Computer Addiction in Adolescents and Young Adults, Solutions for Moderating and Motivating for Success

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The Dangerous World of Personal Computers

- Media attention to MySpace and Pedophiles
  - News reports of abductions, murders linked to MySpace
  - Stepped up Law Enforcement Entrapment
    - "To Catch a Predator…n"
      Dateline NBC - Perverted-Justice.com
- Larger, more widespread, but less discussed problem:
  Excessive Computer Use and Addiction
  - Lowered Academic Performance
  - Game play - Social Isolation, Depression
  - Online socialization: exposure to deviant peers
  - Health problems
    - Repetitive Stress Injury, obesity, vision problems, sleep
  - Family Conflict

2002: My Introduction to Computer Addiction

- Two 15 y/o males referred by sheriff's department
- One attempted to strangle mother with power cord when she unplugged the computer to get him off
- One stabbed brother with kitchen knife when he would not get up from computer to let him play
- No history of mental illness or behavior problems
  - Teens denied addiction and were resistant to counseling
  - Both placed on involuntary psychiatric holds.
  - Cycles of abstinence, behavior contracting did not help cure the addiction or motivation positive change
  - Attempts to help parents reestablish parental authority failed
- Limited success with these clients led me to search for effective treatment methods. Mostly non-specific methods were identified
  - Conducted research and nationwide survey of mental health professionals in 2003/2004

Computer Addiction Research / Press

- Very little research, some sensationalized press
- Controversial since 1989 - does it really exist?
    - Symptom of other disorders or distinct disorder?
    - Blame? - Game Developers vs. Parents
    - Addictive Personality (blames genetics)
    - Behavior addictions? Most problematic uses, computer is simply the vehicle (sexual, email/chat, gambling)
- Diagnosis - protocols borrowed from gambling or SA
- Treatment - No standard of care

My 2003 / 2004 Survey of Mental Health Professionals

- Survey Results: 5000 MD, Psych, MFT (n=229)
  - Clinicians mixed 50/50: >clients seen,> believe it is a distinct disorder
  - Clinicians saw 3 clients/yr, avg, 0.66 (11-17)
  - On average, 50% knew someone personally
  - Gaming: #1 endorsed problematic use 11-17 y/o
- Further research
  - Prevalence: 0.6 - 6% of computer users
  - On-line support groups for gamers
  - Gaming addiction popularized in press
  - No published treatment protocols

Computer Addiction Treatment Methods

- Psychotherapy (CBT) - (45%)

- Family / marital Counseling (34%)

- Behavior Therapy (33%)

- Medication (32%) 11% respondents were psychiatrists

- Abstinence - take away the computer, game (18%)
  - Most intuitive solution - highest risk solution for many

- 12 step programs, on-line, gameaholics anon (18%)

- Controlled Use (moderation) (17%)
  - Most often endorsed by specialists in computer/internet addiction

- Parent Counseling (15%)

- Social Skills Training (12%)

- Addiction Counseling (11%)

- Control / Monitoring Software - (8%)

MMORPG: New Addiction Risk

Massively Multi-player On-line Role Playing Game

•Everquest ("Evercrack") - adults

• World of Warcraft ("Warcrack")

•Second Life, Maple Story

How Big of a Problem?

- >2 Million US subscribers to <u>World of Warcraft</u> alone
- Many new games emerging, some targeting younger children
- MMORPG Survey (Yee, 2002)
  - Players report playing 23 hours per week <u>*on average*</u>.
  - 50% of players self-report being "addicted"
  - 70% report having played 10+ hours straight
  - 18% report playing on-line caused them financial, health, relational or work problems
  - Younger the player, greater self-report of addiction
- On-line limits imposed by government of China

