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INTERNATIONAL APPLICATION OF THE "MULTIDIMENSIONAL INTERVENTION FOR SOCIAL ANXIETY" (MISA) PROGRAM: I. TREATMENT EFFECTIVENESS IN PATIENTS WITH SOCIAL ANXIETY

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Abstract

Social anxiety disorder (SAD) is one of the most prevalent disorders worldwide. The goal of this study was to test the effectiveness of the new program "Multidimensional Intervention for Social Anxiety" (MISA) for the treatment of SAD. Sixty-seven people diagnosed with SAD, according to the DSM-5, participated in this study, and they were assessed by means of a semi-structured interview (Salazar & Caballo, 2018) and two self-report measures for social anxiety, the SAQ (Caballo, Salazar, Arias, et al., 2010) and the LSAS-SR (Liebowitz, 1987). Different therapists delivered the treatment in Ecuador, Spain, Paraguay, and Puerto Rico. The results showed significant improvements from pre-treatment to post-treatment, which were maintained at six months. The effect size was between 1 and 2 and, on many occasions, was greater than 2. Although it was compared with a cognitive behavioral therapy group and a pharmacological treatment group, with favorable results for the MISA program, the low number of subjects in the latter groups does not allow clear deductions to be made. In conclusion, this new program for the treatment of social anxiety seems highly effective in the short and medium term and its positive results seem generalizable to different countries.

KEY WORDS: *social anxiety disorder, social phobia, cognitive-behavioral treatment, MISA program, therapy, effectiveness, effect size*.

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Resumen

El trastorno de ansiedad social (TAS) es uno de los trastornos más frecuentes a nivel mundial. El objetivo de este estudio fue comprobar la eficacia del nuevo programa "Intervención multidimensional para la ansiedad social" (IMAS) para el tratamiento del TAS. Participaron 67 personas diagnosticadas con TAS, según el DSM-5, evaluadas mediante una entrevista semiestructurada (Salazar y Caballo, 2018) y dos medidas de autoinforme para la ansiedad social, el CASO (Caballo, Salazar, Arias, et al., 2010) y la LSAS-SR (Liebowitz, 1987). Diferentes terapeutas aplicaron el programa en Ecuador, España, Paraguay y Puerto Rico. Los resultados mostraron importantes mejoras en el postratamiento, que se mantenían a los seis meses. El tamaño del efecto estaba entre 1 y 2 y, en muchas ocasiones, fue superior a 2. Aunque se comparó con un grupo de terapia cognitivo conductual y otro de tratamiento farmacológico, con resultados favorables para el programa IMAS, el bajo número de sujetos de estos últimos grupos no permite llegar a deducciones claras. En conclusión, este nuevo programa para el tratamiento de la ansiedad social parece altamente eficaz a corto y medio plazo y sus resultados positivos parecen generalizables a diferentes países.

PALABRAS CLAVE: *trastorno de ansiedad social, fobia social, tratamiento cognitivo conductual, programa IMAS, terapia, eficacia, tamaño del efecto*.

Introduction

Social anxiety disorder (SAD) is one of the most common mental disorders among adults, almost always after depressive disorders and alcohol abuse, and is second only to specific phobia among anxiety disorders. The rates reported in the WHO Mental Health Surveys (Kessler & Üstün, 2008) are between 0.2% and 6.8% in the past 12 months and between 0.2% and 12.1% over a lifetime (both in Nigeria and the United States, respectively) (Gureje et al., 2008; Kessler et al., 2008). Globally, the prevalence of SAD is 2.4% in the past 12 months and 4.0% over a lifetime (Stein et al., 2017).

Experiencing some degree of anxiety in social situations is not uncommon and does not, in itself, constitute a disorder. A diagnosis of SAD necessitates excessive levels of anxiety due to the possibility of being exposed to observation and possible evaluation by other people in different social situations. These situations can be varied and range from fear of speaking in a classroom or giving a public talk to conversing with other people, even among family members and friends). Generally, individuals with SAD will try to avoid such situations, but most of the time they will remain in them, enduring them with a lot of distress.

