



VIRTUAL REALITY IN THE TREATMENT OF PATHOLOGICAL GAMBLING

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VR for pathological gambling

Summary:

- Rationale for the use of VR in the application of cue exposure in pathological gambling.
- Gambling study design.
- Clinical protocol: VR treatment program.
- Preliminary data.
- Practical Demonstration of the use of VR for pathological gambling.

RATIONALE

DSM-IV

- Pathological gambling (five or more):
 - Preoccupied with gambling.
 - Needs to gamble with increasing money amounts to achieve excitement.
 - Repeated unsuccessful efforts to control or stop.
 - Restless or irritable when attempting to stop.
 - Gambling as a way of escaping from problems or relieving distress.
 - After losing often returns to get even.
 - Lies to family, therapists or others about the extent of involvement with gambling.
 - Has committed illegal acts to finance gambling.
 - Has jeopardized or lost a significant relationship, job, or educational opportunity because of gambling.
 - Relies on others to provide money to relieve desperate financial situation caused by gambling.

RATIONALE

Pathological gambling

- **Prevalence** (The Gambling Impact and Behavior Study, 1999 in USA; Becoña, 1996 in Spain; Ladouceur, 1996 in Canada) : **Between 1 and 2 %.**
- **Sex ratio: 30-35% women.**
- **Higher rates in younger adults aged 30-35.**

RATIONALE

Psychosocial treatments

- Multicomponents programs:
 - *Cognitive restructuring.*
 - *Cue Exposure.*
 - *Problem solving skills.*
 - *Coping skills.*
 - *Social skills.*
 - *Relapse prevention.*

(Bujold et al., 1994; Hodgins et al., 2001; Ladouceur et al., 2001)

RATIONALE

Psychosocial treatments

Our aim:

*To use Virtual Reality to apply
EXPOSURE in the treatment of
pathological gambling.*

RATIONALE

ADVANTAGES OF VR FOR THE TREATMENT OF PATHOLOGICAL GAMBLING:

1. Offers the patient the security of being able to work with risky situations without actually being there, without actually gamble.
2. Allows to approach and practice in different contexts without leaving the consultation room.
3. Allows a more accurate gradation of the exposure hierarchy.
4. Assures confidentiality.

RATIONALE

EMPIRICAL SUPPORT FROM THE STUDY OF VR AND ADDICTIONS:

VR ELICITS CRAVING SYMPTOMS
APPLICATION: CUE EXPOSURE TREATMENT

For example:

Kuntze et al. (2001)

Lee et al. (2003)

Bornick et al. (2004)

GAMBLING STUDY

VR PROGRAM FOR THE TREATMENT OF PATHOLOGICAL GAMBLING

STUDY DESIGN:

PHASE 1. Design and tuning of the software, and the assessment and treatment protocols.

PHASE 2. Case series 

PHASE 3. Clinical trial: Two groups. Pre-treatment, post-treatment, follow-up.

TREATMENT AS USUAL

Multicomponent cognitive-behavioral program.

Exposure is conducted in vivo

VR TREATMENT PROGRAM

Multicomponent cognitive-behavioral program.

Exposure is conducted using VR.

GAMBLING STUDY

ASSESSMENT MEASURES:

Directly related to pathological gambling:

South Oaks Gambling Screen (SOGS, Lesieur & Blume, 1987).

Thoughts related to Gambling Inventory (Echeburúa y Báez, 1994).

Likert-type scales (0-10): Urge to gamble, belief in irrational thoughts.

Other measures:

Beck Depression Inventory (BDI, Beck et al., 1961).

Spielberger State-Trait Anxiety Inventory (STAI, Spielberger et al., 1970).

Self-esteem scale (Rosenberg, 1965).

Brief Alcoholism Questionnaire (Feuerlein, 1976).

Impairment Questionnaire (Echeburúa, Corral & Fernández-Montalvo, 2000).

CLINICAL PROTOCOL

VR PROGRAM FOR THE TREATMENT OF PATHOLOGICAL GAMBLING:

- Cognitive-behavioral treatment program.
- Adapted from: (Fernández-Montalvo & Echeburúa, 1997; Ladouceur, 2001).
- Components:
 - Education about the problem.
 - Stimulus control.
 - VR cue exposure.
 - Cognitive restructuring.
 - Relapse prevention.
- Number of sessions: 6

CLINICAL PROTOCOL

VR ENVIRONMENTS: PATHOLOGICAL GAMBLING

FOUR environments:

The Gambling Area

The Bar

The Bingo

The Casino



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Gambling area: Composed of two streets: 12th street where the patient can walk; and 42nd street that has access to the bar, bingo, and casino lounges.



