Telepsychology and Self-help: The Treatment of Fear of Public Speaking

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This work presents a self-help, Internet-based telepsychology program for the treatment of public speaking fears. The system is comprised of 3 parts: The assessment protocol gives the patient information about his or her problem (i.e., amount of interference it creates in his or her life, severity, degree of fear and avoidance). The system also includes a structured treatment protocol, organized into separate blocks, reflecting the patient’s progress. This ensures that the patient does not skip any steps in the treatment (something quite common in traditional self-help manuals), which provides more control over the process. The treatment protocol is a cognitive-behavioral program that provides exposure to the feared situation using videos of real audiences. Finally, the control protocol assesses treatment efficacy, not only at closure, but also at every intermediate step. Efficacy data from 12 social phobia patients are presented from pretreatment to posttreatment and at 1-month follow-up. These preliminary data support the efficacy of our telepsychology program for the treatment of fear of public speaking. This is a preliminary work in a promising research path that examines the possibility of using the Internet for the treatment of psychological disorders.

Social phobia is one of the most prevalent mental disorders (Magee, Eaton, Wittchen, McGonagle, & Kessler, 1996), and many people suffering from social phobia do not seek treatment (Schneier, Johnson, Hornig, Liebowitz, & Weissman, 1992). Cho, Smits, and Telch (2004) refer to fear of public speaking as the most feared situation among the general population, with an estimated prevalence ranging from 20% (Cho & Won, 1997; Pollard & Henderson, 1988) to 34% (Stein, Walter, & Forde, 1996). The clinical features of social phobia include a wide number of situations, from specific fears such as speaking, eating, or writing in public, to more generalized fears that appear in all or almost all social situations.

Heimberg, Holt, Schneier, Spitzer, and Liebowitz (1993) identified three social phobia subtypes: generalized social phobia, which includes individuals with fear across almost all domains of social situations; nongeneralized social phobia, which includes individuals who fear multiple social situations but who report no problems in at least one social domain; and finally, discrete (or specific) social phobia, which includes individuals with fear in only one or two circumscribed social situations (such as writing in public or public speaking). In this work we present a novel program for the treatment of a specific social phobia, the fear of public speaking.

There have been very important advances in recent years in the development of effective treatments for anxiety disorders, including social phobias. Although there are well-established programs for the treatment of these disorders (Barlow, Raffa, & Cohen, 2002), there are still limitations on the availability of these treatments. For example, mental health practitioners encounter difficulties in the application of empirically validated programs (Barlow, Levitt, & Buïka, 1999). High costs and time investments prevent many patients from receiving suitable treatment. These limitations reduce the possibility of offering the programs to all of the individuals who suffer from mental disorders. Therefore, one of the challenges in the study of psychological treatments is to design new, more cost-effective methods of treatment delivery.

The key goal of this research is to shorten the face-to-face contact with the therapist without reducing the effectiveness of the treatment (Botella & García-Palacios, 1996). One of the lines of research addressing this has been the reduction of contact between patient and therapist by means of self-help procedures (for instance, Clark, Salkovskis, Hackmann, Wells, & Gelder, 1995; Côté et al., 1994; Gould & Clum, 1995; Gould, Clum, & Shapiro, 1993; Hecker, Losee, Fritzler, & Fink, 1996; Lidren et al., 1994). Self-help material can be defined as any media (written, taped, etc.) whose content is a treatment program (or a part of a treatment program) that can be self-administered by the patient alone or with the
guidance of a therapist (Glasgow & Rosen, 1978). Glasgow and Rosen (1978, 1982) reviewed the use of self-help procedures in behavior therapy manuals and concluded that these procedures could be effective. Though optimistic with regard to the use of self-help manuals in treating several psychological problems (phobias, obesity, sexual disorders, assertiveness, behavior problems in children, tobacco addiction, etc.), they emphasized the necessity of carrying out empirical studies before offering a self-help program to the general public.

Rosen (1987) highlighted the increasing availability of self-help materials and stressed the importance of carrying out rigorous studies to test the effectiveness of such programs. He also noticed that an incorrect application of self-help procedures could exacerbate psychological problems. For example, a patient could incorrectly diagnose his or her problem and self-administer an inappropriate treatment. Or, a patient could misunderstand instructions and administer a treatment incorrectly. Any of these mistakes could lead to a failure. Ultimately, the patient’s misunderstanding of the program could lead to his or her decreased confidence in psychological treatments in general. In a more recent work on this subject, Gould and Clum (1993), after a review of self-help programs, reported several general conclusions about the effectiveness of self-help procedures. Their conclusions were optimistic and highlighted the importance of conducting research studies in this field.

In addition to the concerns raised by these authors, another important characteristic of most self-help procedures is that the patient has all the self-help information at his or her disposal (as opposed to a system that makes sure that each step in the program has been suitably completed before advancing to the next step). This is one of the main issues that guided the design of the self-help program that we present in this work, a program that does not allow going to the next step until the previous has been completed.

