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Psychological Treatments for Flight Phobia based on Security

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Abstract

In this work a cognitive-behavior treatment is exposed to delete flying phobia with a lower than usual amount of sessions.

The treatment is based on the combination of the most effective techniques used to afford this problem: exposure techniques, anxiety and breath control techniques, thought-stop, reattribution training and information.

The most innovative component of this new treatment is the patients preparation for a travel made at optimal conditions, straightening the perceived security, in order to make the exposure easier.

In this work results about the application of this psychological treatment on a number of 20 patients (experimental group), in comparison to a control group (other 20 patients) are presented. Implications of this results for the clinical practice and future investigations are commented.

Keywords: Phobia; Flying phobia; Psychological treatment; Exposure; Security

Introduction

The treatment of choice for specific phobias is exposition, especially *in vivo* exposure [1-4]. Imagination exposure has also been evidenced to be effective [5], and must be used if the *in vivo* exposure is not achievable. That's why, it could be appropriate to combine *in vivo* and imagination exposure in determined phobias.

In this work a cognitive-behavior treatment is exposed to try to raise the efficiency of the exposure. Specifically, the proposed treatment is based on a combination of the most effective techniques to aboard this problem [6,7], like: exposure techniques, anxiety control techniques, thought stop, information and reattribution training. Moreover, an absolutely new variable is included which we have named "Travel in optimal conditions". The characteristic of this program, in front of other ones, is that it prepares patients to travel in the best conditions, as a strategy to encourage the exposure. The value "Optimal Conditions" pursue a travel designed by the patients where he or she feels mostly safe.

The concept of safeness hasn't been attended in the intervention of phobias field, however, we consider that it could be a nuclear factor of the therapy. It has been insisted that exposure is the most effective treatment for phobias [1,4,8], probably to get a habituation in front of the feared stimulus. But if the habituation is inhibited because the organism interprets emotional, cognitive or physiological that the stimulus is actually harmful and dangerous, long and intensive exposure won't be enough to get habituation. It can generate an opposed effect, sensitization. If the organism interpret danger, all the mechanisms that the specie has been able to develop along thousands of years to avoid extinction. That's why, through our point of view, exposure is effective when the organism really feels that the situation is safe, even though an intensive fear is induced by the stimulus. To achieve a therapeutic exposure, on the same line than the proposed by Gursky and Reiss [9], safeness must be felt by both, before the phobic stimulus and before the organism's reaction. The person must feel that nothing dangerous (Neither external, nor internal) is going to happen. For us, this approach would explain why there are brief and effective treatments, such as for example, the one offered by the Öst group [10-13]. This kind of treatment works with easily manageable stimulus, regarding security (the therapist can guarantee that the stimulus won't be harmful). It could also explain the effectiveness of systematic desensitization and inundation, both techniques would work safety signs through different ways. In the case of desensitization, correctly applied, the physiological reaction before the phobic stimulus is zero in each one of the nested

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elements. Therefore, the phobic person is receiving the information that there isn't danger. In the case of inundation, the person with phobia would check how the presence of the phobic stimulus don't elicit any harm, previous discomfort would appear but followed by a no-danger sensation, that is safety.

From our point of view, the concept of safety can explain the failure or success of an exposure treatment. So, if there is safety, habituation will be launched, if there isn't safety, the process will be inhibited, and the phobia would probably increase.

Methods

Instruments

For the present work the participants filled in the following instruments:

- General Diagnostic Information Interview for Flight Phobia (GDI-FP). Capafóns [14]. It gathers relevant questions about parameters related with the phobia.
- Fear to Fly Scale (FFS) [15]. It's a self-report kind of instrument that gather elements related with traveling in a plane. It contains three subscales: fear flying without self-implication, fear before the flight, fear during the flight.
- Expectations of Danger Scale and Anxiety to Fear to Fly Scale (EDAF-A and EDAF-B) [15]. It's also a self-report kind of instrument, based in the works of Gursky and Reiss [9].
- Fear Inventory (FI) [15], where 101 elements that can generate fear has been gathered. The Acrophobia subscale contains tightly related elements with flying fear.

Participants

The global sample of phobic people was composed by 40 subjects, 11 were men (27,5%) and 29 women (72,5%). Their age ranged between 16 and 62 years old, with an average of 33.9 years, and a typical deviation of 10,8. The sample of 40 people were assigned randomly to an intervention group and to the waiting control group. Both of them filled the instruments in two moments: the experimental group did it before and after the treatment, and the control group in the same time period, without receiving a treatment between both test passes.

