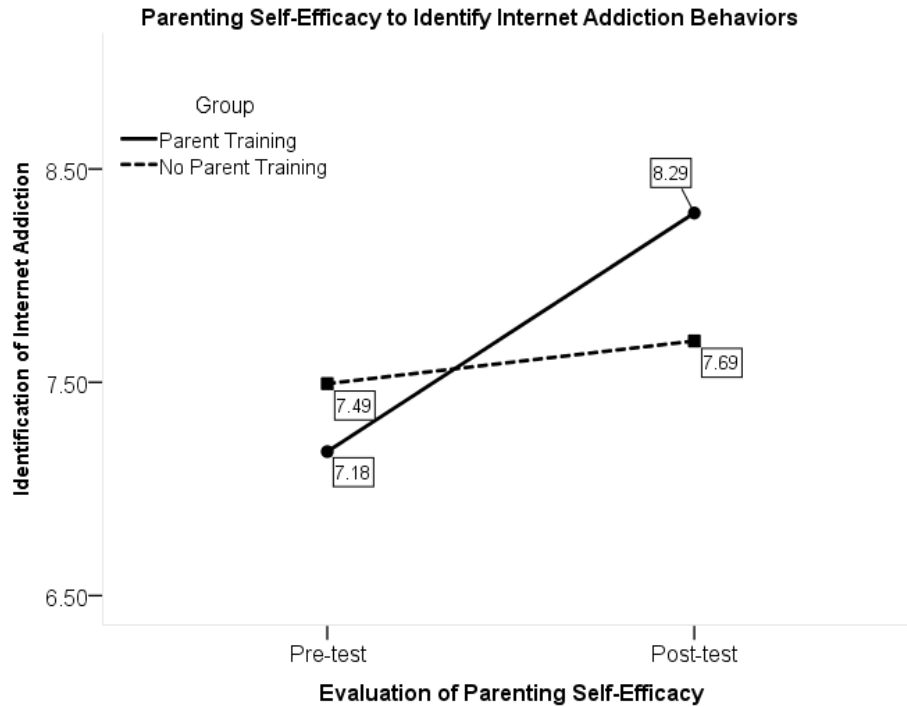
*Figure 2.* Profile plot of pre-post test PSAI Identification scores

Finally, Figure 3 illustrates the difference between pre-/post-test scores on the Resource subscale of the PSAI for the two study sample groups. The training group increased 2.5 points on this subscale, compared to only .40-point increase for the game group. Illustrated in all three of the profile plots is the cross-over pattern between the training group and the game group on the PSAI questionnaire from pre-test to post-test. According to Trochim (2006), when a pattern such as this is found in SPSS marginal means graphs, it typically represents strong evidence of the program's significant effect on the PSAI post-test scores.
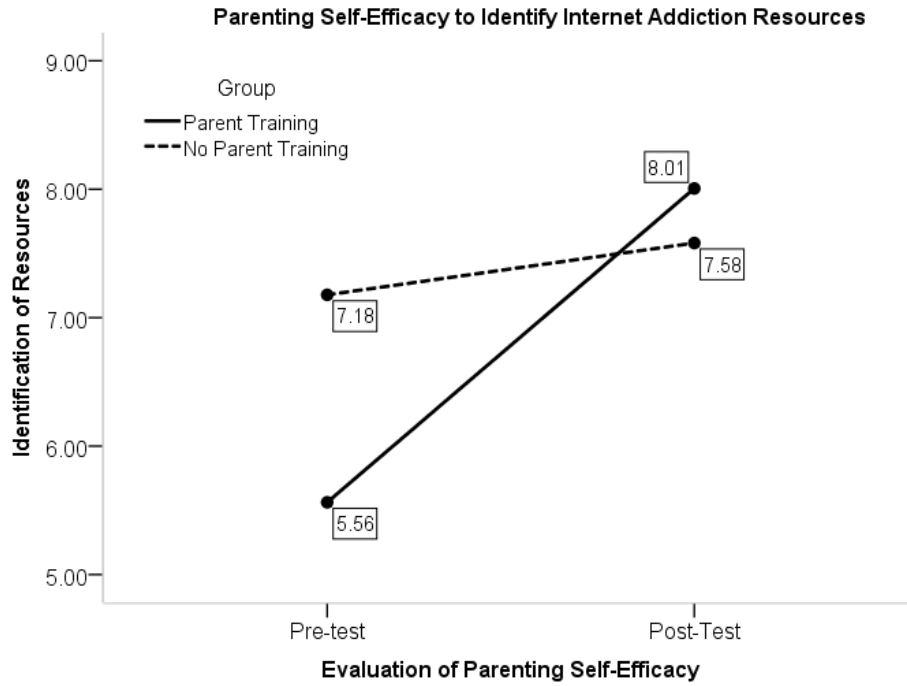
*Figure 3.* Profile plot of pre-post test PSAI Resources scores

## Chapter Summary

This section begins with an introduction of the chapter's contents. A report on the response rate and demographic details of study participants follows the introduction. Then, a discussion of chi-square test results examines differences between the training group and the game group. Analysis of the three research questions appears next, along with a table and graphic illustrations of the findings. The chapter ends with a summary of the chapter's contents.

# CHAPTER 5: DISCUSSION

## Introduction

This chapter reviews results of the study, including response rate, sample demographics, and description of the intervention. Next, the research questions are delineated, including results of the statistical analysis. Following discussion of the limitations, the implications and application of these results are provided. Recommendations for future research appear next, and the chapter concludes with summative comments.

## Summary of the Study

The purpose of this dissertation study was to examine the effectiveness of an Internet Addiction (IA) prevention training module when used to increase recovering parents' self-efficacy concerning the identification of (a) effective parenting strategies; (b) IA indicators; and (c) local and national resources focused on preventing and treating IA in youth. This study sought to evaluate changes in the self-efficacy beliefs of parents in recovery from addictions after they had participated in a 2-hour IA prevention-training seminar developed by the Principle Investigator and Dissertation Chair. The parent training synthesized components of Social Cognitive Theory's recommendations for improving parental self-efficacy (PSE) via verbal persuasion, observational learning, and practice in strategies designed to modulate emotions in stressful and challenging situations.

Using a quasi-experimental non-equivalent control group (NECG) design, 32 volunteer participants were recruited and assigned to either the 2-hour parent training or a 2-hour alternative activity involving a board game. At the start of the study, participants were assigned to groups based on their treatment cohort affiliation (outpatient or residential). All study participants completed a demographic questionnaire and pre-/post-testing using the Parental Self-

Appraisal Inventory (PSAI), a 30-item self-report questionnaire developed specifically as a measure of dependent variables for this study and structured as a10-item subscale corresponding to a research question (i.e., Strategies, Identification, Resources). Training participants also completed a seminar evaluation questionnaire at the end of the training activity.

To test for multivariate normality, 57 chi-square tests were conducted. Results of these tests indicated that the training group and the game group were similar, and therefore further statistical analyses would be appropriate. A doubly multivariate analysis from pre-test to post-test was used to determine if there were significant differences in any of the three dependent measures between participants in the training group and the game group. Partial eta-squared values were also calculated as a measure of the effect size at $p < .05$ level of significance.

Each of the three research questions addressed a different Internet parenting approach recommended in literature to reduce risk of future IA in children and adolescents. The PSAI was used as a measure of Parental Self-Efficacy (PSE) to intervene in youth Internet technology use. The first research question concerned parents' confidence to identify effective parenting approaches to decrease future problematic Internet technology use in families. Participants in the training group significantly improved their scores on the PSAI Strategies Subscale from pre-test to post-test. While participants in the game group also improved their scores on the PSAI subscale, the score change was relatively small in comparison to the training group. The second research question examined study participants' self-efficacy to identify IA in children and adolescents. The difference in scores from pre-test to post-test for the training group when compared to the game group was markedly improved, as evidenced by the 1.11-point difference for training, compared to the .20-point change in the game group. Finally, the last research question measured study participants' ability to find local and national resources strategies with

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IA prevention and intervention in children and adolescents. Again, when compared to the game group, the training group demonstrated significant improvement in scores from pre-test to post-test. In summary, the training appeared to have exerted a positive effect on PSE to effectively address family technology use in the three areas measured by the PSAI.

## Interpretation of Results

### Response Rates

The sample consisted of 32 adults, ages 19-48, who were enrolled in one of three treatment programs located in the northwest region of Washington State, including either one of two outpatient programs, or one residential treatment program. Initially, 55 individuals signed up to participate in the study, but only 32 (58%) completed all three phases of the experiment (pre-test, training/game, and post-test). The residential program included 16 women, and the two outpatient programs included 13 women (81.25 % and 3 men (18.75%). Participants were required to meet the following inclusion criteria: (a) age 18 or older; b) a parent or parenting a child ranging in age from 0 to18 years; (c) capable of reading and writing in English; (d) able to sit through a 2-hour activity; and, (e) must be enrolled in either outpatient or residential treatment.