In summary, self-help procedures could be an alternative way of applying therapy and could increase the number of individuals who can be treated, reducing costly face-to-face therapy time. Of course, it is essential to test the programs thoroughly before offering them to the public. Previously, we contributed to this line of research with the design and testing of a reduced treatment for panic disorder supported by self-help. The results were similar to those achieved by a standard program (Botella & García-Palacios, 1999). Advances achieved in this field would signal an important step in increasing the availability of effective treatments, one of the main recommendations of the National Institutes of Health (Walker, Ross, & Norton, 1991).

Another method of reducing contact between therapists and patients is telehealth. Telehealth is the term chosen by the Standing Committee of Family and Community Affairs (1997) to refer to the “provision of long-distance health services.” The main features of telehealth systems are (a) the geographical distance between the service and the user and (b) the use of telecommunication technologies that facilitate the interaction (Banshur, 1995). In the wide field of telehealth, disciplines such as telemedicine, telepsychology, and telepsychiatry have emerged. The technologies used by these disciplines include videoconference, phone, computer, Internet, fax, radio, and television. Telepsychology and telepsychiatry have been defined as “the use of telecommunication technologies to put patients in contact with the mental health practitioners with the aim of providing a suitable diagnosis, education, treatment, consultations, communication and storage of the patients’ records, research data, and other activities related to the provision of mental health care” (Brown, 1998).

One of the first works in the field of telemedicine involved the use of long-distance communication between a medicine department and a state hospital to carry out consultations between the two centers (see Baer, Cukor, & Coyle, 1997). As a result of this experience, interest in this field has been increasing, supported by advances in telecommunication technologies. There are already some respectable, established programs that have become important tools in the health system, such as the Adelaide telepsychiatry system in Southern Australia (Kalucy, 1998) and the Beating the Blues program for depression and anxiety developed by Marks and his team (Marks et al., 2003; McCrone et al., 2004; Proudfoot et al., 2004).

Acknowledging the utility of telepsychology in the field of psychological disorders, Barlow stated:

Well-written self-help manuals, Internet resources, and telehealth programs containing up-to-date, easy-to-follow psychological treatments seem effective in reducing impairment for individuals with less severe manifestations of pathology (see Norcross et al., 2003, for an excellent compendium). Telehealth procedures typically refer to intervention and assessment using electronic communication such as telephone or Internet technologies. The President’s New Freedom Commission on Mental Health in 2003 strongly encouraged continued development in the area of health technology and telehealth to facilitate contact with untold numbers of individuals unable to access a mental health professional.” (Barlow, 2004, p. 874)
Despite this, the real possibilities of establishing these kinds of systems have been limited until recently. Reasons included telecommunication equipment costs and the lack of telecommunication structures, criteria and protocols of use, and evidence of effectiveness regarding cost-benefit issues. Although some efforts were made to reduce costs, there were also technical limitations such as the slow speed of the Internet or the lack of technology to provide audio and video signals on-line. However, recent technological achievements are making the design and use of telropsychology programs possible.

Some noteworthy works have already been published in this field. Graham’s (1996) program provides mental health care to chronic mental patients in remote areas. Harvey, Roques, Fox, and Rosor (1998) tested the possibility of using the phone and e-mail to make diagnoses and provide counseling to a young psychiatric population. Kavanagh and Hawker (2001), after a review of the literature, found that a psychiatric assessment by means of a videoconference is as reliable as a face-to-face assessment. In the field of social phobia, Przeworski and Newman (2004) developed a Palmtop computer-assisted group therapy program. There is also evidence of an important degree of acceptance of this new way of providing mental health care (Blackmon, Kaak, & Ransden, 1997; Ermer, 1999; Jacobs, 1999; Zajtchuk & Gilbert, 1999).

One of the most-used technologies for providing telropsychology is the Internet. There are an increasing number of Web sites for the provision of mental health care on the Internet (see Landau, 2001, for a review). This author categorized these programs into four modalities: real time, as happens in popular chat rooms using text; video teleconferencing in real time; e-mail, a delayed text modality; and Web telephony, or phone via Internet. Landau also highlights the advantages of on-line psychotherapy. The main advantage is that on-line psychotherapy could reach people who might not otherwise seek therapy, perhaps because they are disabled or live in remote areas. On-line psychotherapy allows for greater anonymity, and is often less expensive than face-to-face psychotherapy. She also noticed that this way of providing psychotherapy could be more appealing to children and adolescents, given their interest in computers.

One important issue in this field is that, despite the increasing number of on-line psychotherapy sites, only a few have been tested. As is the case with other self-help materials, an important step before offering a telropsychology program on-line is to test its effectiveness in clinical trials. There are some studies, although still few, that show evidence of the effectiveness of on-line telropsychology programs. For example, this technology has been used with success for reducing risk factors in eating disorders (Celio et al. 2000; Winzelberg et al., 2000; see also Robinson and Serfàty, 2001, who offered preliminary data on e-mail psychotherapy for bulimia nervosa). Good results have also been reported about the treatment of severe headaches (Ström, Pettersson, & Anderson, 2000). Lange, Schrieken, et al. (2000) and Lange, Riedijk, et al. (2003) reported efficacy data of a manualized treatment of posttraumatic stress and pathological grief through the Internet (http://www.psy.uva.nl/Interapy). Finally, some controlled studies provide data on the efficacy of Internet-based telropsychology programs for the treatment of panic disorders (i.e., Carlbring, Ekselius, & Andersson, 2003). However, no Internet-based self-help treatment programs specifically targeting social phobia (or, more specifically, fear of public speaking) existed until now.