MMORPG Research

I have tried to quit the game but was unsuccessful.
N male = 2760, N female = 406
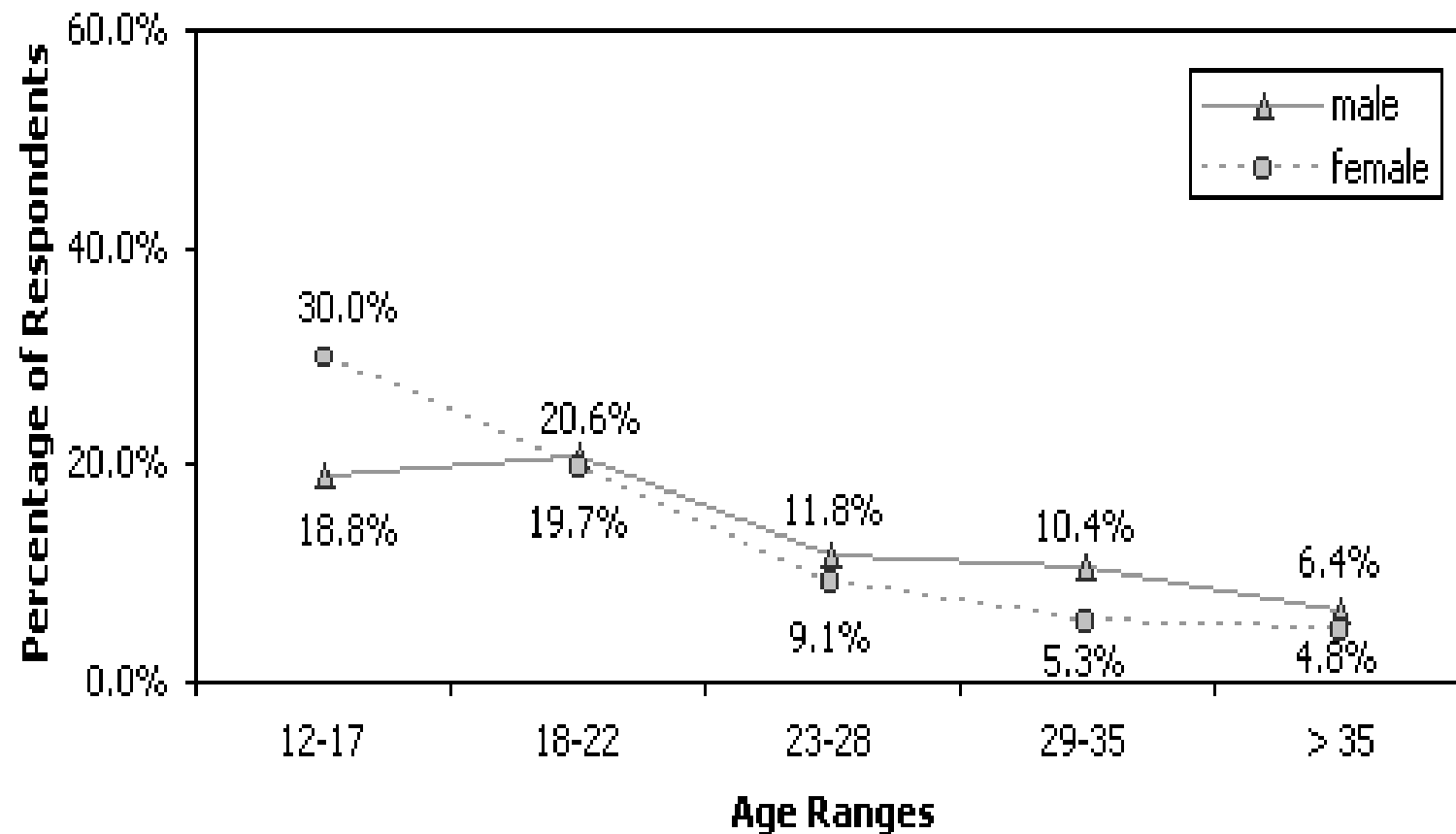
Yee, 2002

Is this a Computer Gaming Addict?

- Lies or in denial about use - claims 30 hours, actual 60+
- Does not believe he has a problem
- Stays up late, sneaks game play in the middle of the night
- Has trouble getting up in the morning to go to school
- Has become isolated, withdrawn from this real world friends
- Previously an honor student, now failing some classes
- Constant arguments with parents, siblings about computer
- Repetitive stress injuries due to excess use
- Poor or declining hygiene
- Spends time on-line researching game related items
- Parents failed attempts to limit use, removing computer
- Does not use other substances: "at least he is not using drugs"

NIDA Definition of Addiction

Addiction

A state in which an organism engages in a compulsive behavior

- behavior is reinforcing (rewarding or pleasurable)