To determine if the study population was actually representative of a normal distribution of the sample population from which participants were recruited, demographic information was collected and analyzed on the treatment population prior to implementing the study's intervention (Shadish et al., 2002). Results of the analysis indicated that comparatively, participants in the study population were similar in demographic characteristics to participants in the larger treatment population, as identified through information collected earlier. A side-by-side comparison between study group and treatment population is provided in Table 11.

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Table 11

*Comparison of Study and Treatment Population Demographic Variables*

| Demographic Variables | Study Population (*N = 32*) | | Treatment Population (*N = 1032*) | |
|---|---|---|---|---|
| | Training Group | Game Group | Residential | Outpatient |
| Gender | 81.3% Females<br>18.8% Males | 100% Females | 100% Female | 51% Male<br>45% Female<br>4% Unknown |
| Race | 87.5 % White<br>6.3% Native American<br>6.3% African American | 75% White<br>12.5% Native American<br>6.3% Assian-American<br>6.3% Other | 63% White<br>5% Native American<br>4% African American<br>5% Hispanic<br>23% Other | 79% White<br>3% Native American<br>6% African American<br>4% Asian American<br>4% Hispanic<br>4% Unknown |
| Educational Status | 75% Completed High School | 50.2% Completed High School | 63% Completed High School | 67.2% Completed High School |
| Employment Status | 75% Unemployed | 75% Unemployed | 100% Unemployed | 73% Unemployed |
| Monthly Income | 50% ≤ $500 per Month | 100% ≤ $500 per Month | Not Reported | 69.4% ≤ $500 per Month |
| Substance of Choice-Top 3 | 56.3% Meth<br>50% Alcohol<br>12.5% Heroin/Meth | 75% Meth<br>56.3% Heroin/Meth<br>31.3% Heroin | 45% Heroin<br>27% Meth<br>13% Other | 42% Alcohol<br>27% Heroin<br>15% Meth |
| Legal Involvement | 87.5% Involved with Legal System | 62.5% Involved with Legal System | 54% Arrested in Past Year | 57% Involved in Legal System |

## Sample Demographics

The overall study sample consisted of 29 women (90.6%) and 3 men (9.4%). The age ranges were between 19 to 48 years (*M* = 32.65, *SD* = 6.86). The training group was comprised of 13 females (81%) and 3 males (19%) with an average age of 35.5 (*SD* = 5.98). The game group included 16 females (100%) with an average age of 29.6 (*SD* = 6.59). All study participants had been diagnosed with some type of Substance Use Disorder (SUD). The outpatient participants received the intervention, and the 16 female residential participants served as the control group. To control for cross contamination of information shared between study groups, the assignment to treatment condition was determined by the participants' treatment setting/status at the beginning of the study. Hence, outpatient treatment clients received the training, and residential clients served as the comparison control group.

In comparing reported demographics between the training group and the game group, the

Principle Investigator and Dissertation Chair found the groups to be similar in the majority of categories surveyed on the demographic questionnaire. Apart from the low number of males who took part in the study ($n = 3$), there were very few differences in the demographic factors between the two groups. Specifically, at the time of the study, training group participants reported significantly fewer children living with them ($M = 2.13$, $SD = .62$) than the game group participants ($M = 2.38$, $SD = 1.67$). This difference may have occurred because residential program participants in the game group were permitted to have their children living with them in the treatment facility, as these children were under the age of 5. Another difference between the treatment and comparison groups emerged from responses to the question about drug of choice. For the training group, 50% of participants listed alcohol as one of their drug of choice, whereas in the game group, not one person reported alcohol as a drug of choice.

Study group participants also expressed different responses to the two Internet Use variables. Game group participants were shown to be more comfortable using Internet technology (87.5% very comfortable), compared to training group participants (25% very comfortable). Additionally, the game group reported spending more time on the Internet (50% admitted spending between 121-600 minutes per day) than did the training group (25% admitted spending between 121-600 minutes per day). While the age difference between groups was not statistically different, the game group was younger on average in comparison to the training group ($M = 29.6$, $M = 35.5$, respectively). These findings are especially relevant in light of recently published studies suggesting that parents with limited digital skills and technology experiences tend to be more permissive and less participative (Brito, Francisco, Dias, & Chaudron, 2017). Additionally, level of knowledge in using mobile devices was significantly correlated to PSE (Wong & Lee, 2017). Finally, Livingstone et al. (2017) found that parents who

are more fearful or less skilled in digital technology reduce children's related opportunities and, as a result, also reduce exposure to adversity and chances to develop resilience.

**Parent Training Intervention**

The parent-training intervention was created from a prototype offered in fall 2014 to volunteer parents recruited from a community school program in western Washington State. Based on these parents' feedback and analysis of pre-/post-test results measured on the Internet Mediation Awareness Questionnaire, a training model was created for use in this dissertation study. The parent training incorporated Social Cognitive Theories principles of perceived self-efficacy to parenting approaches recommended for children's and adolescents' appropriate use of Internet technology (Bandura, 1986, 1995, 1997; Sanders, Parent, Forehand, Sullivan, and Jones, 2016; Wong & Lee, 2017). Using observational role modeling, verbal persuasion, and related strategies to modulate emotions in stressful and challenging situations, study participants were given information intended to improve their confidence in parenting practices related to their families' respective Internet technology use. The parent training included didactic presentation using PowerPoint slides, open-ended discussion, and viewing of a 7-minute video portraying positive interaction between a parent and child discussing rules about family Internet technology use.

In one of the few studies conducted to date (Wong & Lee, 2017) that examines the relationship between PSE and guidance of children's and adolescents' information and use of mobile devices, the researchers found that PSE was related to parents' Internet knowledge and positive parent-child communication about Internet use generally. Wong and Lee's findings support this dissertation study in suggesting PSE is an important construct to consider when developing targeted prevention approaches to offset risk of future development of IA in youth. In

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another study conducted by Sanders et al. (2016), the researchers also found perceived efficacy was associated with effective technology–related parenting strategies across 3-developmental stages. Sanders et al. (2016) recommend, that for at least young children, a good starting point to reduce potential PIU is to educate parents about technology and inform them about the best parenting strategies for their children's technology use. Sanders et al. suggestions also align with the parent training design developed for this study.

The PSAI was created specifically for this study and is the only known self-report measure in the U.S. that addresses parents' self-efficacy to intervene effectively in children's Internet technology use. The PSAI was constructed from a conceptual analysis of factors correlated in literature to the relevant constructs for parental mediation. By developing inventory items in this manner, the PSAI is suggested to hold face and content validity (Hood & Johnson, 2007). The measure also underwent two waves of field-testing prior to its use in this study. The final version of the PSAI includes three subscales containing 10 questions, conceptually tied to the research questions.

To determine whether the 30-item measurement of PSE provides acceptable internal consistency and reliability, Cronbach's alpha ($\alpha$) was computed (Leech, Barrett, & Morgan, 2008). And as suggested by Tavakol and Dennick (2011), alpha was calculated for each of the subscales to avoid inflating the value of alpha for a better estimate of reliability. The Cronbach's $\alpha$ results for pre-test on each of the three subscales included: Strategies = .74, Identification = .86, and Resources = .93. On post-test, Cronbach's $\alpha$ were: Strategies = .83, Identification = .83, and Resources = .90. Based on these findings, the PSAI is suggested to be unidimensional and grounded in tau equivalent model that assumes that each test item measures the same latent trait

on the same scale and provides an accurate estimation of the reliability of the measure (Graham, 2006; Tavakol & Dennick, 2011).

**Statistical Analysis of Research Questions**

With regard to doubly multivariate-repeated measures, differences were examined between participants in both the training and game groups' scores on the PSAI three subscales. Significant multivariate effects were not found for the main effects of group. However, significant multivariate effects were found for both the main effect of time and the interaction of both group and time on a linear combination of the three PSAI subscales from pre-test to post-test. The differences in means on each of the three subscales suggests that the variation occurred because the groups did not differ on the PSAI scores at pre-test, though they did differ at the time of the post-test. Follow-up univariate results suggested that the marked differences in scores from pre-test to post-test were significant for all three outcome variables, including Strategies, Identification, and Resources. These findings indicate that these changes over time were associated with the intervention. A review of each research question is provided next.

**Research Question 1:** Does the 2-hour training module increase study-participants' self-efficacy about identifying appropriate behavioral expectations for their children's and adolescent's use of Internet technology?

After finding a significant multivariate effect for the treatment * group interaction, a follow-up univariate repeated measures found significant differences in the Strategies subscale of the PSAI scores from pre-test to post-test $F(1, 30) = 17.60$, $p = .0005$, $\eta_p^2 = .37$. Specifically, while the training group started at .64 points ($M = 7.21$) below the game group ($M = 7.85$) on Strategies subscale scores, the training group increased 1.40 points on the post-test ($M = 8.61$), as compared to the .19-point ($M = 8.04$) change in scores for the game group. Further, according to

Leech et al. (2008), the change in scores is considered large to much larger than what would be expected in similar behavioral science studies (Cohen's effect size index $[d] = 1.30$, $\eta_p^2 = .37$).

