EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

Prof. Iver Hand, M.D.
Content:

• Definitions of “addiction”
• Neuroimaging of the reward-system
• Psychological criticism of the addiction-(abstinence) model
• Motivation for behavioral excess disorders: positive and negative reinforcement
• Behavioral and drug treatments for behavioral excess disorders: A multimodal (motivational) analysis- and treatment model
• Behavioral and addiction treatments: outcome with Problem-/Pathological Gamblers

Conclusion: Excessive behaviors are not “addictions”- but: many drug addictions may start as “neuroses”
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

DEFINITIONS OF “ADDICTION”
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
LABELLING AND DIAGNOSING

WHEN NORMAL BEHAVIORS TURN EXCESSIVE (I)

When cleaning, ordering, shopping, gambling, sexual or sport activities etc. become excessive and lead to suffering of the individual and/or his social surrounding, mental health professionals will classify them in quite different ways, e.g.:

PROBLEM BEHAVIORS ➔ PATHOLOGICAL BEHAVIORS
(Dimensional approach)

PATHOLOGICAL BEHAVIORS

- Impulse Control Disorder
- Obsessive-Compulsive Spectrum Disorders
- Behavioral Excess Disorders
  (mostly in psychiatric services)
- Substance Independent Addictions
- Behavioral Addictions
  (mostly in addiction services)

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LABELLING AND DIAGNOSING

WHEN NORMAL BEHAVIORS TURN EXCESSIVE (II)

But:

**Excessive behaviors** - even within one class of behavior, like gambling - are extremely heterogeneous with regard to **causes**, **maintaining variables**, **long-term courses**, and **(professional) help needed**.

We will therefore now investigate the **usefulness of these types of labels**, exemplarily in Problem- and Pathological Gambling (PG).
Some Definitions of Addiction

Addiction is a **chronic brain disorder** with uncontrollable search for and consumption of drugs....it is a **medical disorder**.....**medications** can reverse the pathology of the disease. (Lukas, McLean Hospital, in Time 2007)

Addiction is a **chronic, relapsing brain disorder** to be managed with all tools at medicine’s disposal (NIDA experts in Newsweek 23.02.008)…In 10 years we will be **treating** addictions as a disease.. **with medicine** (N.Volkov, director of NIDA, in Newsweek, 2008)

Addiction is the **inability to resist temptation**.  
(Coggan and Davis, 1988)

Addiction is a **disorder of the will**  
(Valverde, 1998)
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

NEUROIMAGING OF THE REWARD - SYSTEM
The Reward System:

- **Is activated by** e.g.: „Drugs“; Pleasurable behaviors; Looking at beautiful faces; Listening to music etc.

- **Is based on the interaction** between different areas of the brain, which process rewarding (and punishing!) stimuli and trigger cognitive-emotional and behavioral reactions. And vice versa!

- Responses are **gender-specific**.

- **Responses probably are different** in gamblers (shoppers etc.) with **positive** as compared to **negative reinforcement**, and with regard to psychiatric **comorbidities**.

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The speaker's co-authored misinterpretation of brain imaging results:

• „... a decreased activation of the ventral striatum,..., and decreased VMPFC activation... favours the view, that pathological gambling is a non-substance related addiction“ (Reuter et al., Nature Neuroscience, 2005)

• The reviewers of the journal judged this interpretation as a new scientific finding. Hand's early objections to this exclusive interpretation had not persuaded the other authors to skip it.

• Hand's dissenting hypotheses were presented at the EASG conference in Malmö, 2005, and are published in the internet publication of that conference.
The “Reward Deficiency Syndrome” (RDS) and some strange conclusions:

- **One quarter of the population** is not able to enjoy personal activities in their everyday life. Reason is a **genetic fault** leading to “dopamine hunger“ (Blum et al., 1996).

- “Dopamine hunger“ is the **cause for** most of the **neurotic** and self-destructive **behaviors** (Blum et al., 1996).

- This individual and social **problems** will be **resolved through „genetic engineering“** (Carter, 1999).