Characteristics of the treatment program

The therapeutic program consisted in the psychological preparation of the patients to aboard successfully a flight trip in the best conditions, with the highest level of safety as possible. These conditions were obtained from different parameters implied in the flight: the plane size, the airport's category, the duration of the flight, the schedule, traveling alone or with a companion, atmospheric conditions, number of passengers, airport transfer, access to the plane, observing or not the pilot crew, the other passengers'. Attitude, position into the plane, etc. The program was carried out through 6 sessions, with a duration of 60 minutes along a weekly periodicity. Along the two first sessions we explored the best flight conditions for the patient, the session three and four were destined to work breath techniques, relax and information about aerial safety. In the fifth session we built a trip in optimal conditions and in the sixth session the patient faced an imaginal exposure and a real trip was designed.

Results

We present the comparison before and after the treatment in the

Table 1: MANOVA control group and experimental group in the first pass.

F	gl ₁	gl ₂	P	d
0.407	6	33	0.87	0.53

Table 2: Univariate Contrasts between the control group and the experimental group in the first test pass.

ESCALAS	T	gl	P
IDG-FV	0.81	1	0.42
EMV	0.05	1	0.96
EMV	0.47	1	0.64
EMV	1.02	1	0.32
EPAV-A	0.6	1	0.55
EPAV-B	0.74	1	0.46

Table 3: MANOVA grupo Control en el primer y segundo pase de pruebas.

F	gl ₁	gl ₂	P	d
0.042	1	174.76	0.84	0.03

Table 4: Contrastes univariados del Grupo Control en el Primer y Segundo pase de pruebas.

ESCALAS	t	gl	p	d
IDG-FV	-0.35	19	0.7	0.16
EMV (miedo a volar sin auto implicación)	1.39	19	0.2	0.63
EMV (miedo antes del vuelo)	-0.46	19	0.7	0.21
EMV (miedo durante el vuelo)	-0.59	19	0.6	0.27
EPAV-A (pensamientos catastrofistas)	0.3	19	0.8	0.13
EPAV-B (manifestaciones fisiológicas)	1.75	19	0.1	0.8

experimental and wait group.

Multivariate analysis of variance and univariate contrasts between control group and experimental group in the first test pass

In Table 1 the MANOVA results are presented between the control group and the experimental one before the treatment. In that table we can appreciate that the statistical significance hasn't been reached.

Then, in Table 2 the results of the univariate contrasts are presented, realized between the control group and the experimental group on the dependent variables (IDG.FG, EMV, EPAV-A, EPAV-B) before the treatment. In that table we can appreciate that the statistical significance hasn't been reached in none of the six considered variables.

Manova and intragroup univariate analysis in the control group (first pass-second pass)

In this section we present the information in relation to the waiting Control Group, with the objective of discarding significant changes in the dependent variables due to the pass of time. Because, if this would have happened, it couldn't be possible to associate de Experimental Groups changes with the effect of the application of the therapeutic program.

In Table 3 the MANOVA results of the control group in the first and second test pass are presented. In that table we can appreciate that there isn't statistic significance and the effect size is negligible.

In Table 4 the difference between scales for the control group has been analyzed, before and after the waiting period. As we can see,

Table 5: MANOVA Grupo Experimental primer-segundo pase de pruebas.

F	gl ₁	gl ₂	P	d
99.504	1	19	0.00001	4.58

Table 6: Contrastes univariados del Grupo Experimental en el Primer y Segundo pase de pruebas.

ESCALAS	t	gl	p	d
IDG-FV	5.3	19	0.0001	2.43
EMV (miedo a volar sin auto implicación)	3.92	19	0.001	1.79
EMV (miedo antes del vuelo)	9.01	19	0.0001	4.13
EMV (miedo durante el vuelo)	6.88	19	0.0001	3.15
EPAV-A (pensamientos catastrofistas)	4.26	19	0.0001	4.43
EPAV-B (manifestaciones fisiológicas)	9.66	19	0.0001	1.95

Table 7: Grupo control y experimental en el primer pase del inventario de miedos (IM).

t	Gl	p	d
1.46	38	0.15	0.47

the results don't show any significant differences in relation with the measured variables.