**Research Question 2:** Does the 2-hour training module increase study participants' self-efficacy about identifying IA in their children?

After finding a significant multivariate effect for the treatment * group interaction, a follow-up univariate repeated measures found significant difference between the groups on Identification of Internet addiction subscale of the PSAI scores from pre-test to post-test $F$ (1, 30) = 11.17, $p = .002$, = .27. That is, with regard to PSE about Identifying their children's and adolescents' Internet technology addiction, the training group increased by 1.11 point ($M = 8.61$; Cohen's $d = .97$), as compared to the game group's smaller increase of .29 ($M = 8.04$; Cohen's $d$ = .14). Furthermore, the group by time interaction on the Identification subscale ($\eta_p^2 = .27$) is considered a medium to large effect size, and the main effect of time ($\eta_p^2 = .43$) showed a larger than typical effect size found in similar behavioral science studies (Leech et al., 2008).

According to Din, Li, Zhou, Dong, and Luo (2017), identification of risk factors linked with adolescent IA is an important step toward developing effective prevention and Intervention strategies. These researchers highlight the association between parental monitoring and IA and the need to improve parenting skills as a method that may help to decrease Internet technology problems in adolescents.

**Research Question 3:** Does the 2-hour training module increase study participants' self-efficacy about identifying local and national resources that address IA?

As in research questions 1 and 2, univariate statistical procedure was also used to address the third research question about resources to prevent and treat IA. In this case the results of applying this procedure resulted in significant interaction of treatment x group $F$ (1, 30) = 15.79,

$p = .0005$, $\eta_p^2 = .35$ as measured by the Resources subscale on the PSAI. However, on the Resources scale, the training group began with lower pre-test scores ($M = 5.56$) than the game group ($M = 7.18$). Yet, the training group improved significantly on the post-test ($M = 8.01$), as compared to the game group ($M = 7.58$). While both groups improved from the pre-test to the post-test, the training group increased 2.5 points (Cohen's $d = 1.04$), while the game group had a smaller .40-point increase (Cohen's $d = .20$). This difference in the amount of improvement highlights the large to larger than expected group by time interaction for the Resource subscale ($\eta_p^2 = .35$).

## Study Limitations

Despite efforts to address internal and external validity limitations of the study results, there remain several findings that warrant mention, including:

1. First, the PSAI is not a normed instrument, and therefore reliability and validity have not been fully measured. Preliminary analysis results reported in this study indicate that the PSAI is a promising new instrument for measuring PSE for technology-related parenting (Sanders et al., 2016). Further research on this instrument is warranted and planned by the author.

2. The results of this study were based on one trainer working with participants in one region of the United States. Additionally, the trainer was a doctoral student who developed the PSAI. The results of the study cannot yet be generalized to other trainers or populations not undergoing substance abuse treatment.

3. Participants did not have opportunities for supervised practice of parenting skills with their children and adolescents, nor did they have opportunities to role play as part of this training. Their PSE Internet technology skills did increase, but there was no possible

mechanism for determining conclusively whether their parenting skills were significantly enhanced as a result of their participation in the activities surrounding this 2-hour workshop.

4. There was one outlier included in the analysis who influenced the results. One of the training participants received lower scores on every item of the PSAI and also did not change responses from pre-test to post-test. As a result, combining this participant's information with the rest of the data in the analysis reduced the results of the findings.

5. The small sample size not only restricted the validity and generalizability of the study findings, but also limited the types of statistical analyses that could be performed.

6. There is the possibility that participants in this study were highly self-motivated because they had already made a significant decision to enter a treatment program; so, whether the training would benefit parents not receiving SUD treatment remains unknown.

7. There was also no follow up survey to determine if a behavioral change had occurred that was maintained over time.

## Implications of the Study

The findings of this study offer implications for rehabilitation administrators and counselor educators. An overview appears below.

### Implications for Rehabilitation Administrators

The results of this study offer preliminary evidence that a parent training can be integrated into a behavioral health service environment with relatively minimal expenditure of human capital and financial resources. The parent intervention was 2 hours long and showed promise as an effective approach to support parents identified in literature as those who would

benefit from the information offered in the training (Bonnaire & Phan, 2017; Brito et al., 2017; Ding et al., 2017; Schneider, King, & Delfabbro, 2017; Vondráčková & Gabrhelík, 2016; Zhang, Brook, Leukefeld, & Brook, 2016).

Additionally, while evidence is mixed that IA shares the same neurobiology as SUD (Pass, Kardefelt-Winther, & Franck, 2017; Zhang et al., 2016), the literature identifies significant similarities, including family risk factors, for both conditions (Bonnaire & Phan, 2017; Ding et al., 2017; Zhang et al., 2016). The findings of this study offer rehabilitation administrators an opportunity to examine policy implications for incorporating IA in case finding and service delivery related to any future behavioral health programming. Moreover, as IA continues to gain public attention, and more youth and adults are identified as in need of interventions addressing the problem, rehabilitation administrators must ensure that clinicians possess the training and background to respond effectively to the continuum of psychosocial problems associated with IA.

Further, in a recent systematic review of quantitative research representing an international perspective on prevention strategies for Internet gaming disorder (IGD) and IA, the researchers reported that the English language research base on structured prevention of problematic gaming or Internet use is much less developed than the corresponding treatment evidence base (King et al., 2017). The researchers noted they were only able to identify 13 quantitative studies conducted over the last decade, and of the 13, only 1 was completed in the United States (King et al., 2017). The researchers recommended policy implications that include greater investment in educational measures targeting youth and their families. Researchers also emphasized the importance of teaching clients fundamental Internet skills in combination with practices supporting moderate use of Internet technology, all while also fostering other interests

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and individual competencies unrelated to technology use. The training developed for this study matches the suggestions offered by King et al., (2017) and would be especially important for parents in SUD treatment who demonstrate high mental health needs and histories of significant family management problems (Schneider et al., 2017).

**Implications for Counselor Education and Practices**

Counselor education and post-secondary education, including continuing professional educational environments and resulting counseling practices, can benefit from this research study in several ways. First, the primary focus of the study involved a thorough review of an emerging problem reported to affect approximately 8-10% of the world population (Jorgenson, Hsiao, & Yen, 2016). According to King et al. (2017), problems related to high levels of gaming and Internet use are increasingly becoming recognized as potential public health problems, not only in the United States, but also worldwide. Therefore, counselors of every specialty would benefit from learning how to identify IA and become familiar with prevention and treatment approaches shown to be effective at reducing the harmful physical and mental consequences resulting from the condition. Counseling educators and the academic programs they participate in would all benefit from development of curriculum content and practice guidelines for counselors-in-training, including coverage of factors involved in assessment, treatment, and even prevention of IA in a variety of human service settings.

Another important contribution this study can provide counselor education programs is that it models a process for identifying and applying an innovative approach to delivering prevention services for parents identified as high-risk and, therefore, in greatest need of the educational intervention (Gilbo et al., 2014; Lim, Stormshak, & Dishion, 2005; Nock, Kazdin, & Kazdin, 2005). The brief training model requires less time commitment from participants than

more traditional parent education programs. Also, the parent training disseminates information to reflect reading and learning styles of the study population (Koerting et al., 2013). This study teaches not only important cutting-edge diagnostic and remedial skills, but also offers a method to deliver the remediation efficiently, thereby identifying opportunities to motivate more clients to undertake this effective and time-efficient therapeutic response to a significant societal problem (Moro, Wahesh, Likis-Werle, & Smith, 2016).

And finally, this research study can serve as a teaching tool to support the efforts of counselors-in-training to learn how to develop, plan, and implement a program model steeped in the principles underlying evidence-based practices (EBP). According to Morrow, Lee, Bartoli, and Gillen (2017), an EBP model should be based on three components: client characteristics, the best available research, and counselor expertise. In this regard, the parent training used for this study was created after a thorough review of professional literature and designed with the specific characteristics of the intended study participants in mind. Further, the parent training model evolved from combined experiences of seasoned professionals working in the counseling field for over two decades (Principle Investigator and Dissertation Chair). The study also filled a gap identified in professional literature which calls for effective prevention programming to thwart development of IA in children and adolescents. Based on the findings of this study, the 2-hour parent training offers evidence of being effective at improving recovering parents' self-efficacy to mediate their children's Internet technology use. In general, this research study could support the efforts of the counseling and rehabilitation professions for years to come.

## Recommendations for Future Research

In addition to the brief parent training, this study would have benefited from inclusion of a qualitative component of inquiry addressing study participants' own experiences with

technology use and their perspectives on raising children in the media infused climate existing in society today. The study took place in a non-laboratory setting where study participants were familiar with an inductive line of inquiry characteristic of their own SUD treatment group experiences with counselors posing similar lines of questioning. Use of ethnographic methods for data collection could have added deeper insight into study participants' personal values and also their views of the mediation strategies used in guiding their children's involvement with newer technologies.