In this work we present preliminary data on the efficacy of the first self-help telropsychology program for the treatment of the fear of public speaking. In a previous work we described the program and presented a case study (Botella, Hofmann, & Moscovitz, 2004). Our program includes an assessment and a treatment protocol. One of the main features of our program is the continuous assessment of the progress of the user. The program presents the progressive steps of the treatment only when the patient is ready, with the goal of ensuring suitable evolution throughout the process and avoiding therapeutic failures. In the following sections we describe our telpsychology program, “Talk to Me,” and the results obtained in a sample of 12 participants.

Method

Participants

Individuals who asked for help at the Emotional Disorders Clinic at Jaume I University were recruited into the study, as were those who responded to advertisements around the university campus about our Internet Fear of Public Speaking Program. Participation in the study was voluntary. The participants had to pay a low fee of 6 euros per session as a commitment to follow the treatment.

The initial sample was composed of 14 participants. Two of them dropped out of the study for different reasons (one said that she felt much better after the educational component, and the other encountered technical problems in the second session and stopped coming). Twelve participants completed the program; all were women studying for a university degree or who had already finished their degrees. Their mean age was 20.17 (SD = 3.58) ranging from 19 to 29 years old. Most participants were single, only one was married.

All patients met DSM-IV (American Psychiatric Association, 1994) criteria for social phobia. Diagnosis was established using an adaptation of the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV-L; DiNardo,
Brown, & Barlow, 1994). All but two participants reported that they had suffered from this problem for as long they could remember. Two of them reported that the duration of their problem was 4 years. Only one participant presented comorbidity. She suffered from an adjustment disorder with depressed mood related to a family problem. The members of the team were trained in the application of the ADIS-IV-L because this interview is the procedure of choice in our clinic for the diagnosis of anxiety disorders. The diagnosis was carried out and supervised by members of the research team. In addition to DSM-IV criteria, we used the Heimberg criteria to establish the social phobia subtype (Heimberg & Holt, 1989). Participants were diagnosed with generalized social phobia (8.33%), nongeneralized phobia (66.66%), and specific social phobia (25%). We also established some exclusionary criteria: current alcohol or drug dependence, being treated with a similar program in the past, and primary diagnosis of major depression and psychosis.

The main feared social behavior was public speaking, specifically public speaking situations related to their academic performance.

Measures

In this treatment program, the assessment was made in two different ways: each person was assessed both by the psychologist and by the program. We counterbalanced the order of the assessment. Six of the participants were assessed first by the psychologist and then by the program, and the other six were assessed first by the program and then by the psychologist. Three assessment periods were established: pretreatment, posttreatment, and 1-month follow-up.

The instruments and measures used were as follows:

Diagnostic interview. We used an adaptation of the ADIS-IV-L from the social phobia section. This interview was composed of the social phobia criteria from ADIS-IV-L; the level of avoidance and fear regarding different situations rated on 0–10 scales; how long the participant had been suffering this problem; and the level of severity of her problem on a 0–4 scale. These were the diagnostic issues addressed by the computer program. We explored these issues in the interview with the therapist, but also explored comorbidity with other anxiety disorders, mood state disorders and substance abuse using the other sections of the ADIS-IV-L.

Fear of Public Speaking Questionnaire (FPSQ; adapted from Bados, 1986). We adapted this measure from Bados’s questionnaire “Concern Regarding Speaking in Public”. This questionnaire has been validated in Spanish populations and has good psychometric properties, such as a test-retest reliability of 0.92. In this measure, subjects are the presence and intensity of several anxiety symptoms when they have to speak in public or when they think about the possibility of doing so. Eight items comprise this test and they are rated on 1–10 scales (1 = I completely agree, 10 = I completely disagree). The maximum score on this questionnaire is 80.

Public Speaking Self-efficacy Questionnaire (PSSEQ; Adapted from Bados, 1986). After we reviewed the literature on fear of public speaking assessments, we designed this measurement from Bados’s questionnaire. This questionnaire has been validated in Spanish populations and has good psychometric properties, including a test-retest reliability of 0.94. This instrument measures, on a 0–10 scale, the level at which one person is able to cope with different situations related to speaking in public (0 = I can’t do that at all, 10 = I can definitely do that). The maximum score in this questionnaire is 60.

Target Behaviors. This questionnaire was adapted from Marks and Mathews (1979). Each participant chose scenarios to confront based on the advice of the system, depending on the level of fear and avoidance they experience in situations that those scenarios simulate. A 0–4 scale was used for the level of fear and avoidance (0 = no fear at all, 4 = severe fear, I always avoid). Coping with these situations was the treatment goal for our participants. For the analysis we used the most important target behavior chosen by each patient. The importance of the target behaviors was defined by the significance that each of them had for the participants; the most important was the one that the participants would encounter more often in their lives and whose avoidance was causing significant impairment. This measure was an important outcome measure in the study, because it constructed a hierarchy for each participant while conducting the exposure tasks.