- **Question**: Which model of man is behind such a claim?
Future research on the Reward System (Abler, Erhard & Walter, 2005)

- A great diversity of **very different stimuli trigger the same pathways** in the brain.
- The **results of brain imaging studies** must be **integrated** into a **psychological model of motivation**. Such a model has to comprise learning from the connections between behavior and reward, as well as positive emotions and the motivation to act („wanting“).
- The **decisive attribute of an addiction** is not a positive dopamine induced excitement („liking“), but the **anticipation of a reward** („wanting“). A lot of addicts take their drugs without „liking“!
- Therefore we have to study, **which kind of reward leads to „wanting“ without „liking“?**

Speaker's hypothesis: **Negative reinforcement!**
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

PSYCHOLOGICAL CRITICISM OF THE ADDICTION - (ABSTINENCE) MODEL
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
CRITICISM OF THE ADDICTION-ABSTINENCE PARADIGM

„Addiction-abstinence behavior“ – A reasonable goal in treatment of „behavioral addictions“?

I. CONSEQUENCES OF „ABSTINENCE IN „SUBSTANCE-INDEPENDENT ADDICTIONS“

• „Craving for food“ ---> Death of the individual
• „Sex addiction“ ---> Death of the species
• „Workaholism“ ---> Death of the society
• „shopping addiction“ ---> collapse of economy

II. CONSEQUENCES OF „SELF-CONTROL“ OF THE PREFERRED BEHAVIOR

• The controlled behavior remains the preferred behavior ---> relapse
• „Self control“ is subject to external control in published studies (by therapist, relatives) ---> relapse

III. CONSEQUENCES OF „EXTERNAL-CONTROL“ OF THE PREFERRED BEHAVIOR?

• „Voluntarily“ (because of guilty feelings and social pressure) accepted external control ---> relapse

• “Pressure produces counter-pressure” – the healthier the individual the more applicable is this „reactance“-model of Brehm ---> relapse

• External Control of a behavior (e.g. gambling) leads to external control of other behaviors. („Where were you, since when ?“) ---> reactance ---> relapse

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ADDICTION AND DEPRIVATION

“Craving” symptoms
(e.g. G. Meyer)

- Reluctance
- Touchiness
- Sleep disturbances
- Nightmares

- Sweating
- Trembling
- Agitation
- Uneasiness

Question: Symptoms of Addiction or Anxiety/Depression?
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

MOTIVATION FOR BEHAVIORAL EXCESS DISORDERS: NEGATIVE AND POSITIVE REINFORCEMENT
**EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS**

**MOTIVATION FOR BEHAVIORAL EXCESSES**

Positive and Negative Reinforcement in “Social Gambling”

<table>
<thead>
<tr>
<th>Positive reinforcement</th>
<th>Negative reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectation of wins</td>
<td>50,5%</td>
</tr>
<tr>
<td>For entertainment</td>
<td>33,4%</td>
</tr>
<tr>
<td>To have fun</td>
<td>18,4%</td>
</tr>
<tr>
<td>Out of curiosity</td>
<td>10,6%</td>
</tr>
<tr>
<td>Because of liking</td>
<td>4,1%</td>
</tr>
<tr>
<td>As a hobby</td>
<td>3,6%</td>
</tr>
<tr>
<td>For distraction</td>
<td>41,1%</td>
</tr>
</tbody>
</table>

**WAGER survey USA (1998):**
Telephone interviews of 937 „social“ gamblers
Positive and Negative Reinforcement (PG): Gender differences

<table>
<thead>
<tr>
<th>Positive reinforcement</th>
<th>male</th>
<th>female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expectation of wins</td>
<td>42,0%</td>
<td>21,7%</td>
</tr>
<tr>
<td>For entertainment</td>
<td>29,5%</td>
<td>0,0%</td>
</tr>
<tr>
<td>To have fun</td>
<td>22,6%</td>
<td>0,0%</td>
</tr>
</tbody>
</table>

(94,1%) (21,7%)

<table>
<thead>
<tr>
<th>Negative reinforcement</th>
<th>male</th>
<th>female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction of stress</td>
<td>18,4%</td>
<td>24,6%</td>
</tr>
<tr>
<td>Reduction of boredom</td>
<td>0,0%</td>
<td>36,5%</td>
</tr>
<tr>
<td>Avoidance of loneliness</td>
<td>0,0%</td>
<td>31,3%</td>
</tr>
<tr>
<td>Reduction of anxiety</td>
<td>0,0%</td>
<td>12,2%</td>
</tr>
</tbody>
</table>