Future research to norm the PSAI would be beneficial in establishing the instrument's validity and reliability. And, while the results of this research provided initial evidence that the study intervention did change PSE of the recovering parent participants, future research should employ more rigorous methodologies, including longitudinal corroboration and replication of the findings. Only by duplicating the study's results and potentially addressing limitations of the research will this parent mediation training be undertaken widely with confidence.

## Conclusion

This dissertation study filled a need identified in literature for targeted approaches to reduce problematic Internet use in youth. The parents targeted were identified as a priority to receive information to counter vulnerability in their children. The parent training developed is the first known to focus primarily on parents in recovery from substance use disorders. Results showed the intervention was effective at increasing PSE to address PIU in children and adolescents. A measure of the dependent variables was developed, pilot tested and revised to ensure reliability. Cronbach's alpha results supported the PSAI as a reliable measure of PSE. In spite of limitations, the understanding gained from the outcome of this study will inform

behavioral health professionals in the future and, hopefully, protect the children and adolescents at highest risk to develop IA.

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Greenville, NC 27834
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## NOTIFICATION OF INITIAL APPROVAL: EXPEDITED

From: Social/Behavioral IRB

To: Mary Schatz

CC: Stephen Leierer

Date: 5/8/2017

Re: UMCIRB 17-000091
Training Effects on Recovering Parent's Self-Efficacy to Identify Problems, Solutions and
Resources to Prevent Problematic Internet Use in Youth

I am pleased to inform you that your Expedited Application was approved. Approval of the study
and any consent form (s) is for the period of 5/7/2017 to 5/6/2018. The research study is eligible
for review under expedited category #7. The Chairperson (or designee) deemed this study no
more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when
necessary to eliminate an apparent immediate hazard to the participant. All unanticipated
problems involving risks to participants and others must be promptly reported to the UMCIRB.
The investigator must submit a continuing review/closure application to the UMCIRB prior to
the date of study expiration. The Investigator must adhere to all reporting requirements for this
study.

Approved consent documents with the IRB approval date stamped on the document should be
used to consent participants (consent documents with the IRB approval date stamp are found
under the Documents tab in the study workspace).

The approval includes the following items:

Name:
Mary Schatz's IRB Dissertation Proposal

Parental Self-Appraisal Inventory

Personal History Questionnaire
Revision #1 April 8, 2017
Seminar Training Evaluation

Description:
Study Protocol or Grant Application
Surveys and Questionnaires
Surveys and Questionnaires
Consent Forms
Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: Demographic Table of Treatment Population

Table B
*Residential Client Demographic Information from January Through December 2015*

| Sex, Age, & Educational Level | Race/Ethnicity | Drug of Choice | Court Involvement | Socioeconomic Status/Family Profile | Personal History |
|---|---|---|---|---|---|
| 100% Female | African American- 4% | Alcohol- 8% | 20% Involved in Drug Court | 100% Unemployed | 98% Have history of Childhood Trauma |
| 64% are ages 18-29 | Hispanic-5% | Cocaine-4% | 90% Involved with Child Protective Services | 100% under Medicaid Health Care Coverage | 54% Were victims of domestic Violence |
| 36% are ages 30-44 | Native American-5% | Heroin-45% Marijuana-5% | 54% Arrested in past year | 100% Parent of child or children 0-18 years of age | 88% Diagnosed with Co-Occurring Disorder |
| 63% completed High School | White-63% Other-23% | Methamphetamines -27% Other-13% 62%-admit injecting substances | | | |

APPENDIX C: Demographic Table of Treatment Population

TABLE C
*Outpatient Client Demographic Information from January Through December 2015*

| Sex, Age, & Educational Level | Race/Ethnicity | Drug of Choice | Court Involvement | Socioeconomic Status/Family Profile | Personal History |
|---|---|---|---|---|---|
| 51% Male<br>45% Female<br>4% Unknown | African American- 6.05% | Alcohol- 42%<br>Cocaine- 3.5%<br><br>Heroin- 27% | 57%- Were ever arrested<br><br>16.8%- DUI | 73%- Not Employed<br><br>69.4% -Report personal monthly income of ≤ $500 | 43%- Admit having co-occurring disorder |
| 43% Ages 17-30<br>42% Ages 31-50 | Asian/Pacific Islander/Middle Eastern- 3.6% | Marijuana-Cannabis- 7% | 14.3%- Drug Possession | | 14%-Receiving mental health services |
| 11% Ages ≤ 51 | Hispanic Origin- 4.4% | Methamphetamines-16% | 0.9%-Drug Trafficking or Manufacturing | 55%-Have Medicaid Insurance | 29%-Want mental health services, but not receiving it. |
| 67.2 % Completed 12th Grade | Native American-3% | Other- 4.5% | | 17%-Receive Medicare | |
| | White- 79.4 % | | | 28.1%-No Insurance | 38.8%- Parent of 0-18 year old |
| | Unknown-3.5% | | | | 80.9%-Do not have their child/children living with them |

*Source: Washington State DBHR Substance Abuse Treatment Reports –Run date 7/15/16 (N =920)*

## APPENDIX B: Two-Hour Presentation On

# EFFECTIVE PARENTING FOR THE DIGITAL AGE: HOW TO HELP OUR CHILDREN MAINTAIN BALANCE IN A WIRED WORLD

## NOVEMBER 25, 2014 3:00–5:00 PM



### Sponsored by Sky Valley Education Center
351 Short Columbia St., Monroe, WA 98272

## PRESENTED BY MARY SCHATZ, PHD CANDIDATE

Ms. Schatz is currently completing her PhD through East Carolina University in Rehabilitation Counseling and Administration and this presentation is part of her dissertation research project. The training is intended to offer practical skills and deeper understanding of the critical role parents' play in helping guide their offspring toward more responsible use of Internet technology, especially with the dramatic rise seen today world-wide in young people's use of it.  Ms. Schatz is a licensed Mental Health Counselor Associate and certified Chemical Dependency Professional in Washington State and is a nationally Certified Rehabilitation Counselor. She has over 25 years experience working with youth and families in prevention and treatment of addiction and co-occurring disorders. Her dissertation topic is focused on increasing awareness of Internet Addiction for families raising children and adolescents considered to be at greatest risk for the problem.

# Internet Mediation Awareness Seminar

Instructor:  Mary Schatz                                           Name:

                                                                             Date:

*Instructions: Carefully read each question and circle the letter of the correct answer.*

1.  What percentages of teens are using Internet Technology Today?

    a.  100%

    b.  95%

    c.  75%

2.  Youth are attracted to Internet technology because:

    a.  Increases global connectedness

    b.  Can add comments on Wikipedia

    c.  Keeps them under parent's supervision

3.  Male gender are more frequent users of:

    a.  Computer software

    b.  Video gaming

    c.  Social media

4.  Females are more frequent users of:

    a.  Computer software

    b.  Video gaming

    c.  Social media

5. What are adverse effects of technology use for children and teens?

    a. Eating disorders/sleep deprivation/obesity

    b. Compulsive Internet usage/online gambling/viewing of pornography

    c. All of the above

6. What are positive benefits of technology use for youth today?

    a. Increases aggression and de-sensitivity

    b. Exposure to food and beverages advertisements

    c. Increases sense of autonomy and competency

7. What is the American Academy of Pediatrics recommended daily limit for media use in children 0 to 2?

    a. 1-2 hours

    b. 0 hours

    c. 30 minutes

8. What is average amount of time U.S. youth are spending on media per day?

    a. 2 hours

    b. 7 hours

    c. 30 minutes

9. Personality factors often associated with youth who compulsively use Internet technology are:

    a. High self-esteem/high self-control/average social skills

    b. Low self-esteem/low self-control/poor social skills

    c. Neither of above

10. Co-occurring psychiatric diagnosis for youth identified with Internet addiction is:

    a.   ADHD

    b.   Conduct disorder

    c.   Schizophrenia

11. The best prevention for keeping youth from overusing Internet technology include:

    a.   Requiring daily exercise

    b.   Parental restrictive software

    c.   Positive/open communication between youth and parent(s)

12. What other addiction was Internet addiction modeled after

    a.   Alcoholism

    b.   Gambling

    c.   Shopping

13. One popular technology driven event youth are involved with is:

    a.   Online dating events

    b.   PAX Prime convention

    c.   Searching the net

14. Negative health effects related to Internet addiction include:

    a.   Sleep deprivation/depleted energy/poor vision

    b.   Adverse eye hand coordination/arthritis/dry mouth

    c.   Cancer/weaken gait/weight loss

15. Positive aspects of Internet technology for youth include all but:

    a.   Increased social & global connection

    b.   Enhanced mental health and well-being

    c.   Watching ads for corporate sponsored foods and beverages

16. One unhealthy website popular with certain youth is:

    a. Mental health advice

    b. Pro-anorexia

    c. Pax Prime convention information

17. The best parenting strategy is:

    a. Permissive, but not demanding

    b. Demanding but not permissive

    c. Balance between being responsive and demanding

18. Taking breaks from tech use helps with:

    a. Getting perspective and opportunities for self-reflection

    b. Keeping computer/cell phone/video console from requiring expensive repairs

    c. Helps them from losing interest with online activities

19. Which of the following statements are true?

    a. News media has done a great job of keeping parents informed about problems related to youth's technology use.

    b. Creating opportunities for children to engage in open dialogue with parents is effective Internet addiction prevention strategy.

    c. Parents should be frightened and on guard about their children's use of Internet technology.