Impairment Questionnaire (adapted from Echeburúa, Corral, & Fernández-Montalvo, 2000). This self-report questionnaire has been validated in Spanish populations and has good psychometric properties. This questionnaire measures the level of impairment that the problem is creating in different areas of each participant’s life (work, family, social activities, and general impairment). Participants were instructed to “rate the following (0–4) scale to what extent your problem is affecting the following life areas (work, family, social activities and life in general)” (0 = not at all, 4 = very much so).

Attitudes toward the self-help program measures. This instrument included three measures. The first measure, Motivation on the Treatment Program (MTPPQ), was specifically designed for this research. It assesses, on a 0–10 scale, the level of motivation related to starting the treatment. The second measure, Treatment Satisfaction (TS), assesses, on a 0–10 scale, to what extent the participants were satisfied with the treatment program.
Confidence in is a questionnaire that measures confidence in the Internet, computers as a means of delivering treatments, self-help programs and the ability to self-apply a treatment. The questionnaire included four items and was designed specifically for this research. First, this test assesses the participant’s confidence in the Internet as a medium for finding information in order to solve problems. Second, the participant assesses his or her expertise regarding the use of computers. This test uses 1–10 scales (1 = total disagreement, 10 = total agreement). The maximum score on this questionnaire was 40. The items were: (a) I trust the Internet as a means whereby I can find information to solve personal problems; (b) I trust computers as an instrument that can help solve my problem; (c) I trust this self-help treatment program; and (d) I trust my ability to self-apply this treatment program.

Exposure record sheet. The information recorded represents the level of anxiety and avoidance before, during, and after each computer exposure session. With this measurement the patient could observe how the level of anxiety and avoidance progressed during the exposure tasks.

Subjective Units of Discomfort Scale (SUDS; Wolpe, 1969). Participants rated their levels of anxiety on a 0–10 scale (0 = no anxiety, 10 = high anxiety) during the exposure sessions.

Consent form. The participants read and signed a consent form accepting the treatment that they were going to receive, allowing us to videotape the sessions, and allowing us to use their data in our research.

Self-Help Treatment Program. The treatment program is called “Talk to Me” (www.internetmeayuda.com). It is a telepsychology self-help program that uses the Internet and is designed to guide the patient through the therapeutic process. The program is composed of (a) an assessment protocol that offers the patient information about his or her problem, including the interference it is causing him or her, its severity, and the degree of fear and avoidance related with public speaking situations; (b) a structured treatment protocol organized into separate blocks reflecting the patient’s progress, which ensures that the patient does not skip any steps in the treatment and provides more control over the process; and (c) a control protocol that assesses the treatment effectiveness, not only at its conclusion but at every intermediate step.

Trust and rapport. First, the system offers the patient information about the program regarding ethical issues. This information includes: information about the research and clinical team that developed the program; a description of the problem that the system addresses (fear of public speaking); rationale of the treatment; safety measures to ensure confidentiality; and finally, how to use the system.

The system then introduces itself as “Talk to Me” and describes its mission: to guide and offer help in two main ways—by protecting the individual (not allowing him or her to go forward if he or she is not ready) and by trying to assure a suitable application of the program. “Talk to Me” also informs the user that throughout the process it will carry out several assessments and, depending on the results, it will advise what the next task for the patient should be.

Assessment. As we have already mentioned, “Talk to Me” presents several assessment instruments for evaluating the problem (see Measures section). Depending on the scores, the program gives feedback: (a) It informs the individual that he or she can benefit from the program; or (b) It informs the individual that some of the data suggest not becoming involved in the program and thus recommends looking for another kind of mental health help. Examples of not being eligible to start the program include the following: if the patient does not meet the criteria of social phobia; if fear of public speaking is not a feared situation for the person; or if the user meets some of the exclusionary criteria.

The following step is designed to screen for target behaviors for the exposure tasks, and the degree of fear, avoidance, and concern about negative evaluation associated with each target behavior. The target behaviors are established in relation to the situations included in the program. “Talk to Me” saves all the information gathered in the assessment in order to make an accurate diagnosis, to customize the treatment tasks for each person, and to measure the therapeutic progress throughout process.

In Figure 1 we display a screen shot of the “Talk to Me” assessment phase.

The Scenarios. “Talk to Me” is composed of four scenarios consisting of videos of real audiences in public speaking situations. The scenarios were developed by filming real people simulating an audience in different public speaking situations. Figure 2 is a screen shot of one of the videos used.

- CLASSROOM: The patient can choose from two classrooms, one containing 7 to 8 students and the other containing 20 to 30 students. The students are seated and looking at the patient, who has to speak to them.
- ORAL EXAM: We have three committees of professors (1, 3, or 5). The user has to perform an oral examination in front of the committee.
- WORK MEETING: the patient has to deliver a presentation to a group of colleagues (6 to 12) and the boss, all seated around a conference table.
- GROUP OF FRIENDS: The scenario depicts an informal meal in which several people are seated around a restaurant table. All chat and laugh, and every now and then they look toward the patient who has to say something, such as a story or a joke.
The scenarios also include facilitating, neutral, or disturbing stimuli. The people composing the audiences adopt positive, negative, or neutral roles. For example, a positive response is nodding or smiling, and a negative one is appearing impatient or bored.