(18,4%) (104,6%)

ARI Survey, Australia (1996):
Telephone interviews with 234 Problem Gamblers

Note: In both surveys multiple answers were possible
Comparison of these “latin” (american and european) results with those from the USA/ New Zealand:

• Same result with female gamblers
• A lot more men are gambling to avoid negative emotions „escape gamblers“ (negative reinforcement)
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BEHAVIORAL AND DRUG TREATMENTS FOR BEHAVIORAL EXCESS DISORDERS: A MULTIMODAL (MOTIVATIONAL) ANALYSIS- AND TREATMENT MODEL
### Behavioral - and functional analyses

<table>
<thead>
<tr>
<th><strong>SOCIAL GAMBLING</strong></th>
<th><strong>PROBLEM GAMBLING</strong></th>
<th><strong>“PATHOLOGICAL“ GAMBLING</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>C⁺ - model:</td>
<td>α⁻ - Model:</td>
<td>Pre ---&gt; Para-</td>
</tr>
<tr>
<td>Positive reinforcement</td>
<td>Negative reinforcement</td>
<td>Suicidal behavior</td>
</tr>
</tbody>
</table>

#### TO HAVE FUN
(Action orientated)

- **STIMULATION**
  - when bored

- **“NOW - ISM“**
  - Instant satisfaction of “needs”

#### MATERIALISTIC “PURPOSE IN LIFE”

- **EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS**
  - Behavior Therapy of Behavioral Excesses

#### “PATHOLOGICAL“ GAMBLING

- Pre ---> Para-
- Suicidal behavior

1. **UNCONSCIOUS SUICIDAL INTENTION** (passive avoidance)
   - **Intraindividual functions**:
     - Abreaction of self-destructive impulses
     - loosing increases “internal” pressure to “commit suicide”

2. **DESIRE TO DIE**
   - **Interpersonal functions**:
     - e.g. taking revenge on the partner (loss of his wealth)

#### “SOCIAL GAMBLING”

- Positive reinforcment

- **TO HAVE FUN**

#### “PROBLEM GAMBLING”

- Negative reinforcment

- **ESCAPISM**
  - **everyday life = “pain“**
    - Depression, anxiety, guilty feelings, ambivalence

- **Intraindividual functions**
  - Avoidance of pain and negative feelings by gambling; illusional and fairy tale like situation while gambling
  - Avoidance of “disgrace” and loosing self-confidence after loosing (chasing)

- **Interpersonal functions**:
  - Abreaction of aggressions against close others
  - provoking significant others e.g to split up

#### “PATHOLOGICAL“ GAMBLING

- **LACK OF “PURPOSE IN LIFE”**

1. **PRELUDE**
   - Para-
   - Suicidal behavior

2. **UNCONSCIOUS SUICIDAL INTENTION** (passive avoidance)
   - **Intraindividual functions**:
     - Abreaction of self-destructive impulses
     - loosing increases “internal” pressure to “commit suicide”

3. **DESIRE TO DIE**
   - **Interpersonal functions**:
     - e.g. taking revenge on the partner (loss of his wealth)
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
BEHAVIOR THERAPY OF BEHAVIORAL EXCESSES(I)

Problem directed interventions for Negative State (NEST)

- Biological Risk Factors (e.g. genetic)
- Psychiatric Disorders
- Psycho-somatic Traumata
- Developmental Deficits
- False assumptions of:
  - Own person
  - Chances / Probability to win
  - Gambling

- Magical Thinking
- Behavioral Analyses; Functional Analyses; Motivational Interviewing
- Exposure to: negative feelings, thoughts, physiology; Distress-tolerance training
- Training of: skills (e.g. social competence); alternative behaviors
- Cognitive Interventions
- Psycho-education

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Behavior Therapy: Reinforcement-specific