APPENDIX F: Written Research Study Announcement

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

My name is Mary Schatz and I am a PhD Candidate in the early stages of implementing a dissertation study to satisfy the requirements necessary to receive my PhD in Rehabilitation Counseling and Administration from East Carolina Universities- Department of Addiction and Rehabilitation Studies. I have been given permission from Evergreen Recovery Center's management to conduct the research study with client volunteers. The volunteers must be parents of children 0-18 years of age, who are currently living with them or living with a different caregiver. The study will examine how parent's belief about their ability to parent will affect their comfort level interacting with their children on a specific topic of interest. The study will require approximately 2.5 hours of time to attend a one-time only meeting at the Everett Grand Avenue location. Childcare and light refreshments will be provided for all volunteer participants. Additionally, each participant will receive a small gift as a gesture of gratitude for his or her willingness to participate in my research project. Any personal information collected as result of being in the project will remain strictly confidential and handled by myself only.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

In the next few minutes I will be passing around a form for everyone to fill out that asks interested participants to indicate whether or not they would like to receive more information about the research study. For those who are interested, there is a place for you to write down your contact information, so I may contact you at a later time to give more details about the study and to answer any questions you may have about what your participation would entail.

Any information attained from the implementation of this research study will contribute to prevention programs for families recovering from substance use disorders. Your willingness to participate in the study will be greatly appreciated. However, there is no penalty if you chose not to participate. If you are not interested, just mark that section on the form I will be passing around. Participation is strictly voluntary.

All written information that you provide on this form will be kept strictly confidential and securely maintained. Once the information is no longer needed, it will be destroyed. Thank you for allowing me to take time away from your scheduled activity today and for your potential interest in being a part of my dissertation study.

Sincerely,

Mary Schatz

APPENDIX G: Invitation Letter to Participate in Research Study

Dear Parent Volunteer,

You are invited to participate in a study being conducted through East Carolina University that is examining how a particular type of parenting education approach affects recovering parent's confidence to interact with their children on a topic important to his or her child's future wellbeing. The lead researcher is Mary Schatz, PhD Candidate, who is conducting this research study as part of the requirements to complete her PhD in Rehabilitation Counseling and Administration through the Department of Addiction and Rehabilitation Studies at East Carolina University.

In order to be to be a part of this study, there are a few questions that you will need to answer that will help to determine if you will qualify to participate. The questions area as follows:

1. Are you 18 years old or older?

2. Are you a parent of a child 0-18 years of age?

3. Are you comfortable reading, writing and/or speaking in the English language?

4. Would you have any problems sitting through 2- hour educational/fun activity?

5. Would you need childcare in order to attend the 2-hour activity?
If so, what are the ages of children who would need childcare?

6. Would you like reimbursement for gas or bus ride to get to and from the training location?

Please remember that any of your personal identifying information will be kept strictly confidential and maintained in secured manner until the study is completed, after which time it will be destroyed. Your participation is in this study is completely voluntary and you having the right at any time to drop out without fear of penalty.

If you have any further questions or concerns related to participating in the study, please contact the lead researcher, Mary Schatz at (425) 322-0885.

Thank you.

*East Carolina University*

APPENDIX H: INFORMED CONSENT FORM

**Informed Consent to Participate in Research**
Information to consider before taking part in research that has no
more than minimal risk.

**Training Effects on Recovering Parent's Self-Efficacy to Identify Problems, Solutions and Resources to Prevent Problematic Internet Use in Youth.**

**Principal Investigator:** Mary Schat
**Department:** Department of Addiction and Rehabilitation Studies-East Carolina University
**Address:** Health Sciences Building, 4425-Mail Stop 668, Greenville, NC 27834
**Principal Investigator Telephone number:** (425) 422-2930
**Faculty Coordinator:** Dr. Stephen Leierer, Dissertation Chair
**Faculty Telephone number:** (252) 744-6298

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Researchers at East Carolina University (ECU) and Evergreen Recovery Centers (ERC) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

**Why am I being invited to take part in this research?**
The purpose of this research is to see if a two-hour training will help parents to adjust how they interact with their children around Internet technology use. Mary Schatz is conducting the study under the supervision of Stephen Leierer, PhD, as part of the requirements for obtaining a PhD in Rehabilitation Counseling and Administration from East Carolina University.

You are being invited to take part in this research because you are a parent or caregiver of a child between the ages of 0-18 years. The decision to take part in this research is yours to make. By doing this research, we hope to learn if the training helps parents to feel more comfortable about overseeing their children's use of online technology

If you volunteer to take part in this research, you will be one of about 40 people to do so.

**Are there reasons I should not take part in this research?**
I understand I should not volunteer for this study if I have difficulty sitting through a two-hour training or I am not fluent in the English language.

**What other choices do I have if I do not take part in this research?**
You can choose not to participate.

**Where is the research going to take place and how long will it last?**
The research will be conducted at Evergreen Recovery Center's Grand Ave location. You will need to come to 2732-Grand Ave only one time during the study. The total amount of time you will be asked to volunteer for this study is 2.5 hours.

**What will I be asked to do?**
You will be asked to do the following:
- The **first 15-20 minutes** of the activity will involve you completing a short questionnaire called the **Parent Self-Appraisal Inventory (PSAI),** which has 30 questions asking you to rate on a scale of 1-5 how comfortable you are with different aspects of overseeing your children's online technology use.
- You will also be asked to complete a **personal history questionnaire (PHQ)** that asks questions about your age, race, marital status, number of children and their ages, education, employment status, estimated income and questions related to your own technology use and substance use history.
- The information you provide will be kept strictly confidential and anonymous. **Your identifying information will not be listed anywhere on the PSAI or the PHQ**. You will be asked to sign the informed consent when you arrive for your assigned activity before it starts.
- After every participant completes the PSAI and PHQ, you will take part in either: **a parent education seminar or different planned activity for approximately 2 hours.**
- At the end of the activity you will be asked to complete the PSAI again and to fill out a training evaluation form. After you turn in all of your completed forms in the manila envelope provided, you will receive a small gift and travel reimbursement as way to thank you for being a volunteer participant. **If you need childcare,** a trained therapeutic childcare provider will oversee the care of your child (ren) during the time you are participating in your assigned activity.

**What might I experience if I take part in the research?**
We don't know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if you will benefit from taking part in this study. There may not be any personal benefit to you but the information gained by doing this research may help others in the future.

**Will I be paid for taking part in this research?**
We will not be able to pay you for the time you volunteer while being in this study. As noted earlier, you will receive a small gift and travel reimbursement at the end of the group activity to thank you for participating. Childcare and light refreshments are also provided.

**Will it cost me to take part in this research?**
It will not cost you any money to be part of the research.

**Who will know that I took part in this research and learn personal information about me?**
ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:
- University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.
- The PI and faculty coordinator
- Some of Evergreen Recovery Center's staff members may know that you took part in the study, but will not have access to any of the written information you provide.

**How will you keep the information you collect about me secure?  How long will you keep it?**
Two copies of the PSAI and one copy of the PHQ questionnaire and training evaluation form will be combined in a large manila envelope that has an assigned number attached to it (e.g. 01, 02, 03…40). When you arrive at the sign-in table, you will be handed one of the envelopes with the forms included in it. After the assigned activity finishes, you will be asked to put all completed forms back in the envelope and returned to the PI before you leave the meeting room. The form you signed consenting to be a part of the study will be collected and maintained apart from the other returned materials. Everything (PSAI, PHQ, training evaluation form and signed consent) will be kept in a locked secured file drawer in the PI's office for at least 3 years. All materials associated with the study will be destroyed after 3 years.

**What if I decide I don't want to continue in this research?**
You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

**Who should I contact if I have questions?**
The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the PI by phone at 425-422-2930 Monday through Friday between 8 a.m. and 5 p.m.

If you have questions about your rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971.

**I have decided I want to take part in this research. What should I do now?**
The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights
- I have been given a copy of this consent document, and it is mine to keep.

_____

**Participant's Name (PRINT)**               **Signature**               **Date**

**Person Obtaining Informed Consent**:  I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person's questions about the research.