The Treatment. Once the introduction and assessment phases are completed, the treatment starts. Treatment consists of three components: education, cognitive therapy, and exposure. These are the most active components in CBT programs for social phobia (see, for example, the CBGT program developed by Heimberg, 1991, included in the list of empirically supported treatments, Task Force on Promotion and Dissemination of Psychological procedures, 1995, last updated in Woody and Sanderson, 1998). Although other therapeutic techniques like relaxation and social skills training are effective for the treatment of social phobia, our premise is that exposure, combined with cognitive therapy, is powerful enough to overcome a specific social phobia such as fear of public speaking.

The educational component presents the rationale of the treatment and each therapeutic component in detail: cognitive therapy and exposure. After the presentation of this information, the system asks some questions to make sure that the patient has understood the content. If the questions are not answered correctly, the system asks the patient to review the educational content again. The patient cannot progress to a new step of the educational component if he or she has not answered the questions correctly.

The cognitive therapy component consists of presenting the rationale for cognitive restructuring by giving examples of the importance of automatic thoughts in the development and maintenance of social phobia. The patient is taught to challenge automatic thoughts and develop rational responses. The procedure for doing so is to use questions with various aims: to reveal real evidence for the automatic thought, to evaluate the likelihood of occurrence of the content of the automatic thought, to decatastrophize the consequences of the automatic thought, etc. The patient
practices this procedure with some of his or her own automatic thoughts related to public speaking. He or she is also instructed to use these skills during exposure.

The exposure component is the main ingredient of our program. “Talk to Me” offers several clinically meaningful scenarios for individuals with fear of public speaking. Each scenario has several modulators in order to build an exposure hierarchy: number of people, difficulty of the speech, and level of attention of the audience. The system presents one or more scenarios to the patient depending on the scores achieved in the assessment phase regarding the target behaviors.

As for the exposure tasks, “Talk to Me” instructs the individual on how to confront each scenario. At the beginning of the session, the participant is asked about the degree of fear, avoidance, and concern regarding negative social evaluation related to the situation. Then the participant starts the exposure task, beginning by reviewing the speech he or she has prepared at home and then rehearsing it in front of the virtual audience. Every 5 minutes, the system asks about the user’s degree of fear, avoidance, and concern regarding negative social evaluation. The system also gives exposure instructions such as not giving up on the situation until anxiety is reduced at least 2 points from the maximum experienced.

When the exposure task is finished, the system provides feedback using graphs about the progress of anxiety, avoidance, and concern throughout the exposure session. The program reinforces the patient for the effort and success achieved. Accounting for individual differences regarding habituation, the length of the exposure tasks is not limited. The procedure is similar for each session. The sessions conclude when the patient has achieved the therapeutic goals related to the target behaviors.

The system does not include self-exposure instructions between sessions. Because the project was in a testing phase, our goal was to explore the efficacy of the program itself, without using other exposure modes such as in vivo exposure between sessions.

Procedure

The participants made an appointment for a screening assessment in which a psychologist described the program and asked them to sign the consent form. According to the design, in the following two sessions (assessment sessions), each participant could be assessed first by the computer and then by the psychologist or first by the psychologist and then by the computer. An experienced psychologist carried out the traditional assessment.

Next, the participants began the self-help program. They had access to a room where they could use a computer at the Emotional Disorders Clinic with “Talk to Me” installed. We used an intranet system for this study. Each participant programmed his or her own schedule to have access to “Talk to Me”. Participants could use the program from 8 A.M. to 10 P.M. by reserving the space. Each person in our sample needed a different number of sessions for overcoming his or her fear. The average number of sessions was 7.58. The computer advised a certain number of sessions for each participant, and participants usually followed the program’s recommendation. Therefore, the number of sessions and the scenarios used depended on the fear level for each situation.

Because it is a self-help program, the length and frequency of the sessions depend on the interest of the patient. This program advises the participants that they should do exposure in a consistent way, and that it is very important not to finish the sessions with high levels of anxiety.

As we have already mentioned in the treatment section, we did not include in vivo self-exposure tasks between sessions. The patients were asked to practice with the program as frequently as they could, even daily. Most of them came two or three times a week.

For this study, patients were required to come to our lab for treatment instead of practicing from home as in a real telepsychology program. Because this was the first time we tested the program, we wanted to be able to intervene if there were a clinical or technical problem.

Once the treatment was over, the participants completed a posttreatment assessment and a 1-month follow-up assessment.

Results

We analyzed the changes from pretest to posttest and follow-up, using repeated measures analysis of variance (ANOVAs). In Tables 1 and 2 we offer the means and standard deviations of the analyzed variables in the different assessments.

Measures Directly Related to Fear of Public Speaking

Analyses showed a significant time effect in all measures: Fear of Public Speaking Questionnaire, \( F(2, 10) = 20.885, p < .001 \); Public Speaking Self-Efficacy Questionnaire, \( F(2, 10) = 17.682, p < .005 \); Severity of Fear of Public Speaking, \( F(2, 9) = 10.731, p < .005 \). In addition, we analyzed the time effect of these variables more accurately using univariate contrasts.