- loss of control in limiting intake
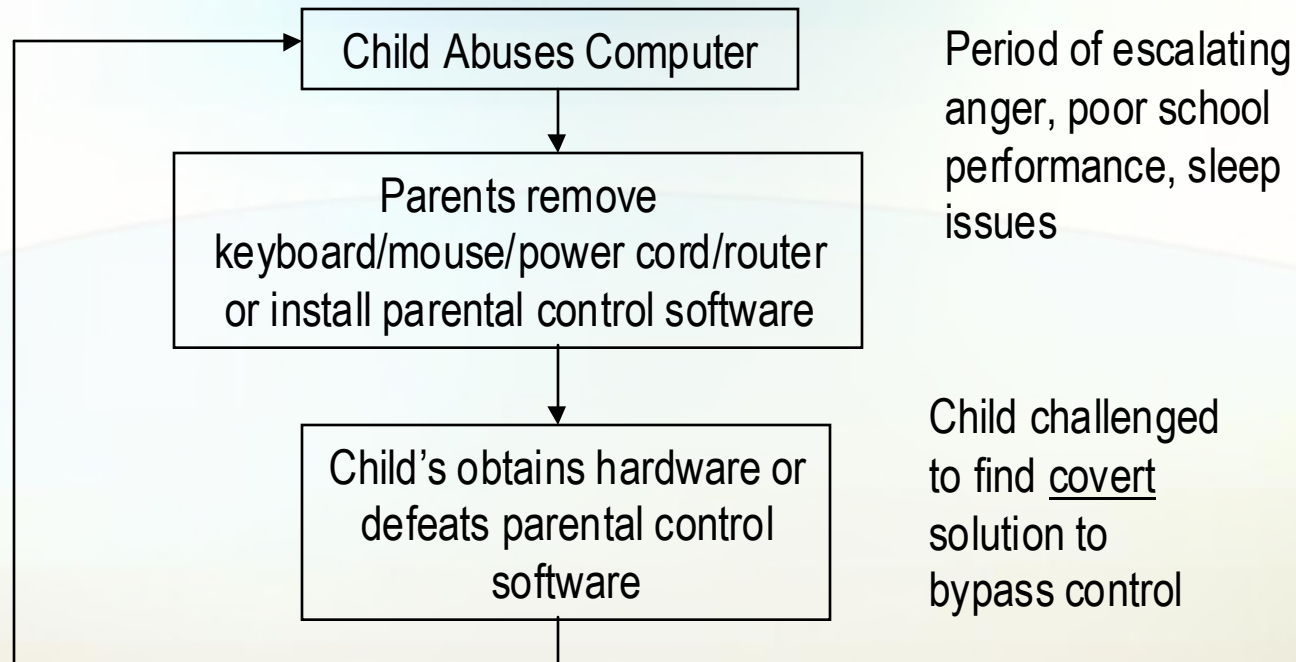
How Does One Become Addicted? Patterns

- Increasing game play, starts with a few hours, evolves to most if not all available free time
  - Baby sitter, low cost entertainment
  - "At least he is not going out and getting into trouble"
- Increasing social and guild involvement and responsibility to guild members - > play, > rewards (loot)
  - Raids, increasing participation points
- Weekend play binges - 12hrs+ / day
- Decreasing real life social involvement
  - Play commitments often 7 days a week
- Increasing effort made to manage lifestyle
  - Do minimum in school, sports, etc.
  - Work around WOW or other parental controls