_____

**Person Obtaining Consent  (PRINT)**               **Signature**               **Date**

## DEMOGRAPHIC INFORMATION

Please answer the following questions. The information you provide will be used to develop prevention programs for families who are struggling with addiction-related problems. All of the information that you provide will be kept in strictest confidence and used only for its stated purpose.

**What is your gender?** Female _____Male _____ or Prefer not to say _____

**What is your age?** _____

**How many children do you have?** _____

**What are their ages?** _____

**How many of your children are currently living with you?**_____

**What is your race/ethnicity?**
- o Asian American
- o Black/African American
- o Hispanic Origin: o Cuban  o Mexican
- o Mexican American o Puerto Rican or other: o Spanish
- o Hispanic o Latino
- o Native American
- o White
- o Other_____
- o

**How much time do you spend on the Internet on a daily basis that is not related to work?**
- o None
- o 15 minutes - 2 hours
- o 2 - 4 hours
- o 4 - 6 hours o
- o 6 -10 hours
- o Over 10 hours per day

**What is your favorite activity to do on the Internet?**
- o  Surfing the web to find information
- o  Video gaming
- o  Gambling
- o  Viewing adult themed websites
- o  On social networking sites, such as: Facebook, Twitter, LinkedIn YouTube or Tumblr
- o  Shopping
- o  Other things
- o  No favorite

**How comfortable are you with using online technology?**
- o  Very Comfortable
- o  Moderately Comfortable
- o  Mildly Comfortable
- o  Somewhat uncomfortable
- o  Very Uncomfortable
- o  Do not use at all

**What is the highest level of education you have completed?**
- o  Less than 8th Grade
- o  Some High School
- o  High School Graduate
- o  Some College
- o  Associates of Arts Degree
- o  Technical Vocational Training
- o  College Degree
- o  Post Graduate

**What is your employment status?**
- o  Full time employed (40 Hours)
- o  Part time (20 Hours or less)
- o  Not employed
- o  Looking for work
- o  Retired

**What is your total monthly income?**
- o  $0-500
- o  $501-1000
- o  $1001-1500
- o  $1501-2000
- o  $2001-3000
- o  More than $3000

**What is your drug of choice?**
- Alcohol
- Cocaine
- Heroin
- Marijuana/cannabis
- Methamphetamines
- Other

**What is the age when you first started using any substances?**
- Under 13
- 14-18
- 19-30
- 31-50
- 51 or greater

**How long have you been in recovery from substance addiction?**
- Few Days
- 30-60 Days
- 3-6 Months
- 1 year
- More than 1 year

**Have you ever been diagnosed with a physical/learning/or mental health disorder? If so, what kind?**
- ADHD/ADD
- Cognitive Impairment
- Hearing
- Learning
- Mental/Psychological
- Mobility
- Other Speech-impaired
- Vision
- None

**Are you currently receiving mental health services?**
- Yes    o No

**Are you in need of mental health services?**
- Yes    o No

*Thank you for taking the time to fill out this questionnaire. As stated earlier, all of your*

*answers will remain strictly confidential and protected.*

**Internet Mediation Seminar Evaluation Form**

Please indicate your impressions of the items listed below.

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|---|---|---|---|---|
| 1. The seminar met my expectations. | ○ | ○ | ○ | ○ | ○ |
| 2. I will be able to apply the knowledge learned. | ○ | ○ | ○ | ○ | ○ |
| 3. Seminar objectives were identified and followed. | ○ | ○ | ○ | ○ | ○ |
| 4. The content was organized and easy to follow. | ○ | ○ | ○ | ○ | ○ |
| 5. The materials distributed were pertinent and useful. | ○ | ○ | ○ | ○ | ○ |
| 6. The presenter was knowledgeable. | ○ | ○ | ○ | ○ | ○ |
| 7. The quality of instruction was good. | ○ | ○ | ○ | ○ | ○ |
| 8. The presenter met articulated objectives. | ○ | ○ | ○ | ○ | ○ |
| 9. Audience participation and interaction were encouraged. | ○ | ○ | ○ | ○ | ○ |
| 10. Adequate time was provided for questions and discussion. | ○ | ○ | ○ | ○ | ○ |

11. How do you rate the awareness seminar overall?

| Excellent | Good | Average | Poor | Very poor |
|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ |

10. What aspects of could be improved?

11. Other comments?

THANK YOU FOR YOUR PARTICIPATION

**Parental Self-Appraisal Inventory**

This questionnaire is designed to help us gain a better understanding of the kinds of things that make it difficult for parents to influence their children's technology use. Please indicate your opinion about each of the statements below by circling the appropriate number. Your answers will be kept strictly confidential and you will not be identified.

*\* The use of child/children in the wording of questions below refers to any individual between the ages of 0-18.*

**1. How confident are you that you can talk to your child about what they like to do online?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**2. How much can you do to set up weekly schedule when all family members screen technology devices are turned off?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**3. How confident are you that you can have weekly meal times together with your family members?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**4. How confident are you that you can help your son or daughter to get exercise every day?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**5. How much can you do to control your child's sleep habits?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**6. How much can you do to set up rules/expectations for your families Internet technology use?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**7. How much can you do to keep screen technology out of your child's bedroom?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**8. How confident are you that you can teach your children about limiting how much information they post about themselves-online?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**9. How much can you do to get your child/adolescent to play a game or do something fun that does not require screen technology devices?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**10. How confident are you that you can be a positive role model for your children on how to limit how much time they spend using screen online technology?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**11. How much can you do to keep from giving in to your child's demands to have access to screen technology devices when you are busy doing other things?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**12. How much can you do to keep fighting between family members from getting out of hand?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**13. How confident are you that you can teach your child about what Internet addiction is?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**14. How well can you keep track of what your child is doing online?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**15. How well can you talk to your child about why it is not okay to view adult-themed websites or use video games rated for mature audiences?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**16. How well can you get your child to put a time limit on their technology use?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**17. How confident are you that you can take away your child/adolescent's use of online devices, if caught breaking family rules established for the use of it?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**18. How much can you do to teach your child about managing stress?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**19. How much can you do to help your child learn healthier ways to express their anger?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Nothing | | Very little | | Some Influence | | Quite a Bit | | A Great Deal | |

**20. How much can you do to help your child deal with sadness?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Nothing | | Very little | | Some Influence | | Quite a Bit | | A Great Deal | |

**21. How well can you find help to improve your knowledge about the different types of online technology that your children/adolescents are using?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**22. How much can you talk to your primary care provider about concerns you may have about your child/adolescents use of online technology?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**23. How much can you do to ask your child's teacher/school counselor about organizing a parent meeting to discuss effective parenting practices to oversee youth Internet technology use?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**24. How well can you access parental monitoring systems for your children's online activities?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**25. How well can you access a resource to get information about identifying youth problematic Internet use?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**26. How well can you connect with fellow parents/friends to get support to remain in control of your child's technology use?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**27. How well can you access treatment for Internet addiction?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**28. How much can you go online to the Entertainment Software Rating Board website to find out the content ratings for video games or mobile apps that your children/adolescent are using?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**29. How well can you access US Federal Government website/resources set up to help families and individual's stay safe, secure and responsible online?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**30. How much can you do to find help for your family if conflict and communication difficulties become ongoing problem?**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|----|
| Not at all | | Very little | | Some what | | Quite a Bit | | A Great Deal | |

**Thank you for taking the time to complete this questionnaire. Please remember that all of your answers will remain confidential.**

Slide 1

**Effective Parenting for the Digital Age:**

**How to Help Our Children Maintain Balance in a Wired World**

Presented by
Mary Schatz, MA, CDP, CRC, LMHC

Slide 2

## Presentation Goals

★ Discuss role technology plays in young people's lives today;
★ Highlight which youth are at highest risk for compulsive Internet use;
★ Review recommended media guidelines for parents to maximize youth health and well-being;
★ Discuss resources for youth suspected of having a problem with Internet Addiction;
★ Questions/Comments

Slide 3

## Days Gone By

Slide 4



**New Era**

Slide 5

**Current Times**
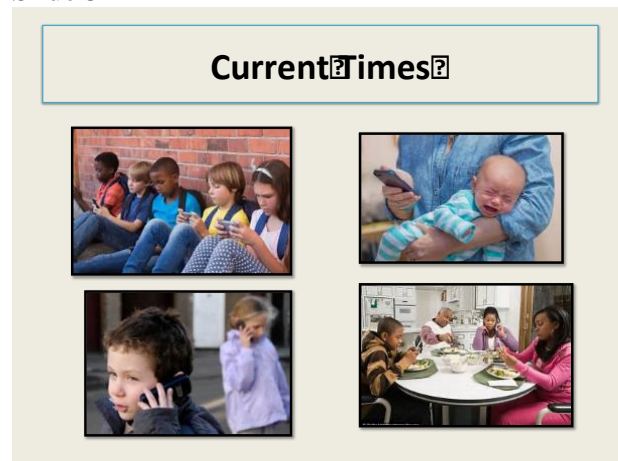


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Why Technology Use Is
**<u>Not</u>** Going Away?