In this analysis we compared pretest with posttest and posttest with follow-up. As we expected, the comparisons between pretest and posttest were significant: Fear of Public Speaking Questionnaire, \( F(1, 11) = 16.117, p < .005 \); Public Speaking Self-Efficacy Questionnaire, \( F(1, 11) = 23.479, p < .005 \), and Severity of Fear of Public Speaking, \( F(1, 10) = 18.947, p < .005 \). On the other hand, the comparisons between the posttest and follow-up assessment were not significant. Analyses revealed a
significant reduction in all these variables from pretest to posttest, and this effect was maintained from posttest to follow-up. In summary, patients showed improvement in their clinical status at posttest, and this improvement was maintained at follow-up.

The ratings in the target behaviors also improved with treatment (see Table 2). We analyzed the time effect of the level of fear and the level of avoidance. This analysis showed a significant time effect from pretest to posttest and to follow-up: level of fear, $F(2, 10) = 31.704, p < .001$; and level of avoidance, $F(2, 10) = 45.687, p < .001$. In addition, we analyzed the time effect of these variables more accurately using univariate contrast. In this analysis, we compared pretest with posttest and posttest with follow-up. The results showed a significant effect in both measures: level of fear, $F(1, 11) = 69.632, p < .001$; and level of avoidance, $F(1, 11) = 93.534, p < .001$. We also found a significant time effect from posttest to follow-up: level of fear, $F(1, 11) = 17.246, p < .005$; and level of avoidance, $F(1, 11) = 72.600, p < .001$; that is, the improvement was maintained from posttreatment to follow-up in these variables.

**Impairment Measures**

In this study we measured the problem impairment in several life areas (work, family, social, and global impairment; see Table 2). Analysis of the three phases (pretest, posttest, and follow-up) only revealed a significant time effect from pretest to follow-up in the social area, $F(2, 8) = 4.80, p < .05$. Univariate tests taking the comparison between pretest and posttest into account revealed significant time effects in social impairment, $F(1, 9) = 10.95, p < .01$. There were no significant differences in the comparisons between posttest and follow-up.

**Diagnosis**

As mentioned in the sample description, all participants met DSM-IV criteria for social phobia at pretreatment. We also used the Heimberg and Holt (1989) criteria to determine the social phobia subtype. At pretreatment 8.33% ($N = 1$) of the participants were diagnosed with generalized social phobia, 66.66% with nongeneralized social phobia, and 25% with specific social phobia. By contrast, at 1-month follow-up, 58.33% did not meet social phobia criteria anymore. As for the social phobia subtype, none of the participants met criteria for generalized social phobia; only 8.33% were diagnosed with nongeneralized social phobia, and 33.33% with specific social phobia.

Although the aim of this work is to address efficacy data, we will report the level of agreement between the computer and therapist diagnoses. We analyzed this level of agreement regarding some questions of our adaptation of the ADIS-IV-L for the “Talk to Me” program (DiNardo et al., 1994). Those questions were number 1, number 3, and number 5 of the ADIS-IV-L. The mean percentage of agreement between the computer and the clinician regarding these questions was 83.33%.

**Table 1**

Means and Standard Deviations of the Variables Related to Fear of Public Speaking, and Self-efficacy Measures at Pretreatment, Posttreatment, and Follow-up Assessment

<table>
<thead>
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<th>Pretreatment</th>
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<th>Posttreatment</th>
<th></th>
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<td>1.03</td>
<td>1.36</td>
<td>0.81</td>
</tr>
</tbody>
</table>

*Note.* FPSQ = Fear of Public Speaking Questionnaire; PSSEQ = Public Speaking Self-Efficacy Questionnaire.

**Table 2**

Means and Standard Deviations of the Fear and Avoidance Levels Related to the Target Behaviors and the Impairment Measures at Pretreatment, Posttreatment, and Follow-up Assessment

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretreatment</th>
<th></th>
<th>Posttreatment</th>
<th></th>
<th>Follow-up</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Fear</td>
<td>8.25</td>
<td>1.60</td>
<td>3.50</td>
<td>2.28</td>
<td>3.00</td>
<td>2.04</td>
</tr>
<tr>
<td>Avoidance</td>
<td>7.92</td>
<td>2.06</td>
<td>2.08</td>
<td>1.83</td>
<td>1.75</td>
<td>1.76</td>
</tr>
<tr>
<td>Social Impairment</td>
<td>2.10</td>
<td>1.20</td>
<td>0.90</td>
<td>0.87</td>
<td>0.60</td>
<td>0.52</td>
</tr>
<tr>
<td>Family Impairment</td>
<td>1.00</td>
<td>1.49</td>
<td>0.30</td>
<td>0.68</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Work Impairment</td>
<td>2.30</td>
<td>1.25</td>
<td>1.90</td>
<td>0.74</td>
<td>1.20</td>
<td>0.79</td>
</tr>
<tr>
<td>Global Impairment</td>
<td>2.73</td>
<td>1.01</td>
<td>1.64</td>
<td>0.81</td>
<td>1.27</td>
<td>0.79</td>
</tr>
</tbody>
</table>
Table 3
Effect Size for All Analyzed Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPSQ</td>
<td>0.807</td>
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<tr>
<td>SPSEQ</td>
<td>0.780</td>
</tr>
<tr>
<td>SEVERITY</td>
<td>0.705</td>
</tr>
<tr>
<td>ATSHP</td>
<td>0.132</td>
</tr>
<tr>
<td>TB fear</td>
<td>0.864</td>
</tr>
<tr>
<td>TB avoidance</td>
<td>0.901</td>
</tr>
<tr>
<td>Social Impairment</td>
<td>0.550</td>
</tr>
<tr>
<td>Family Impairment</td>
<td>0.418</td>
</tr>
<tr>
<td>Work Impairment</td>
<td>0.391</td>
</tr>
<tr>
<td>Global Impairment</td>
<td>0.473</td>
</tr>
</tbody>
</table>