Parenting Problem? Yes, but parents lack tools

- Parents have no experience in dealing with this
  - Typically lower risk (30%) children affected
  - Weak or ineffective parental controls (WOW, Vista, S/W)
- Relatives, friends have lots of advice: "Just take away the computer!", "Why can't you control your kid?"
- Shame prevents parents from seeking professional help
  - <u>Early intervention critical to minimizing impact</u>
- Professional advice can be conflicting and confusing
- Treatment options often not reasonable (I don't advise) to parents:
  - Remove computer, treat with anti-depressants
  - Send shy, anxious teen away to a therapeutic boarding school, wilderness program
- Technical divide presents challenges
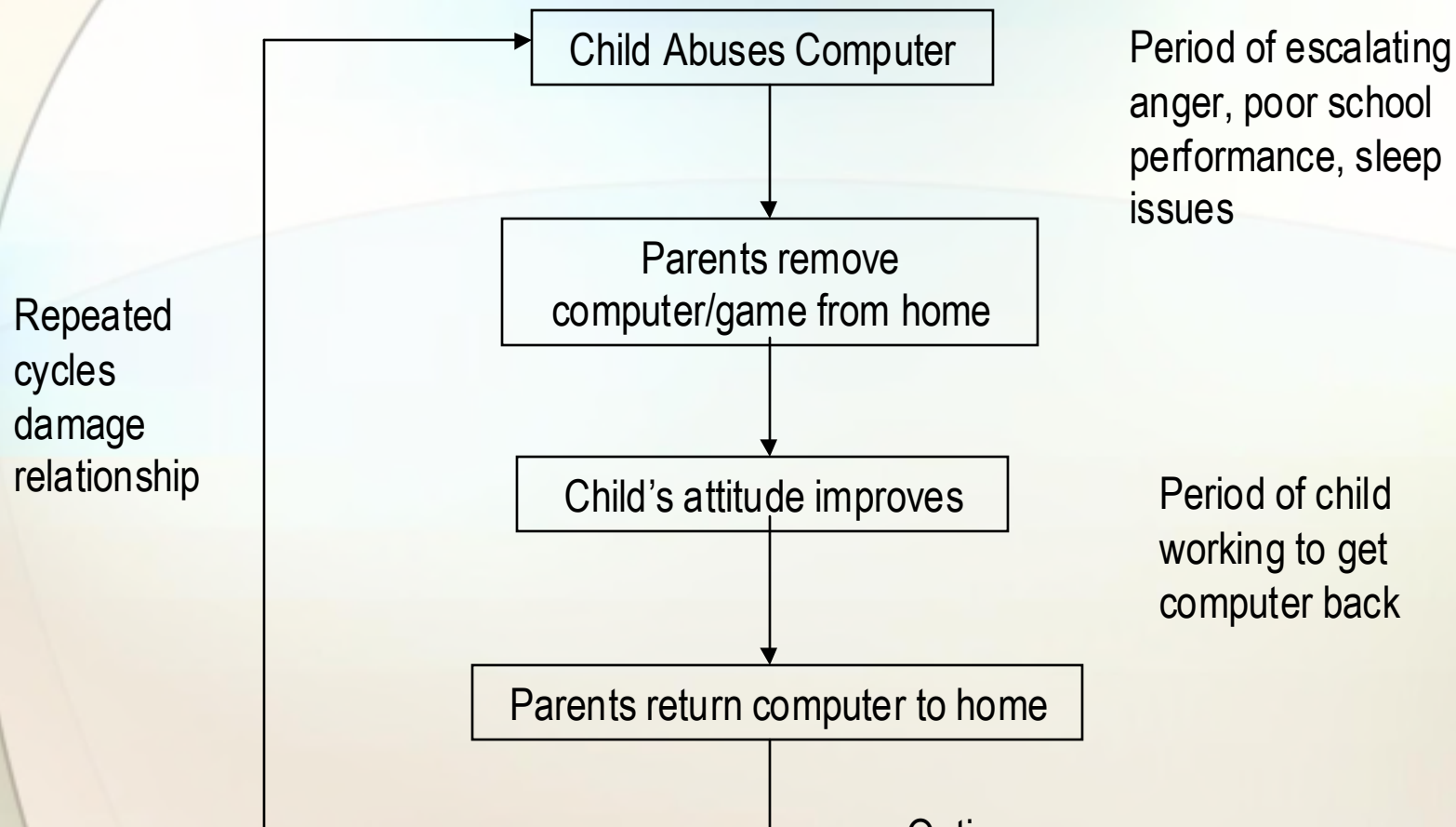
Parents Attempts at Controlling Excesses

Repeated cycles damage relationship

Child Abuses Computer

Parents remove keyboard/mouse/power cord/router or install parental control software