**Teens have tech-saturated lives:**

- 92% of teens (13-17 years of age) report going online daily

- 24% of teens report going online almost constantly

- Nearly 75% have smartphones (up 28% in 1 year), 30% have basic phone and only 12% say they have no cell phone at all.

(Pew Research Center, 2015)

Slide 7

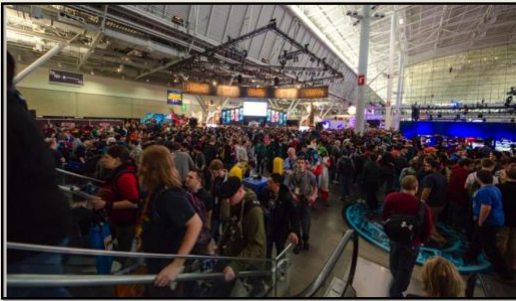## Why Technology Use Is <u>**Not**</u> Going Away?

**81% of teens use social networking sites:**

- 71% use Facebook

- 41% use Snapchat

- 33% use Twitter (Up 9% in 1 year)

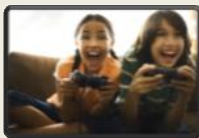- 52% use Instagram (Up 27% in 1 year)

(Pew Research Center, 2015)

Slide 8

## PAX PRIME 2014



Slide 9

## Positive Aspects

- Internet can increase social & global connectedness (Rye, 2013);
- Video games are positive addition to health & educational trainings (Kato, 2010);
- Increases sense of independence and capability in youth (Shen, Liu & Wang, 2013).

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**Positive Aspects**

- Some video games involve pro-social themes of love, heroism, honor, sacrifice, bravery & teamwork.

- Video games and social networking can increase mental health and well-being in youth.



Slide 11

**Positive Aspects**

- Video game playing enhances visual spatial skills which are related to math abilities.

- Video gamers have been shown to outperform non-gamers on a number of visual and spatial tasks, demonstrating faster reaction times and improved focus.

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Slide 13

## Why Parents Should Be Concerned

- Spending too much time online effects ability to read social cues.

- Early use (6 months or earlier) predicts lower cognitive and language development by age 14 months.

- Video game playing associated with less time spent outdoors.

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## Research from Past
## Two Decades on Internet Use

**Excessive social networking and game playing are associated with:**

- Less physical activity

- Greater de-sensitivity to violence & aggressive behavior

- Higher levels of dis-engagement from society

- Less time spent on pro-social activities and academic tasks

(Yu, Kim & Hay, 2013)

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## Other Possible Negative Effects

Ads for unhealthy foods now seen online via search engines, social networking sites and virtual world.

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**Other Possible Negative Effects**

- Exposure to adult themed content or sites that encourage unhealthy behaviors, such as pro-anorexia, suicidal ideation, substance abuse or gambling



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**Other Possible Negative Effects**

Cyber-bullying, sexting & texting while driving



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**Other Possible Negative Effects**

**Risk for Internet Addiction**

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## Internet Addiction

- First identified in late 1990's by Goldberg, Young and Griffiths;

- Identification was modeled after pathological gambling criteria;

- Confusion and controversy surround what to call it and whether it truly even exists.

(Kuss, Griffiths & Billieux, 2014)

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## Internet Addiction

**Currently:**

American Psychiatric Association (APA) listed **Internet Gaming Disorder (IGD)** in the appendix of 2013 published edition of their Diagnostic and Statistical Manual of Mental Disorders(DSM-5).

This is the section entitled: **Conditions for Further Study**

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## Internet Addiction

**IGD includes 9 criteria**:

- Thinking about doing gaming all of the time
- Withdrawal when not able to do it for span of time (i.e., irritability, anxiety)
- Tolerance
- Loss of control
- Continued use despite awareness of problems resulting from gaming

- Loss of interest in past recreational activities
- Used to escape and/or modify mood
- Engages in deceptive practices regarding amount of time spent gaming
- Risks relational, educational or employment responsibilities to continue gaming

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## Internet Addiction

- ◆ Research & treatment professionals still lack agreement on best methods to identify (assessment practices) and treat the problem effectively.
- ◆ Recommended prevention strategies consistently involve teaching parents to effectively intervene in children's use of technology.

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## Internet Addiction

**Profile of who is most at-risk has also emerged:**

- ◆ Early estimates report anywhere from 6% to 9.7% of U.S. adolescents are at risk;

- ◆ Uses Internet to satisfy certain needs such as avoiding depression, social anxiety, guilt and feeling isolated;

- ◆ Shows certain personality traits such as: low self-efficacy, being shy, difficulty dealing with stress, tendency to put things off, seeking out high risk experiences, low self control & low agreeableness;

- ◆ Starts to expect that the Internet will distract them from their problems and becomes primary method for reducing negative emotions.

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## Internet Addiction

**Other factors:**

Family conflict and dissatisfaction;



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## Internet Addiction

**Can develop health problems, such as:**
- Sleep deprivation
- Depleted energy
- Obesity
- Weaken immune system
- Poorer vision
- Condition called "Nintendinitis" (inflammation of the tendons).
- Additionally, wrist, neck and elbow pain, and numbness of fingers (Carpal Tunnel Syndrome)
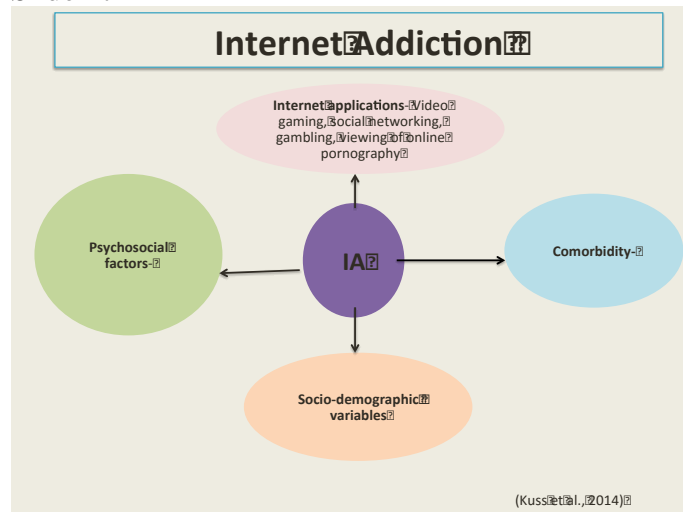
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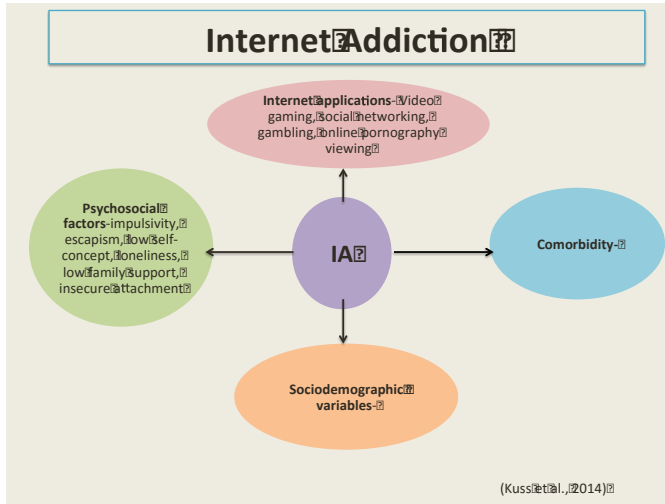## Internet Addiction

**Video game addiction is associated with:**
- ❖ Increased attention and executive functioning problems
- ❖ Poorer school performance
- ❖ Relationship problems
- ❖ Depression & social anxiety

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## Internet Addiction
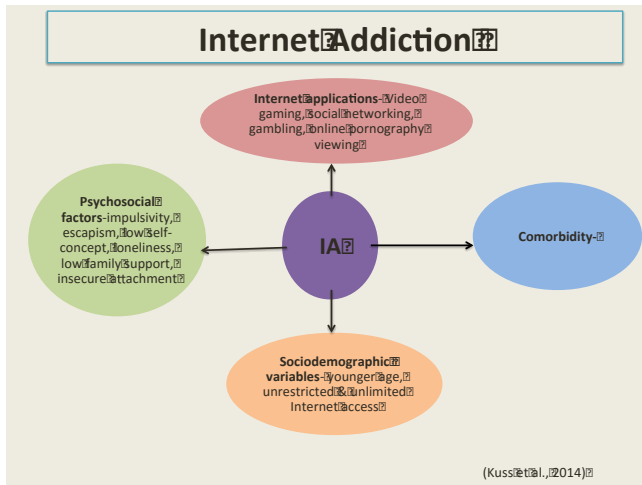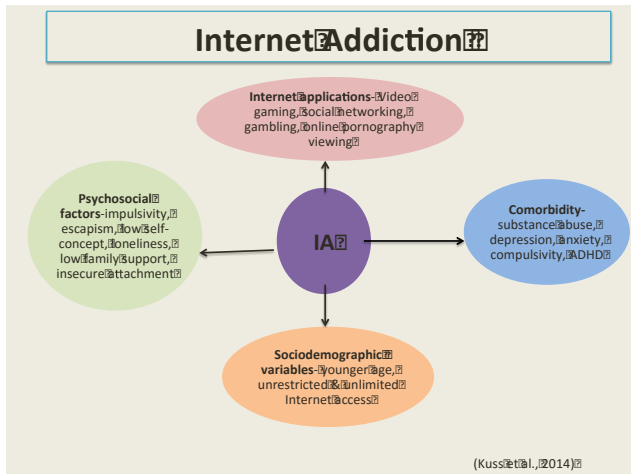