<table>
<thead>
<tr>
<th>TYPES OF REINFORCEMENT</th>
<th>“SYMPTOM”-INTERVENTIONS (1st Choice)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ACTION-SEEKER</td>
<td>- Modification of motivation</td>
</tr>
<tr>
<td>(Lesieur, 1988)</td>
<td>- Psycho-education about</td>
</tr>
<tr>
<td>• C⁺ (POSITIVE REINFORCEMENT)-GAMBLER</td>
<td>- chance statistics</td>
</tr>
<tr>
<td>(Hand, 1992, 1998b)</td>
<td>- psychological traps in various games</td>
</tr>
<tr>
<td>• ESCAPE-SEEKER</td>
<td>- Modification of personal misbelieves about:</td>
</tr>
<tr>
<td>(Custer u. Milt, 1985; Lesieur, 1988)</td>
<td>- gambling</td>
</tr>
<tr>
<td>• C⁻ (NEGATIVE REINFORCEMENT)-GAMBLER</td>
<td>- own personality</td>
</tr>
<tr>
<td>(Hand, 1992, 1998b)</td>
<td>- Clarification of the reasons for the switch from social to pathological gambling</td>
</tr>
<tr>
<td>• “SELF-MEDICATION” GAMBLER</td>
<td>- Training of alternative positive reinforcement strategies</td>
</tr>
<tr>
<td>(Khantzian, 2002)</td>
<td>(„CAUSAL”-INTERVENTIONS ?)</td>
</tr>
</tbody>
</table>

„CAUSAL”-INTERVENTIONS (1st Choice)
- Modification of motivation for change
- Accurate psychopathological assessment
- Detailed biographical and functional analyses
- Hierarchical, multimodal hypothesis and interventions
- Daily patient protocol about events and feelings before, during and after gambling
- Reduction of developmental deficits
- Training of alternative positive reinforcement strategies

(„SYMPTOM”-INTERVENTIONS ?)
# EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

**PHARMACOTHERAPY OF BEHAVIORAL EXCESSES**

Pharmacotherapy: Reinforcement-specific (Rosenthal, 2004)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>• C+ (POSITIVE REINFORCEMENT)-GAMBLER (Hand, 1992, 1998b)</td>
<td>• (\alpha) (NEGATIVE REINFORCEMENT)-GAMBLER (Hand, 1992, 1998b)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REINFORCEMENT-SPECIFIC DRUG TREATMENT</th>
<th>I. OPIOID-ANTAGONISTS Naltrexon Naltrexon + SSRI Nalmefen Cave: Drug-induced dysphoria/depression</th>
<th>II. ANTIDEPRESSANTS • TRICYCLICS Imipramine</th>
<th>• SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRI) Fluvoxamine; Fluoxetine; Paroxetine; Citalopram</th>
</tr>
</thead>
</table>
| • BETABLOCKER no clinical trail yet; recommendation from Rosenthal, 2004 | • MOOD STABILIZER ? Lithium; Carbamazepine; Valproate | • „MOOD STABILIZER“ | • PLACEBO ?
| • PLACEBO ! |  |  |  |
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

BEHAVIORAL AND ADDICTION TREATMENTS: OUTCOME WITH PROBLEM-/ PATHOLOGICAL GAMBLERS
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
BEHAVIOR THERAPY OUTCOME

Hamburg Follow-Up Studies (I-III) : up to 4 years after treatment

Participants
110 (68% of treated sample)

Initial interviews only
42 (38%)

Treatment (→ 15 sessions)
68 (62%)

Failure
37 (34%)

Success
73 (66%)

22 (32%)

27 (64%)

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Pathological Gamblers in Outpatient Addiction Treatment, (Sonntag u. Welsch, 2005)

Outpatient addiction treatment (program: 12 contacts in 3 month) 
N=1750-1800

Drop out rate 903

Intensity of consultation: 50% had just 2-5 contacts

Results

Treatment Participants

46% abstinent
35% much better

Drop Outs

45% abstinent or much better

TREATMENT OUTCOME
PROOF FOR ADDICTION?
Motivation for Addiction Treatment or Behavior Therapy?

Problem gamblers, who seek help in outpatient addiction units do not differ in terms of socio-economic variables from gamblers, who attend outpatient behavior therapy. (Schmidt et al., 2007, not published yet)

Outcome of short-term treatment seems to be similar in both settings.

