

Using virtual reality to treat social anxiety disorder in adolescents: a pilot study on fear of public speaking

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Introduction

Adolescence

- developmental issues leading to adulthood
- social relationship central in integration of new abilities.

Social anxiety disorder

- persistent anxiety when in social situation context and/or tendency to avoid these situations so that functioning is altered.

Facts about adolescent SAD

- Emerges between 11-13 years old.
- High risk of becoming chronic if treatment not offered.
- Has long term effect on social relationship and social integration, self esteem, other mental health problems.

Treatment available

- Cognitive behavioral approach. An important portion of treatment consists of exposition to social situation
- Constraints:
 - They seldom seek help when they do for other reasons
 - A tendency to minimize the extent of their problem,
 - Reluctant to comply to treatment requirement of exposure outside the therapist's office.

Virtual Reality Environment

- Could be very useful with SAD:
 - Offers the possibility to practice to face anxiety out of real life situation
 - Possibility to have therapeutic support
 - To progress at your own speed
- Recent interest with SAD
 - Few software available
 - Research in this field just begin (*Klinger et al, 2005*)
 - Never used with adolescents

Research objectives

Pilot testing of an *in vivo* exposure treatment for adolescents suffering from SAD using VR.

- Specific objectives:
 - Test if *in virtuo* exposure can help reduce SAD in adolescent.
 - Test if using exposure to public speaking only has an impact on other components of SAD.
 - To learn about adolescent's reactions to VR and it's further use in treatment.

Participants

- 5 adolescents from adolescent psychiatric clinic (SCID-diagnosed).
- 3 with general subtype and 2 with specific subtype of SAD.
- 3 females and 2 males.
- aged 15-17 years old.

Research Design

- Single case design with multiple baseline across participants
 - Repeated measure weekly before and all through treatment (main measure).
 - When constant results in repeated measure a multiple baseline between 2-4 weeks before starting treatment.

Instruments

- Self report scales administered before the baseline period (*Pre-pre*), before treatment begins (*Pre*) and end of treatment (*Post*).
 - Leibowitz Social anxiety questionnaire
 - Confidence as public speaker

Method and treatment

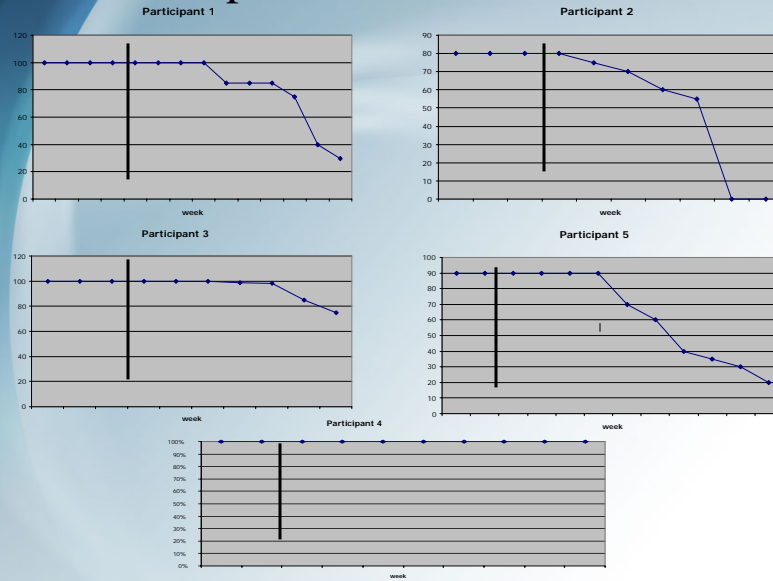
- Session 1-
 - introduction to cognitive model of social anxiety, elaboration of a hierarchy of fear in a public speaking situation, acquaintance with the equipment in VR
- Session 2 up to 9 (flexible)
 - 2 exposition in VR of 20 min each determined by the pre established hierarchy of fear. Therapeutic assistance available.
- Final session
 - Relapse prevention.

VR Equipment

- Virtually Better (classroom audience)



Repeated Measure Results



Questionnaire Results

	Condition	Mean score	Standard deviation
Leibowitz (Anxiety)	Pre pre	43	9,38
	Pre	41,2	9,78
	Post	28,8	22,47
Leibowitz (Avoidance)	Pre pre	35	4,58
	Pre	34	5,83
	Post	20,4	16,47
Confidence as speaker	Pre pre	3,4	1,82
	Pre	4	2,0
	Post	12,8	8,58

Clinical observations

- VR a tool to help participant to become aware of their own behavior and thought. They seek the therapist's assistance.
- VR a tool for the therapist.
- Reduction in repeated measure often associated with initiative in real life context.
- Motivation and presence associated with favorable treatment outcome.
- Limits of VR environment used.

Conclusion

- VR is promising with this population.
- VR treatment of one component of SAD in adolescents seems more effective with specific type
- Seems to have a generalization in the reduction of social anxiety level in other social context than fear of public speaking both in perceived level of anxiety and avoidance.