Child's obtains hardware or defeats parental control software

Period of escalating anger, poor school performance, sleep issues

Child challenged to find covert solution to bypass control

Options:
1. Parents give up
2. Remove computer from home
3. Seek professional tx

Abstinence / Relapse Cycle

Child Abuses Computer

Period of escalating anger, poor school performance, sleep issues

Parents remove computer/game from home

Repeated cycles damage relationship

Child's attitude improves

Period of child working to get computer back

Parents return computer to home

Options:
1. Give up
2. Remove computer longer term
3. Seek professional tx

Parent-Adolescent Power Struggle

Child Abuses Computer

↓

Parent removes computer/game

↓

Parent demands child's performance improves as condition to return computer

↓

Child demands computer as condition for school improvement or attendance

Longer term cycle
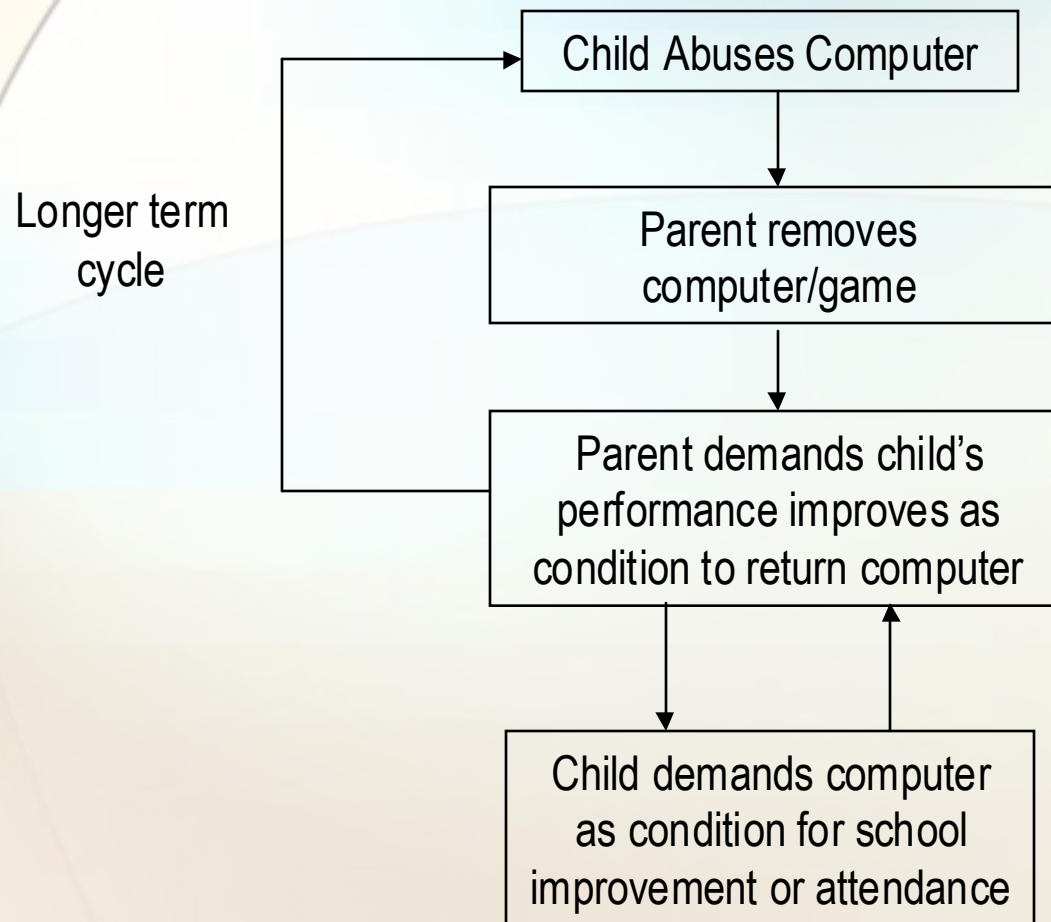
Period of escalating anger, poor school performance, sleep issues. Parents finally have had enough! Sometimes this is encouraged by mental health professionals.

Period of parents and child locked in power struggle

Options:
1. Give up
2. Seek (new) professional tx
3. Send child to RTC
4. Better options?

Behavioral Addictions:
Similar to Substance Addictions

Addictive Behaviors

<u>Sum</u> of Learning
Reward Pathway

Life's Rewards

Gambling
Computer Gaming
Eating/food
Relationships
Shopping
Sexual

>Dopamine burst:
>Novelty
>Excitement
>Pleasure
>Reinforcement
>Meaning

Academics
Athletics
Career
Relationships
Success
Spirituality

Behavioral Addiction: Computer Gaming

- Experiencing rewards of game play causes significant activation of the reward pathway - PET scans observed

    - Importance or reward within the game / peers

    - Novelty of reward

- Adolescents, young adults sensitive to reward system stimulus due to brain development

    - Mastery, Success Identity, Autonomy

- Games are designed to be compelling (addicting)

    - Behavioral psychology used - reinforcement schedules

    - Subscription model - no end to play

- More play time & greater rewards = greater reinforcement

- Competing reward systems (real world)

Theory of Computer Gaming Addiction:

- *An individual becomes addicted to computer gaming when, as a result of game play, <u>sufficient</u> rewards are applied in <u>sufficient</u> quantity through a <u>sufficient</u> schedule of reinforcement.*

    - This theory considers that a net combination of *individual differences* (genetics, developmental characteristics and life experiences), *competing/complementary* reward systems within the individual's environment and the *net effects of the game's reward system* determine who gets addicted and who does not.