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Bar: Inside the bar the patient is able to move around freely.



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Bar: Where the patient can interact with the slot machine.



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Bingo: Where the patient can interact with situations related with playing bingo.



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Casino: Where the patient can interact with situations at the casino: buying chips...



CLINICAL PROTOCOL

VR ENVIRONMENTS

The Casino: Where the patient can interact with situations at the casino: playing roulette.



CLINICAL PROTOCOL

VR ENVIRONMENTS:

THERAPEUTIC TOOLS:

The Thermometers: 4 bars representing money, family problems, personal problems and work related problems. The bars change in proportion to the amount of money. The colour of the sky also varies as the problems vary.



CLINICAL PROTOCOL

VR ENVIRONMENTS

THERAPEUTIC TOOLS:

The Beneficiary of gambling: It is possible to take the patient to experience an animated sequence where he/she is shown who benefits from gambling.



CLINICAL PROTOCOL

VR ENVIRONMENTS

THERAPEUTIC TOOLS:

Who loses with gambling: It is possible to take the patient to experience an animated sequence about how he/she is seriously damaged by gambling.



GAMBLING STUDY

VR PROGRAM FOR PATHOLOGICAL GAMBLING

Case series:

Participants:

N = 3 males with ages between 35 and 57 years

Diagnosis (DSM-IV): Pathological gambling (slot machines)

Comorbidity: Alcohol abuse

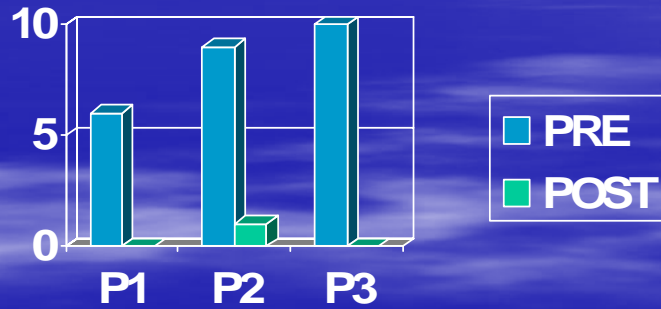
Irrational thoughts:

- "When there has been several bets and no prize that means the prize is about to come out"
- "If I win is because of my ability to play"

GAMBLING STUDY
VR PROGRAM FOR PATHOLOGICAL
GAMBLING

RESULTS:

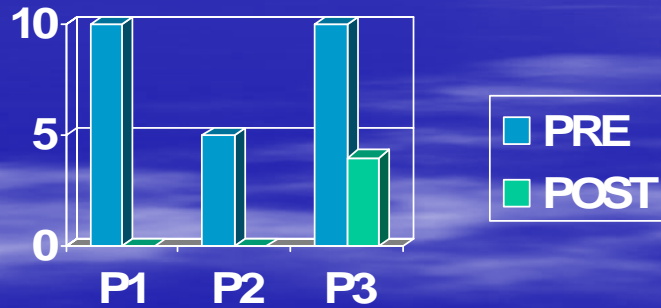
Urge to gamble



GAMBLING STUDY
VR PROGRAM FOR PATHOLOGICAL
GAMBLING

RESULTS:

Belief in irrational thoughts



GAMBLING STUDY

VR PROGRAM FOR PATHOLOGICAL GAMBLING

CONCLUSIONS:

The virtual environments activate the urge to gamble in the patients.

The Virtual exposure program is being effective in overcoming the urge to gamble.

The VR program allows also to practice other therapeutic strategies (cognitive restructuring, coping skills).

The VR system would therefore appear to be useful from a therapeutic perspective.

DEMO



DEMONSTRATION OF THE USE
OF OUR VR EXPOSURE
PROGRAM FOR THE
TREATMENT OF
PATHOLOGICAL GAMBLING

Treatment of Pathological Gambling with Virtual Reality



CYBERTHERAPY
2006

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