Note. FPSQ = Fear of Public Speaking Questionnaire; PSSEQ = Public Speaking Self-Efficacy Questionnaire; ATSHP = Attitudes Toward the Self-Help Program; TB = Target behavior.

Measurements of Attitudes Toward the Self-help Program

At the beginning of the treatment, we measured motivation on a 0–10 scale, and the mean motivation was 8.58 (SD = 1.16). When the participants finished the treatment, we measured satisfaction with the treatment on a 0–10 scale. The mean satisfaction was 7.8 (SD = 1.69). The participants also rated the utility of the treatment as 7.8 on a 0–10 scale (SD = 1.93). These data were analysed by ANOVAs in two phases, posttest and follow-up, and we did not find significant differences between these phases.

Another important variable was confidence in the self-help program and confidence in one’s ability to self-apply the program. This questionnaire was completed at three different times: pretest (M = 24.17, SD = 5.79), posttest (M = 26.33, SD = 5.79), and follow-up (M = 25.83, SD = 5.44). The analyses did not show significant differences among these answers. In summary, analyses of these variables indicated that patients had sufficient confidence in this treatment before and after its application.

Finally, given the small size of our sample, we offer the effect sizes of all the analyses carried out in this study (see Table 3). These indexes support the idea that the changes achieved could be attributed to the treatment program.

Discussion

Our results offer preliminary empirical evidence about the utility of “Talk to Me”, a telepsychology self-help program for the treatment of the fear of public speaking.

Consistent with the main aim of this study, the data showed a significant time effect from pretreatment to posttreatment in the measures directly related to the fear of public speaking: Target Behaviors, Fear of Public Speaking Questionnaire, and Public Speaking Self-Efficacy Questionnaire. Furthermore, as we expected, the therapeutic gains achieved were maintained at follow-up. Fear and avoidance regarding public speaking situations decreased significantly. Regarding the self-efficacy measure, our data support the premise that the outcomes achieved were an excellent source of information in the field of performance outcomes. All participants showed an important change in their self-efficacy regarding coping with social situations.

Regarding the impairment measured in three different life areas and global impairment, we found significant differences from pretest to posttest in the social area. As expected, social phobia influenced mainly social activities. However, we did not find significant differences in the work and family area. As can be seen in Table 2, the pretreatment family impairment was low (1 on a 0–4 scale). That could mean that the family area was not influenced by the fear of public speaking in our sample. On the other hand, the patients’ improvement in global impairment was statistically significant from pretreatment to posttreatment. The improvement achieved was maintained at the 1-month follow-up assessment.

We would also like to highlight the changes achieved by the program regarding the participants’ diagnoses. At pretreatment, all participants met DSM-IV criteria for social phobia, whereas at follow-up only 41.66% met such criteria. Also, the social phobia subtype changed at follow-up. As mentioned previously, at pretreatment 8.33% (N = 1) of the participants were diagnosed with generalized social phobia, 66.66% with nongeneralized social phobia, and 25% with specific social phobia. By contrast, at 1-month follow-up, the participants who suffered from nongeneralized social phobia no longer met criteria for social phobia criteria; only 8.33% were diagnosed with nongeneralized social phobia, and 33.33% with specific social phobia. These results showed that the telepsychology program helped the sample improve their social phobia at least decrease the severity of it.

Continuing with diagnosis issues, the degree of agreement between the computer and the therapist was high. This indicates that the computer assessment of our program could be reliable. However, with regard to the possibility of making suitable diagnoses via the Internet, we must acknowledge the difficulties that this task entails. For example, Ström et al. (2000) stated that this problem could not be solved merely by using suitable instruments. There are many other aspects of the diagnosis process that can only be addressed with an expert clinical judgment. In these authors’ view, effectiveness will depend on the severity of the problem addressed and the risks that carrying out a diagnosis process via the Internet could entail.

With regard to the participants’ motivation for starting the treatment program and their satisfaction with it, patients reported high motivation before and after the
treatment. Also, they were highly satisfied at the end of the treatment, probably because “Talk to Me” met their expectations. In addition, they reported high confidence before starting the program, and the confidence level even increased after the treatment (although not to a significant level). This is an important issue in the development of telepsychology treatment programs. The high acceptance of this new method of applying therapy can help increase the number of people who can benefit from psychological treatment and who otherwise might not attend therapy.