    - Similar to other addictions, we can assume relationships between the risk of addiction and 1) amount of play (> play= > risk), 2) age of onset of play (< age of onset = > risk) and 3) game design qualities (> reward system, > risk)

Science of Addiction Treatment

- Addiction is a disease where the reward pathway has been hijacked
  - Repeated application of a substance or rewarding behavior
  - Dopamine - level and speed of rise determines reward "learning"
  - Craving driven by mesolimbic "learning"
- Treatment involves NEW learning, not discontinuance
  - No unlearning - Memory and learning accomplished through neural connections. Connections may fade but are not undone
  - New learning (connections) mediate and supplant old information. "Extinction" - **Abstinence does not cure addiction**
    - AA, NA - new meaning in life, higher power, helping others
    - Block substance's effect on the reward system (Naltrexone)
    - Reduce the rewards of game play?
      - Drug to block natural rewards to cure behavioral addictions?

Implications for Treatment: Altering the Reward System

- Cannot directly change the game's reward system, but indirectly we can change the rewards through the amount of game play:

  - Participation points - more you play, greater loot

    - Modest reduction dramatically reduces opportunity to gain rewards and status

    - Continued play with reduced rewards = new learning

  - Social rewards

    - Reduction in available computer time = significant reduction in available pre and post activity socializing

Implications for Treatment:
Unique to Gaming: Leverage the Addiction

- Game may be greatest single motivator in child's life:

  - Make play contingent on completing other day-to-day responsibilities and non-play activities

  - Start slow and increase non-game activities over time

- Stop complementary rewards

  - Magazine subscriptions, new computer equipment, etc.

- Competing responsibilities/activities should offer their own rewards:

  - Social, academic, employment, athletic

- Behavioral intervention has face validity

  - Game play is a behavioral intervention

Treatment of Gaming Addiction: Clinical Assessment

- Game play's effect on academics or employment

- Game play's effect on relationships

- Self report of amount of play - increasing?

- Types of play - games, chat ,etc. and level of involvement

- Others report of amount of play

- Feelings associated with play and when not playing

- Time spent thinking or planning computer play

- Attempts to limit or stop use - by self or others

- Depression, anxiety, loss of sleep

- Health related problems such as repetitive stress injuries
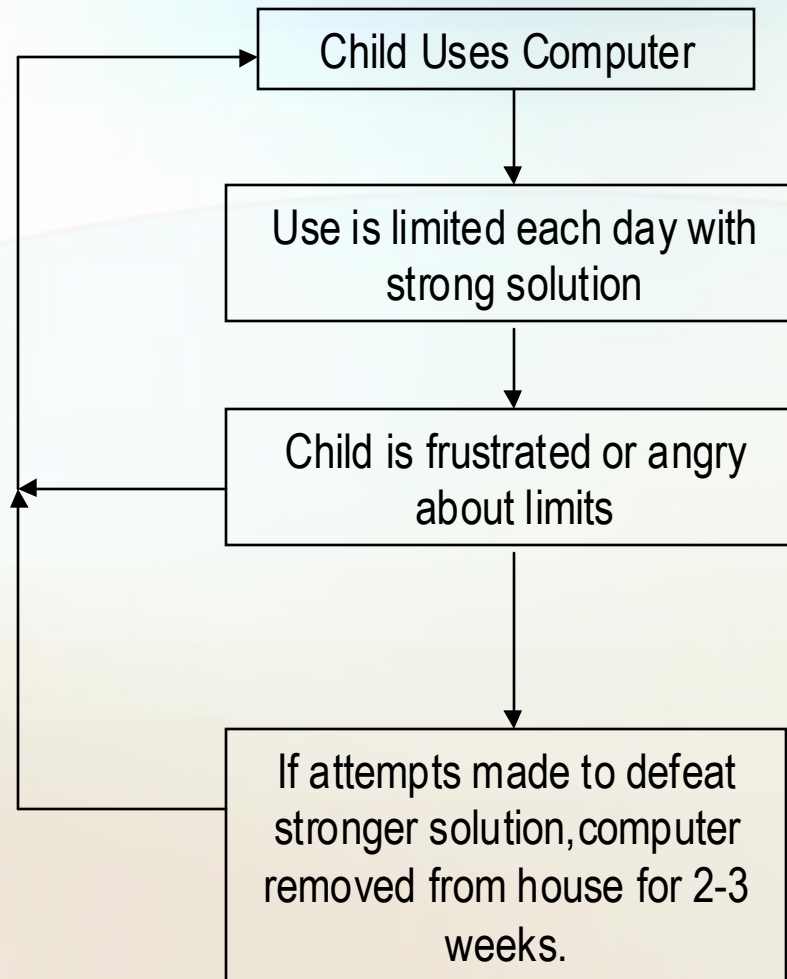
Outpatient Treatment of Gaming Addiction Behavioral Treatment Protocol