Questions:
- How do Pathological Gamblers make their treatment choice?
- And: Does it matter?
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
Lack of treatment research

CLAIMS FOR TREATMENT RESEARCH

“Treatment is one of the most under-researched aspects of gambling disorders and consequently, there is not yet a treatment standard for the disorder”
(NCRG Annual Report, 2007 (12.7)

AND: Treatment research in PG should be done in units with experts in: psychopathology, behavioral or psychodynamic psychotherapy, and psychopharmacology!
(Hand, ever since 1984)
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

DISCUSSION
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

DISCUSSION (I)

The term “Behavioral Addiction” (BA)

is currently **helpful** for **obtaining** research and treatment **funding**

**BUT:**

It does **impede understanding, treatment and research in excessive behaviors**
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS

DISCUSSION (II)

• The **term BA is misleading from a scientific point of view**, because:
  - **No** generally accepted **definition** of “addiction”
  - **No** generally accepted “addiction” **treatment**
  - AA/GA concept of “day-by-day life long abstinence” questioned even in drug addiction, **inapplicable** in excessive normal behaviors
  - **Chronic course** of PG **exception** rather than the rule
  - The **symptoms of “withdrawal”** are typically **those of anxiety / depression**
  - Most often mentioned “**cause**” for PG is “**self-medication**” in unbearable emotional-physiological-mental states
  - The **highest risk factor** for problem gamblers **to become pathological gamblers** is **Negative Emotional State** *(NEST, Hand, 2002)* prior to problem gambling *(Major Depression, Bipolar Disorder, and lifetime alcohol dependence as additional risk factors.)*
    *(LaPlante et al., 2008)*
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
PROBLEMS WITH THE “ADDICTION” LABEL

DISCUSSION (III)

- Good recovery from different short-term treatments
- Modern “addiction treatments” (e.g. Harvard Univ.; D. Jacobs) are actually psychodynamic-behavioral treatments
- And what happens to pathological gamblers in addiction units that do not apply the Harvard or Jacobs or a similar approach?
- Modern behavioral treatments (symptomatic and/or causal) are similarly successful for excessive behaviors as they are in many “neurotic” disorders. But, to establish motivation for change is as difficult as in obsessive compulsive disorder!

QUESTION:
Do “neuroses” treatments become “addiction” treatments when successfully applied to excessive (drug independent) behaviors in addiction units? Or, should those addiction units better be re-labelled “neuroses” units?

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EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
FUNCTIONS OF THE “ADDICTION” LABEL

DISCUSSION (IV)

• The “Addiction” label - even more than the “pathology” label - does de-motivate those in need for help (but not yet “on the bottom”) to search for and accept it.

WHY IS IT SO MUCH EASIER TO AQUIRE SUBSTANCIAL FUNDING FOR RESEARCH AND TREATMENT IN “ADDICTIONS” THAN IN OTHER PSYCHO-BIOLOGICAL HEALTH PROBLEMS (that are not less painful and costly for sufferers and society)

???
EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS
BEHAVIOR THERAPY AND AA / GA

AND JUST AS A REMINDER:

Bill W., founder of AA in 1935,

• Suffered from Social Phobia
• Used alcohol to reduce suffering ("self-medication"!!!)
• Developed abuse of alcohol, as Social Phobia got worse
• There was no Behavior Therapy:
  Neither for Social Phobia nor for “self-medication”
• Founded Alcoholics Anonymous
• Stopped alcohol abuse
• Improved Social Phobia (by founding and attending AA group settings)

Question:

With Behavior Therapy around in the 1930s - No Alcoholics Anonymous?
(Would have been really bad for substance addicts - but for pathological gamblers?)
Some References:


HAND I. (2004). Negative und positive Verstärkung bei pathologischen Glücksspielen: Ihre mögliche Bedeutung für die Theorie und Therapie von Zwangsspektrumsstörungen. Verhaltenstherapie; 14 (2): 133-144. (Includes papers on behavior therapy, outcome in pathological gambling, trichotillomania, kleptomania, pathological shopping - each with english summary and extensive international references). Free access via


EXCESSIVE BEHAVIORS ARE NOT ADDICTIONS!

THANK YOU FOR YOUR ATTENTION