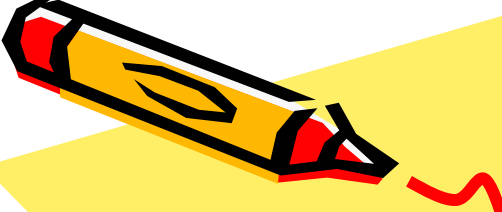




CYBERTHERAPY 2007
Washington DC June 12-14



Virtual Reality for the
application of psychological
treatments in children:
darkness phobia

C. Botella, N. Lasso de la Vega, D. Castilla, A. García-Palacios,
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DARKNESS PHOBIA

- One of the most prevalent phobias in children: 2,3%
- Important impairment in the child's life, affecting academic, family and social functioning.



DARKNESS PHOBIA

TREATMENT

- CBT: combining exposure and coping skills.
- Emotive imagery (Lazarus & Abramovitz, 1979)



DARKNESS PHOBIA

TREATMENT

- Emotive imagery: adaptation of systematic desensitization. The relaxation as inhibitory response to anxiety is substituted by a story that evokes positive emotions (happiness, feeling proud, etc.)



DARKNESS PHOBIA

TREATMENT

Emotive imagery:

Mendez (1986): "emotive dramatization":

- gradual in vivo exposure to the phobic stimuli
- modelling of brave behaviors,
- reinforcement.

This program has demonstrated to be effective (Mendez, 2004).



DARKNESS PHOBIA

VIRTUAL REALITY

VR Exposure: Efficacy demonstrated in the treatment of phobias in a wide number of studies.



HOWEVER:

VR EXPOSURE HAS BEEN APPLIED MOSTLY TO ADULTS



DARKNESS PHOBIA

VIRTUAL REALITY

- VR can be a useful tool for the treatment of phobias in children.
- VR offers a protected environment where the child can be exposed to the phobic stimuli gradually.
- VR is an attractive tool that can help to enhance motivation.
- VR can help to reduce and to reduce treatment refusals of drop outs given that the patient is not confronting the real situations.
- VR can help to overcome some of the limitations of imaginal exposure in children (attention focus).
- VR is also a versatile technology that can be incorporated in the already existing treatment programs to enhance their effectiveness and the child's motivation to be involved in therapy.



DARKNESS PHOBIA

THE AIM OF THIS WORK

TO EXPLORE THE UTILITY OF VR TO
DELIVER EMOTIVE IMAGERY IN A
CASE OF DARKNESS PHOBIA



DARKNESS PHOBIA

PARTICIPANT:

9-year-old boy

Mother reports he has been afraid of darkness since he was very little.

Fear of being kidnapped by thieves or monsters
After the death of his uncle the phobia become worse

"If I die I won't have light and everything will be dark"

Impairment: Problems sleeping alone;
difficulties going camping, fear and distress.



DARKNESS PHOBIA

ASSESSMENT:

Diagnostic Interview: DSM-IV-TR criteria for specific phobia.

Behavioral Avoidance test: Being in a dark room for up to 3 minutes: Score from 0 (refuses to enter the room) to 16 (stay 3 minutes with no anxiety).

Fear and Avoidance Scales: 0-5 regarding four target behaviors.

PRE- TREATMENT
POST-TREATMENT
3-MONTH FOLLOW-UP



TREATMENT GOALS

TARGET BEHAVIORS:

1. Go to sleep with the light off
2. Go to sleep without a torch under the pillow
3. Do not switch on the light when waking up during the night
4. Stay alone in a dark room awake

ASSOCIATED THOUGHTS:

"A thief/monster will enter by the window and something bad will happen to me"



TREATMENT GOALS

TREATMENT PROGRAM:

Adaptation of Mendez (1986) emotive imagery program using VR (adaptive display: EMMA):

- Building exposure hierarchy.
- The boy chooses a superhero.
- The therapist design narratives to enhance the motivation of the patient and the occurrence of positive emotions to counteract anxiety.
- Social and material Reinforcement.



TREATMENT GOALS

TREATMENT PROGRAM:

VR program:

Adaptive display: EMMA

Developed in the EU Project: "Engaging media for mental health applications" (IST-2001-39192-EMMA)

Different scenarios with different possibilities (weather, time, music, objects, pictures, videos, personal items, etc.)



TREATMENT GOALS

TREATMENT PROGRAM:

HARDWARE:

PC 1. Pentium IV 3 GHz. 1 GB Ram. 60 GB.
NVIDIA GeForce FX 5500.

Lan 10/100. Sound Card 7.1

PC2: Pentium II 400 Hz. 256 Ram. 20 GB.
Lan 10/100

Videoprojector SVGA, 1500 lumens.

