

Exploring the relationship between the acceptability of a Flying phobia treatment delivered via the Internet and clinical outcomes

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Abstract. Acceptability (i.e. patients' expectation and satisfaction with the treatment) is claimed as an important and additional criterion besides efficacy. Nevertheless, the literature addressing this issue in the field of Internet-based treatments for specific phobias is scarce, and no studies for Flying Phobia (FP) are available. This study aims to explore the relationship between expectations and satisfaction with treatment and clinical variables in patients who have received an Internet-based treatment for FP (*NO-FEAR Airlines*). The sample included 46 participants from a randomized controlled trial. Clinical measures were: Fear of Flying Questionnaire-II, Fear of Flying scale, Fear and Avoidance Scales, Clinician Severity Scale, and Patient's Improvement Scale. Results showed significant correlations between expectations, satisfaction and the change on different clinical variables. Patients' expectations significantly correlated and predicted satisfaction with the treatment. Results also revealed that satisfaction with the treatment remained as a significant predictor of the change on all clinical variables. In sum, this study offers data on the relationship between acceptability measurements and clinical variables in patients receiving an Internet-based treatment for FP.

Keywords. Specific phobia, Flying Phobia, Acceptability, Computer-Assisted Exposure, Internet-based therapy

1. Introduction

Internet-based treatments have shown to be effective and with numerous advantages in the treatment of mental health problems [1, 2]. Specifically for anxiety disorders, they obtained a large effect size in comparison with control groups (placebo treatment or waiting list) and equal or superior to face-to-face treatment [3, 4]. However, there are still challenges to face to improve the implementation of Internet-based interventions [5, 6]. One crucial aspect for research related to self-applied programs is acceptability. Although the efficacy of Internet-based interventions is important, their acceptability (i.e. patients' expectation and satisfaction with the treatment) is an additional criterion

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likely to affect its implementation [7]. It is known that expectations influence the psychotherapy process and outcomes [8] and those positive expectations are also associated with better outcomes [9, 10]. On the other hand, satisfaction informs us about the feasibility of the intervention, helping to optimize the intervention efficacy [9, 11]. Therefore, the acceptability of the intervention can improve treatments effectiveness [12]. However, the research on these issues in the field of Internet-based treatments for specific phobias is scarce, and no studies for Flying Phobia (FP) are available.

This study aims to explore the relationship between expectations and satisfaction with treatment and clinical variables in patients who have received an Internet-based treatment for FP (*NO-FEAR Airlines*).

2. Method

2.1. Participants and design

The sample included 46 participants (32 women and 14 men) from a randomized controlled trial [13] who had completed *NO-FEAR Airlines*. The mean age was 37.59 years (SD = 11.13) ranging from 20 to 65 years.

2.2. Measures

2.2.1. Expectation and Satisfaction measures. Treatment Expectation-Satisfaction Scales (adapted from [14]) assess the participants' expectations about the treatment they will receive and their satisfaction at the end. It includes a 6-item scale ranging from 0 ("not at all") to 10 ("very much") about: 1) how logical the treatment seemed, 2) to what extent it could satisfy the patient, 3) whether the patient would recommend the treatment to others, 4) whether it would be useful in treating other problems, 5) the treatment usefulness for the patient's problem and, 6) to what extent it could be aversive.

2.2.2. Clinical variables

Fear of Flying Questionnaire-II (FFQ-II) [15] is a 30-item self-report instrument that describes situations related to flying. Respondents rated their degree of discomfort associated with each item on a scale from 1 to 9 (1 = not at all, 9 = very much).

Fear of Flying scale (FFS) [16] is a 21-item self-report measure to assess fear associated with various air travel situations. Fear elicited by each situation was rated on a 5-point scale (0 = not at all, 4 = very much).

Fear and Avoidance Scales (adapted from [17]) are used to assess participants' fear and avoidance on a scale ranging from 0 ("No fear at all," / "I never avoid") to 10 ("Severe fear," / "I always avoid") related to the main target behavior: "flying".

The Clinician Severity Scale measures the severity of the patient's phobia on a scale from 0 ("symptom free") to 8 ("extremely severe") [18]. This scale is answered by the clinician.

Patient's Improvement Scale (adapted from [19]) assesses the level of improvement

achieved by the patient (compared to the baseline status) on a 7-point scale (1 “much worse” to 7 “much better”). The scale is answered by the patient.

2.3. Treatment

NO-FEAR Airlines is an Internet-based exposure treatment for FP. The program includes three therapeutic tools such as *psychoeducation*, *exposure* and *overlearning*. The *exposure* component is provided through multimedia exposure scenarios composed of images and real sound related to the flight process. A detailed description of *NO-FEAR Airlines* can be found elsewhere [13, 20].

2.4. Procedure

Participants completed a pre- and post-treatment assessment via telephone and online (through the *NO-FEAR Airlines* website) that included both clinical and acceptability measures (expectations and satisfaction). Regarding expectations assessment, participants answered these questions before the treatment and after receiving a brief explanation about the rationale of *NO-FEAR Airlines*. After the treatment, participants reported their satisfaction with the treatment answering the same questions. For detailed information about the recruitment and procedure of the RCT see the study protocol [13].

2.5. Data analyses

Firstly, differences between pre- and post-treatment scores were calculated to estimate the change on each clinical variable. Secondly, Pearson correlations were conducted to explore relationships between expectations, satisfaction, and the change on clinical variables. Total scores and items from the Treatment Expectation-Satisfaction Scales were included for correlation analyses.

Finally, separate linear regression analyses were performed to examine whether patients' expectations and satisfaction with the treatment predicted the change on each clinical variable. An additional regression analysis was performed to test whether patients' expectations predicted the satisfaction with the treatment.