Manova and intragroup univariad contrasts in the experimental group (first pass- second pass)

We present now the information of the results of comparing the two test passes with the objective to see if there has been changes due to the effect of the treatment.

In Table 5 we can appreciate that the MANOVA realized with the six dependent variables in the experimental group before and after applying the treatment program, it gave a result of F1, 19=99, 504, p< 0.0001.

In Table 6 we can see the obtained results in each dependent variable. The results, for the experimental group, are indicators of a highly significant reduction in the self-reported level of fear (Questions of the IDG-FG), after applying the treatment, with a several size effects.

In the three EMV scales ("Fear to fly without self-involvement", "Fear before the flight" and "fear during the flight"), we can appreciate that the fear experimented during the flight has been significantly reduced after applying the treatment.

In the variables of the EPAV-A questionnaire ("Catastrophists Thoughts") and EPAV-B ("Physiological Manifestations") when we compare the first pass with the second pass, we can see that the results are also highly significant.

The size effect is huge for all the variables, with magnitudes above 0.80.

Effect of Generalization

As we can see in Table 7, before the treatment, there aren't any significant differences between the control and the experimental group in the Fear Inventory's first pass.

In Table 8 we can observe that there aren't significant differences between the Fear Inventory's first pass and the second one in the control group, and the size effect is despicable.

In Table 9 we present information about the comparison

Table 8: Grupo control en el primer y segundo pase del inventario de miedos (IM).

t	Gl	p	d
-0.07	19	0.94	0.02

Table 9: Grupo experimental en el primer y segundo pase del inventario de miedos (IM).

t	Gl	p	d
4.51	19	0.0001	2.06

Table 10: Grupos control-experimental en el primer pase de la escala de Acrofobia.

	t	gl	P	d
Acrofobia-Claustrofobia	0.7	32.43	0.49	0.24

Table 11: Grupo control en el primer y segundo pase del IM.

	t	gl	P	d
Acrofobia-Claustrofobia	-0.81	19	0.42	0.37

Table 12: Grupo experimental en el primer y segundo pase del IM.

	T	gl	P	d
Acrofobia-Claustrofobia	11.51	19	0.0001	5.29

between the first and the second test pass in the experimental group for the Fear Questionary (IM). In that table we can appreciate that the differences between both groups in the second test pass are statistically very significant, with a high size effect.

In Table 10 we present information about the comparison of the first test pass between the control and experimental group in the subscale of Acrophobia-Claustrophobia, the most related scale with flying fear. We can see that the differences between both groups in the first test pass are inappreciable.

Intragroup analysis of the control group in the first and second pass of the four selected scales of the Fears Inventory.

As shown in Table 11, there aren't significant differences comparing the two moments when the control group has been measured in the selected scale of the Fear Inventory.

In Table 12 we present information about the comparison between the first and second test pass in the experimental group in the selected scale of the fear inventory (IM). In that table we can appreciate that the differences between both are highly significant, with a 5.29 size effect.

Conclusions

The intervention program based on safeness has shown its effectivity. People in the experimental group, who has received treatment, have reduced drastically their discomfort in all the related moments, either directly or indirectly with the experience of flying in a plane, suffering less physiological anxiety and less catastrophist thoughts. This group get a clear evolution, in the sense of improvement, and 19 of the twenty participants were able to fly in a plain without any psychological discomfort (95%), once the treatment ended. Furthermore, the control group on the waiting list presented similar punctuations between both test's pass' and nobody wanted to travel in a plain after filling in the second test pass. Therefore, there aren't significant changes produced by the simple pass of time in the waiting group.

With these results we can point that the intervention program “Travel in Optimal Conditions” as treatment for flying phobia in an aerial transport has demonstrated a satisfying level of efficacy and also a suitable level of efficiency (Time-Results).

It seems that the intervention program based in the “secured” exposure implies a significant cutout of therapeutic sessions and has demonstrated a suitable level of efficacy-efficiency to decrease flying fear. This program also achieves the expansion to other variables of the benefits obtained by the program, such as the general level of fears, and concretely, the acrophobia-claustrophobia.

This research has showed that the subjective safeness could be decisive so that the exposure can be effective and increase the habituation. It’s possible that the perceived safeness could minimize the danger of sensitization that can be produced when we submit a person to the presence of the phobic stimulation.

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