**Internet applications-** Video gaming, social networking, gambling, viewing of online pornography

**Psychosocial factors-**

**IA**

**Comorbidity-**

**Socio-demographic variables**

(Kuss et al., 2014)

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## Parenting in Digital Age

**Communication is Key** –

**Parenting style**-

· **Neglectful**- neither warm nor demanding
· **Authoritarian**- demanding, but not warm
· **Permissive**-warm, but not demanding
· **Authoritative**- balance between responsiveness and demandingness

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## Parenting in Digital Age

**Taking Breaks from tech use**: allows youth to get perspective & opportunities for independent thought to figure out who they are.



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## Parenting in Digital Age

**Reality Checks**: listen to what they are saying when they may not even be aware they are saying anything. Provide opportunities to support open dialogue between them and you.

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## Parenting in Digital Age

**Friending** our youth on social media and checking on them every now and then can open up opportunities for discussion.



She Met Him on the Internet...
He said He Lived in a Gated Community

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## Parenting in Digital Age

**Taking interest** in the video games they play or playing along with them gives insight into their world.



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## Something to Consider

How many of you have rules in place regarding your families use of online technology?

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## Parenting in Digital Age

**Excess screen time usage was associated with:**

❖ Having a TV in a child's bedroom

❖ No rules about technology use

❖ Having less than 4 family meals together per week

❖ Researchers have also found that screen time exposure was negatively related to frequency of physical activity.

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## Parenting in Digital Age

Encourage thoughtful actions as purchasers, role models and as consumers of media advertising and products in our everyday lives.

**What does this exactly mean?**

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## Effective Parental Mediation of Youth Online Technology Use

Dissertation Project of Mary Schatz, MA, CDP, CRC, LMHC
Under the Direction of Dr. Stephen Leierer, Dissertation Chair

Through East Carolina University
Department of Addictions and Rehabilitation Studies
College of Allied Health Sciences
Produced on June 17, 2017

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## Online Parent Resources

| Website | Description |
|---|---|
| **Common Sense Media**<br>Website: https://www.commonsensemedia.org<br>https://www.commonsensemedia.org/social-media | Offer developmentally age-appropriate, unbiased information to help parents decide what media are right for their family. |
| **Cyberwise**<br>Website: http://www.cyberwise.org/parents | Site set up to help parents and educators understand digital citizenship, online safety and privacy, reputation management and more in order to help kids use technology safely and wisely. |
| **Entertainment Software Rating Board**<br>Website: http://www.esrb.org | Non-profit self-regulatory body that independently assigns age and content ratings for video games and mobile apps so parents can make informed choices. Enforces advertising guidelines adopted by the video game industry and helps companies implement responsible online and mobile practices under "Privacy Certified Programs". |
| **Healthychildren.org**<br>Website:<br>https://www.healthychildren.org/english/family-life/media/pages/default.aspx | American Academy of Pediatrics resource for parents |
| **OnGuardOnline.gov**<br>Website:<br>https://www.consumer.ftc.gov/features/feature-0038-onguardonline | Federal government's website to help U.S. citizens to be safe, secure and responsible online. Has resources to help parents reduce online risks through online toolkits and tips based on developmental ages of youth. |
| **The Center on Media and Child Health**<br>Website: http://www.cmch.tv | Academic research center whose mission is to educate and empower children and parents to consume media in ways that increase health children's health and development. |

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## Create a Family Media & Tech Plan

According to Common Sense Media (2016)- "There is no one size fits all answer.  A healthy media diet balances 3 things: **what kids do, how much time they spend doing it and whether their content is age-appropriate**.  Mixing media and tech time with other activities will help families find that happy medium".




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## IA Treatment Programs

| Name | Type of Intervention | Program Length | Estimated Cost |
|---|---|---|---|
| **Bradford Regional Medical Center**- Bradford, PA *Internet Addiction Program* | Structured group and individual therapy and detoxification from electronic media involuntary secured (locked) hospital unit. | 10 days | $14,000 |
| **Camp Grounded**- Mendocino, CA | Outdoor summer camp with no technology devices allowed | Held over a weekend | Sliding scale starting at $495 |
| **Outback Therapeutic Expeditions**- Lehi, UT | Adolescent-focused mixture of mental health & outdoor wilderness program | 8-10 weeks | $25,000-$30,000 |
| **reStart- Center for Digital Technology Sustainability**- Fall City, WA | Young adult (primarily male) retreat program located in wilderness setting.  Modeled after traditional treatment programs, including 12-Step Support Group attendance | 8-12 Weeks | A little over $30,000 * Has special financing option or needs based scholarships |
| **reStart adolescent program-"Serenity Mountain"**- Sultan, WA | Adolescent care for youth ages 13-18.  Uses integrated youth and family treatment approach | 8-12 weeks | See above |

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## Resources

reStart -1001 290th Ave SE, Fall City, WA 98024
(425) 417-1715
http://www.netaddictionrecovery.com/

Ann Steel, MD http://www.steelcounseling.com/

Anna DiNoto, PsyD, LMHC
https://annascaps.wordpress.com/

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## Recommended Guidelines for Media Use

| Developmental Age | How Much? | Non-violent TV | Handheld devices | Non-violent video games | Violent video games | Online violent video games and or pornography |
|---|---|---|---|---|---|---|
| 0-2 years | none | never | never | never | never | never |
| 3-5 years | 1 hour/day | ✓ | never | never | never | never |
| 6-12 years | 2 hours/day | ✓ | never | never | never | never |
| 13-18 years | 2 hours/day | ✓ | ✓ | limit to 30 minutes/day | | never |

Please contact Cris Rowan at info@zonein.ca for additional information. © Zone'in February 22, 2014

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## Interesting Website

https://www.youtube.com/channel/UCK_U9XLgCTUqcjuTNvNyYBA

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## Questions/Comments



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## References

References available upon request

APPENDIX M: Written Description of Role Play Video

**Scene:** Youth is viewing computer screen as his parent walks into the bedroom.

**Parent asks child**: "Whatcha doing?"

**Child**: "My homework."

**Parent**: "Take a break, it's time for dinner."

**Child**: "Okay"

**Scene:** After dinner, at the table.

**Parent**:  "I want to change how we use our computer and cell phones. It's important that we establish guidelines for what is acceptable use of online technology in order for us to develop healthy habits now. "

**Child**: "Please mom! No!"

**Parent**: "Hold on, hear me out. I am talking about rules for when technology is allowed and when it should be turned off; in our home and when we're visiting relatives. Rules about what are acceptable web sites, apps and/or video games for you to play or have access to. Plus, where technology devices are allowed in our home."

**Child**: " Oh no! What does that mean?"

**Parent**: "It means that we will be taking all electronic devices from your bedroom and only allowing use of them in a central spot in our home. Maybe the living room or at the dining room table, when we're not eating."

**Child**: " Please mom, don't do that. I like having the computer in my bedroom because I can play video games with my friends, without having to be quiet. And anytime I want."

**Parent**: "We can come up with a plan for when you can play video games with your friends and be as loud as you want to. We can both agree on certain days of the week when you can do it as

much as you want. I will go somewhere else, so you can enjoy yourself without worry. I know that video games are important to you and your friends."

**Child**: "Really mom?  I am not happy about it. But, at least I am not banned from playing. Like my friend Beaver, his parents won't let him play at all; he plays whenever they aren't home or at a friend's house. At least you understand how important playing is for me."

**Scene:** See mom bending down to kiss Rutherford on top of his head. Rutherford makes a face.

**Scene:** Later on, Parent is on the phone.

**Parent**: "…I know Martha but, the training I attended was pretty convincing. It is important to make these changes for his well-being. Using screens before bedtime is causing concerns among doctors and other experts in children's health services. I have learned that children who have access to TV's or computer screens, and even cell phones in their bedrooms are having their sleep habits affected. Even to a point where it impacts their ability to perform properly in school. There are other concerns as well…"

**Scene fades**

<div align="center">

**Video Ends**

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