In summary, “Talk to Me” was effective as a self-help program in our sample of people who suffered from social phobia. These findings support the preliminary effectiveness of telepsychology as a self-help tool. There were various significant features of our program that were important in achieving efficacy. First, “Talk to Me” is a completely structured program composed of an assessment protocol that offers the patient a diagnosis, including an evaluation of the extent of interference the problem is creating for the participant, its severity, and the degree of fear and avoidance related to public speaking situations. “Talk to Me” also offers a structured treatment protocol, organized into separate blocks. The highly structured nature of the program assures a better understanding of its contents and continuity in the process. Also, the system provides accurate feedback throughout, which makes our program an interactive tool.

An essential characteristic of “Talk to Me” is that the patient does not have complete control over the therapeutic tasks. The program offers a treatment plan for each patient depending on the assessment conducted. It allows the individual to confront his or her fear using several videos of real audiences that people with fear of public speaking usually find threatening. Also, the system ensures that the patient advances in the program only when the therapeutic goals in each phase have been achieved. These are relevant features that can make our telepsychology program a valuable tool for the treatment of the fear of public speaking.

It is important to note some of the limitations of our study. We required the patients to come to our lab for treatment instead of having them practice from home. The rationale for this was that because it was the first time we tested the program, we wanted to be sure that we could intervene if there were clinical or technical problems. Presently we are testing the program in a controlled study using the Internet. Another limitation is that we recruited the sample using an advertisement for Internet treatment. It could be that the participants were self-selected individuals who would be predisposed to believe that Internet treatment is acceptable. It remains to be determined if the acceptability of the program would be the same for people with different views on the utility of telepsychology. Another limitation is the absence of a behavioral avoidance test as an ecologically valid measure. Additionally, in person interrater reliability was not conducted, and when assessing diagnostic status at the 1-month follow-up, raters were not blinded to the fact that participants had undergone treatment. Lastly, other limitations include the small size of the sample and the fact that we did not compare the efficacy of our intervention with another intervention or with a non-treatment condition.

In summary, the combination of new technologies with self-help materials appears to be a promising alternative. It can help overcome some of the problems related to the delivery of effective treatments in mental health. As mentioned in the introduction, it is not always possible to offer suitable treatment to all individuals who need it. Many individuals have not received suitable treatment because of limitations such as lack of financial and/or time resources as well as a lack of practitioners trained in empirically supported treatments. Self-help telepsychology programs offer several advantages regarding these issues: (a) it is less time consuming than contact with a mental health professional; (b) receiving treatment at home assures a high degree of confidentiality and minimizes the stigma related to receiving mental health care; (c) it significantly reduces travel time—that is, it can reach patients who live in remote areas; and (d) scheduling flexibility (at any time during the week, on holidays, and day or night) makes it easier to reach a higher number of people (Bachofen et al., 1999).

It is important to practice caution regarding the confidentiality of data when using these systems. Winzelberg et al. (2000) insisted on the necessity of using well-protected passwords when using the Internet. They also noted the danger of hackers and the risk of using real identities (names and email addresses). Lange et al. (2000) also highlighted the need for safe methods to protect confidentiality, for instance, eliminating participants’ biographical information from the databases. We were sensitive to these issues in the design of our program: we protected confidentiality by using passwords for each participant. Data from the assessment were also protected because nobody but the researchers had access to them. Ethical questions also arise in connection to the practice of people using self-applying treatment programs without the supervision of a therapist. This is an extremely important issue. In this study we chose to obligue patients to come to our lab to ensure that we could intervene if problems arose. However, the final goal is for the patients to be able to self-apply the program from home. In this case, supervision by a therapist is needed, and can be obtained using Internet tools such as e-mail or chatrooms.
It is important to consider the ethical issues regarding these new treatment alternatives. Some preliminary reports note ethical aspects such as providing suitable information to the user about the designers of the system (education and training), and how the system guarantees privacy and confidentiality. Some examples of these reports can be found at http://www.rider.edu/users/suler/psycyber/eliza.html. In Spain, the Psychological Association of Catalonia (COPC) has elaborated a pioneer protocol in order to guarantee the suitability of the therapy offered via the Internet.

Finally, although our results are promising, our data are preliminary. It is necessary to test the efficacy of this treatment in larger samples using group designs, including control groups and other treatment groups. Such studies would increase the confidence in this treatment format. We are currently conducting a controlled study comparing the efficacy of “Talk to Me” delivered via the Internet with the efficacy of “Talk to Me” delivered by a therapist in the consultation room. Also, any statement regarding the effectiveness of a self-help treatment program via the Internet must be taken with caution since most work in this field is yet to be done. As mentioned in the introduction, self-help programs need to be well tested before offering them to the general public. If we continue achieving good results in this field, we will have powerful tools at our disposal for making important advances in the field of mental health.

**References**


Heimberg, R. G., Holt, C. S., Schweier, F. R., Spitzer, R. L., & Liebowitz,