- **Identify the actual amount of play time and impact**

  - Confront denial, personal responsibility

- **Reduce the amount of play time to agreed upon levels**

  - Reduces the indirect reward from play - participation points

  - Reduce the amount of pseudo-play time

  - Reduces social rewards from game play

  - Increase sleep, positive health impact

  - Gradual or rapid decrease as needed

- **Increase positive, pro-social activities and rewards**

  - Improvements in school, work, relationships = greater satisfaction

  - Counseling, academic, career guidance, goal setting

- **Use game as reward for participation in competing activities**

  - Premack principle

- **Medical and psychotherapeutic treatment of depression/anxiety**

Moderating Use: Daily Struggle

Repeated daily cycles + real world rewards

= addiction broken

Longer term cycle (rarely happens more than once)

Child Uses Computer

Use is limited each day with strong solution

Child is frustrated or angry about limits

If attempts made to defeat stronger solution, computer removed from house for 2-3 weeks.

Child allowed to use computer according to limits set by parents on a daily basis

Child learns to tolerate feelings of frustration. This population less likely to defeat overt solution

Child learns that overtly defeating stronger solution is costly (pay for damaged hardware)

Parenting Struggle

- Overcoming strong negative feelings

  - Able to tolerate an upset, angry child / young adult

- Overcoming child manipulation

  - This is breaking my computer, slowing it down, etc.

  - It is sending our personal information over the internet

- Dealing with parental thoughts "this is ridiculous"

  - Temptation to give up - send child to inpatient treatment

  - Treatment is counterintuitive to just taking away computer

- Guilt, fear of being considered a bad parent

  - Why did I let it get like this?"

- Marital conflict - parenting style conflict creating obstacles

  - Permissive vs. High Control

  - Anger, resentment from past conflicts

PC Moderator - Effective Tool

2006
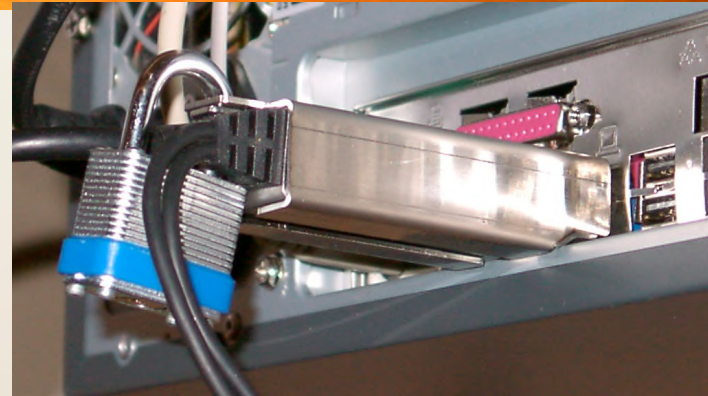
PC Moderator: Treating Computer Addiction

- External Hardware device - locks on computer

  - 18 gauge stainless steel case with hardened steel padlock

    - Cannot be removed even by opening computer case

- Works with any desktop PC with external VGA monitor

- No technical computer knowledge required

  - Setup can be done prior to installation

- Works with any operating system

  - No software installed on computer - no compatibility issues

- Feature set specifically designed to aid parents

  - Records amount of time used, by day

  - Limits set for when and for how long computer can be used

    - 8 individual users, settings by day of week, holiday settings

    - 1 minute granularity to aid in gradual time reductions

    - Allowance, Bonus time and Manual Daily Enable features

PC Moderator - Parenting Tool

- Borrowed ego strength for parents

  - Deflects anger and frustration

  - Convenient, consistent and reliable limits - to the minute

  - Accurate information about usage

  - Hack proof - child can't outsmart parents

- Less family, marital conflict

  - Agreed upon settings

  - Reduced parental anger and frustration

  - Promotes reasonable use and sharing of computer

- Use the computer as a reward for completing other responsibilities or activities

  - Manually enable use daily - improves parental monitoring

  - Bonus time to reward compliance and positive behavior

Computer Addiction and Adults

- Failed in college/university or adult child living at home
  - Return home after failing due to excessive computer use or excess computer use by adult children
  - Parents become the custodian of the PC Moderator
  - Conditions set on continued parent support
- Adult children living at home
- Spouse with a computer gaming addiction
  - Non-addicted spouse becomes the "custodian" of the device
  - Helps to build trust regarding amount of time used
- Attempts to Self Regulate computer time
  - Use PC Moderator to help self-monitoring
  - Yellow screen when past own use goals