3. Results

Results showed significant correlations between *patients' expectations* (total score) and the change in *Fear* ($r = .289; p < .05$) and *Avoidance* ($r = .306; p < .05$). *Satisfaction with the treatment* (total score) was significantly correlated with the change in all clinical variables: *FFQ-II* ($r = .358; p < .05$); *FFS* ($r = .555; p < .01$); *Fear* ($r = .690; p < .001$); *Avoidance* ($r = .640; p < .001$); *Severity* ($r = .751; p < .001$) and *Improvement* ($r = .792; p < .001$). Furthermore, significant correlations were found between *expectations* and *satisfaction* total scores ($r = .452; p < .01$).

Significant correlations between the different items in Treatment Expectation-Satisfaction Scales and the change in clinical variables are presented in Tables 1 and 2.

Table 1. Significant correlations between expectations and pre-post differences in clinical variables.

	Expectations					
	Logic	Satisfaction	Recommendation to others	Utility to other problems	Utility to their problem	Aversiveness
FFS	-	-	-	-	-	-.347*
Fear (TB)	-	.405*	-	-	-.492**	-.492**
Avoidance (TB)	-	-	-	-	.360*	-.593**
Severity	-	-	-	-	-	-.470**

Note: FFS, Fear of Flying Scale; TB, Target Behaviour (flying); Severity, Clinician Severity Scale. *p < .05; **p < .001.

Table 2. Significant correlations between satisfaction measures and pre-post differences in clinical variables.

	Satisfaction					
	Logic	Satisfaction	Recommendation to others	Utility to other problems	Utility to their problem	Aversiveness
FFQ-II	-	.374*	-	-	.370*	-
FFS	-	.629**	.419*	-	.687**	-
Fear (TB)	-	.614**	.447**	.425*	.711**	-.389*
Avoidance (TB)	-	.551**	.466**	.446**	.629**	-
Severity	.373*	.626**	.573**	.458**	.743**	-.398*
Improvement	.445**	.771**	.594**	.431*	.851**	-

Note: FFQ-II, *Fear of Flying Questionnaire-II*. FFS, Fear of Flying Scale; TB, Target Behaviour (flying); Severity, Clinician Severity Scale; Improvement, Patient's improvement Scale. *p < .05; **p < .001.

Regarding regression analyses, results revealed that *satisfaction with the treatment* (total score) remained as a significant predictor of the change on all clinical variables (Table 3). By contrast, *patients' expectations* (total score) was excluded from the model and it was not a significant predictor for any clinical variable. Finally, *patients' expectations* (total score) was a significant predictor of *satisfaction with the treatment* ($R^2 = .204$; $\beta = .452$; $t = 2.821$; $p < .01$).

Table 3. Satisfaction with the treatment as a significant predictor of change in clinical variables.

DV	R ²	β	t	p
FFQ-II	.128	.358	2.098	.044
FFS	.308	.555	3.714	.001
Fear (TB)	.477	.690	5.314	.000
Avoidance (TB)	.410	.640	4.640	.000
Severity	.573	.825	5.269	.000
Improvement	.631	.823	6.616	.000

Note: DV; Dependent variable; FFQ-II, *Fear of Flying Questionnaire-II*. FFS, Fear of Flying Scale; TB, Target Behaviour (flying); Severity, Clinician Severity Scale; Improvement, Patient's improvement Scale. β , standardized beta coefficient.

4. Discussion

This study offers data on the relationship between expectations and satisfaction measurements and clinical variables in patients receiving an Internet-based treatment for FP. The results showed that expectations (both the total score of the scale, as well as the different items separately) significantly correlated with the change on fear and avoidance outcomes as well as with patients' satisfaction. Moreover, patients' expectations were a

significant predictor of satisfaction with the treatment. Thus, positive expectations were associated with better outcomes. These results are in line with the literature [9, 10] and suggest the importance of considering patients' expectations of treatment, since it is a factor that explains part of the therapeutic efficacy as well as the patients' satisfaction with the treatment. Regarding satisfaction with the Internet-based intervention, the results also showed significant correlations with change on clinical variables. Furthermore, satisfaction appears as a significant predictor of change in clinical variables. This is an important result because it is known that satisfaction helps to optimize the intervention efficacy [9, 11] and the results in the present study proved that the same might happen with an Internet-based intervention program for FP.

Another relevant issue is the data referred to *aversiveness*. Our results suggest that the perceived *aversiveness* at pre-treatment (expectations) might be more related to the change on clinical variables than the *aversiveness* reported after the intervention (satisfaction). These finding might highlight the importance to consider the perceived aversiveness by patients before starting the intervention (i.e., to provide accurate information when they are informed about the treatment and to implement less aversive interventions, if necessary) in order to enhance the therapeutic process and outcomes.

In the light of these results it is worthy to take into account the necessity of developing not only interventions with effective treatment components, but also with aspects that improve the patients' expectations and satisfaction with the intervention, as this also influences the response to treatment. In the present study, the *exposure* component in the Internet-based intervention is provided through multimedia exposure scenarios composed of images and real sounds, related to the flight process aspects designed to improve patient expectations and satisfaction. According to authors, the use of these tools may provide a less frightening way to confront the fears compared to *in vivo* exposure resulting in better treatment acceptance (i.e., positive expectations and higher satisfaction with the treatment) and better outcomes [21]. In sum, our results are congruent with the data found in the literature. Thus, the acceptability of the intervention can improve treatments effectiveness [12]. However, as far as we know, this is the first study addressing this issue in the field of Internet-based treatment for FP. Research on Internet-based treatments acceptability in relation with efficacy variables might help to improve the treatment offered as well as its implementation, reaching more people in need. Future research is still needed.

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