Altavoces 2.1. 40W

Pad wireles

Big screen (5 mm) 2,50 x 1,80 m

SOFTWARE: Brainstorm eStudio,



TREATMENT GOALS

TREATMENT PROGRAM:

SESSION 1 AND 2: PSICOEDUCATION

SESSION 4 TO 7: **VR EMOTIVE IMAGERY**

SESSION 8 TO 10: IN VIVO EXPOSURE

SESSION 11: RELAPSE PREVENTION



VIDEO



RESULTS

BEHAVIORAL AVOIDANCE TEST

Instrument	PRE	POST	3-month FU
BAT	3,50	14	16

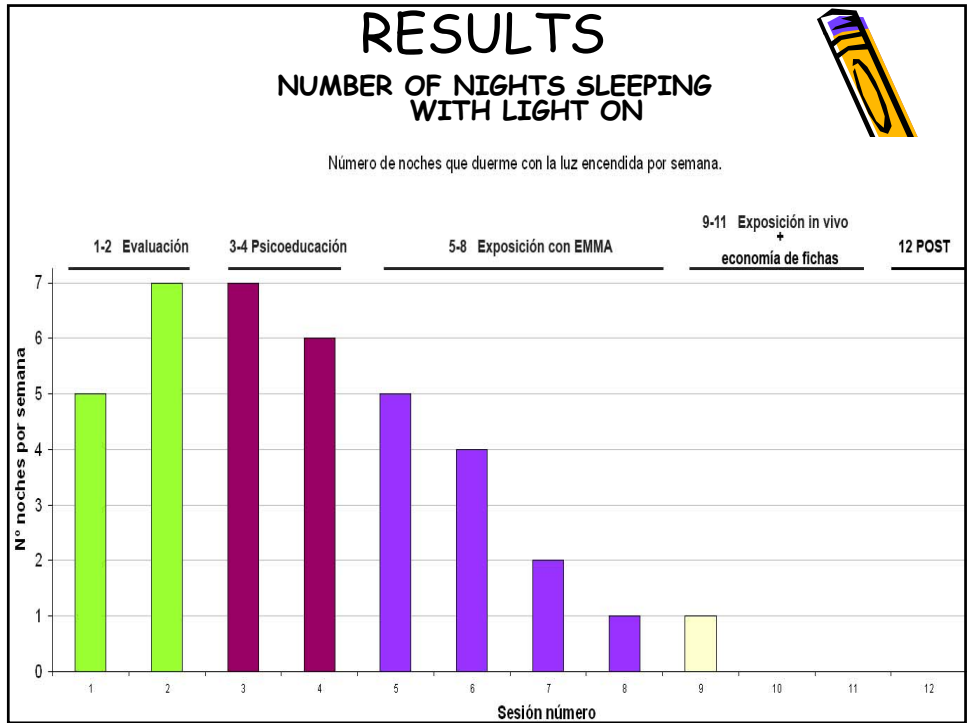


RESULTS

TARGET BEHAVIORS AND ASSOCIATED THOUGHTS

TARGET BEHAVIOR	PRE		POST and FU			
	FEAR	AVOIDANCE	FEAR	AVOIDANCE	FEAR	AVOIDANCE
1	5	5	0	0	0	0
2	4	5	2	0	2	0
3	4	4	0	0	0	0
4	4	3	0	0	0	0
NEGATIVE THOUGHT	DEGREE OF BELIEF					
	PRE		POST	FU		
1	4		0	0		
2	3		0	0		
3	4		0	0		
4	4		0	0		





RESULTS

SATISFACTION (0-5 SCALES)

	POST	FU
How much would you recommend this treatment to a friend who had the same problem?	4	3
How much did this treatment help you to overcome to fear of darkness?	4	5
How aversive was the treatment?	0	0
How much did you like to use the computer program during the treatment?	3	5
How much did you like the treatment?	3	3


DISCUSSION

Emotive imagery combined with VR was effective in the treatment of darkness phobia in a child.

Good results in subjective and objective measures.

The outcomes achieved in VR generalized to real situations.

Outcomes were maintained at 3-month follow-up.

 The treatment was well-accepted by the patient



CONCLUSIONS

We think that VR can be very useful in the treatment of child phobias.

VR is attractive.

VR is less aversive than in vivo.

Imaginal exposure is difficult to conduct with children (problems in focus attention).

VR provides a rich environment capable to attire and maintain attention and enhance motivation and compliance with the treatment.

VR can be a useful alternative in the treatment of psychological disorders in children.



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