Tip the Scales toward Real World Rewards

- Parents / Significant Others must work aggressively
  - Encourage a success identity- real life rewards
  - Work to improve family relationships - quality time
- Parents / Significant Others must be patient
  - Withdrawal can be minimized, however irritability, depression are possible temporary issues
  - Game rewards have overtaken real life rewards - it will take time for new learning
- Parents / Significant Others must be consistent
  - Stick with behavioral interventions
  - Clear message to child / significant other
- Seek professional help as needed
  - Parents may need additional professional help and encouragement
  - Therapist or medication may be required for depression, anxiety

Case Study - 17 years old

- 17 y/o male WOW Addiction

- Declining / failing grades

- School refusal began after demand for improvements

  - Parent: "2 weeks of attending school and doing h/w, get computer back"

  - Child: "Give me back computer or I won't go to school

  - 30 days later… still not in school

- Setup PC Moderator with computer time allowed for attending school, even part day

  - 1 hour school= 1/2 hour computer time

- Back in school full time within 1 week

  - Limits set to daily (2 hours) and weekend (5 hours) use and contingent on doing h/w each weekday

Case Study - 19 years old

- 19 y/o male WOW addiction, 91 hrs/week maximum

- Failed college

  - Attended 1 year at local university

  - Dropped out and moved back home.

  - Failed first term at local community college

- Set conditions for continued financial support by parents

  - PC Moderator on computer

    - Parents are "custodians" of the device

    - PC Moderator helped with denial and negotiated limits

  - Reasonable use limits 3 hrs/day + weekend = 25 hrs/week

  - Attend local college, successfully passing courses

- Enrolled in college, passed first courses, got job and was successful at balancing work, school and fun within 4 months

Going Forward:
Prevention and Early Intervention

- Parent education
  - Parent handouts, parent meeting and technology education
    - Limit daily use, use built-in parental controls where possible
- School / Education at-risk identification
  - Middle, high school and college/university
    - At-risk evaluation
  - Educators, school counselors and consultants
- Health professionals
  - Primary care physicians, psychiatry, psychology, MFT/counselors
  - Agreed upon assessment (DSM V?) and validated treatment methods
- Gaming industry - promote responsible entertainment

Credits / References / Resources

- Denizet-Lewis (2006). An Anti-addiction pill? New York Times, Retrieved from http://www.nytimes.com/2006/25/magazine/25addiction.html

- Kem. L. (2005). Gamer addiction: A threat to student success! What advisors need to know. *NACADA Clearinghouse of Academic* http://www.nacada.ksu.edu/Clearinghouse/AdvisingIssues/Gamer-Addiction.htm

- NIDA (2007) The Science of Addiction. Retrieved from: http://www.nida.nih.gov/scienceofaddiction/

- Southpark - Comedy Central, Season 10, "Make Love, Not Warcraft"

- Woog, K. (2006) How tech savvy teens defeat parental controls http://www.pcmoderator.com/wooglabs3_018.htm

- Woog, K. (2004) A survey of mental health professionals clinical exposure to problematic computer use. http://www.pcmoderator.com/research.pdf

- Yee, N. (2002) Ariadne - Understanding MMORPG Addiction, retrieved from http://www.nickyee.com/hub/addiction/home.html

- **This presentation online @ www.wooglabs.com**

Brief Biography

Dr. Woog is Associate Director of Pepperdine University's Youth Services Program, a community based graduate psychology training program working with children, adolescents and their families. He is a licensed clinical psychologist with a specialty in addictive and problematic computer use and maintains a private practice in San Clemente, California. He is also founder of Woog Laboratories, Inc., manufacturer of the PC Moderator, a parental control hardware device to help moderate excess computer use in teens and young adults. Besides having two masters and a doctorate in psychology, Dr. Woog also has a BS in Electrical and Electronics Engineering and has extensive computer science and technology experience. He has developed a behavioral treatment protocol using the PC Moderator and consults with parents and clinicians on its use. It has been successfully used as a behavioral intervention component in treating computer addiction in adolescents and young adults.

Dr. Woog and the PC Moderator have appeared on television and cited in numerous publications. In 2006, the PC Moderator received PC Magazine's Editor's Choice Award.