Without proper treatment, SAD does not improve, an issue that seems to be supported by the significant differences observed when contrasting treatment conditions with a waiting list (e.g., Acarturk, Cuijpers, van Straten, & de Graaf, 2009; Mayo-Wilson et al., 2014; Powers, Sigmarsson, & Emmelkamp, 2008; Steinert, Stadter, Stark, & Leichsenring 2017). In addition, people have the feeling that they are not living according to their values and life purposes, but rather in terms of anxiety and avoidance of feared situations. Fortunately, for this disorder there are

effective treatments that aim to reduce symptomatology and improve social functioning.

Among the available psychological treatments, cognitive behavioral therapy (CBT) is the first choice as a well-established treatment (Society of Clinical Psychology, Division 12 of the American Psychological Association, n.d.). By CBT we refer to a conceptual model of treatment rather than a specific intervention protocol (Hofmann, Sawyer, & Fang, 2010), and it includes diverse techniques and procedures, such as exposure therapy, social skills training, relaxation training, rational emotive behavioral therapy, cognitive therapy, or also the combination thereof. These methods attempt to correct false beliefs and cognitive distortions, while providing strategies for people with social anxiety to expose themselves to the feared social situations. Taken together, they are aimed at decreasing emotional distress and problem behaviors (Hofmann et al., 2010).

Reviews and meta-analyses conducted over the past 26 years have pointed out that CBT has immediate and long-term effects on SAD (e.g., Acarturk et al., 2009; Barkowski et al., 2016; Fedoroff, & Taylor, 2001; Feske & Chambless, 1995; Mayo-Wilson et al., 2014; Norton, Abbott, Norberg, & Hunt, 2015; Olatunji & Hollon, 2010; Ponniah & Hollon, 2008; Powers et al., 2008; Taylor, 1996; Wersebe, Sijbrandij, & Cuijpers, 2013). The format used for treatments can be individual or group, as both have been shown to be effective. Four meta-analyses that have analyzed the effect that the format could have on treatment efficacy have reached different conclusions. On the one hand, there are the works by Aderka (2009) and Mayo-Wilson et al. (2014) in which it is concluded that the individual format shows better results than the group format (although there is no comparison between both formats) and, on the other hand, research by Powers et al. (2008) and Acarturk et al. (2009) performed between-group analyses without finding significant differences between both formats, although the group format had a slight difference in its favor. Considering the above, we have to point out some advantages of the group format, such as the ease of performing some activities (e.g., role-playing), peer validation, help and feedback among participants in addition to that of the therapist, the opportunity for live exposure to natural social situations during group sessions, and being a cheaper therapeutic alternative for patients (Barkowski et al., 2016; Pelissolo, 2019; Wersebe et al., 2013).

Focusing on group therapies for SAD, we analyzed six reviews that evaluated their effectiveness and reported on CBTs (Acarturk et al., 2009; Aderka, 2009; Barkowski et al., 2016; Mayo-Wilson et al., 2014; Powers et al., 2008; Wersebe et al., 2013).

Acarturk et al. (2009) estimated Cohen's *d* to report treatment effect size on measures of social anxiety. They reviewed 30 studies of which 24 tested some form of CBT (applied relaxation, cognitive therapy, exposure, exposure + cognitive therapy, systematic desensitization, social skills training) and considered values between 0 and 0.32 to be small, between 0.33 and 0.55 medium, and between 0.56 and 1.2 large (Lipsey & Wilson, 1993). Comparing a total of 47 groups (using 29 studies), they found that the mean effect size was 0.77 (95% CI [0.60-0.94]).

Aderka (2009) analizó 13 trials, with the majority (12) evaluating some form of CBT. The mean effect size (Cohen's *d*) of these treatments on social anxiety

symptoms was 1.01 (95% CI [0.23-1.75]). In addition, he compared 10 trials involving cognitive behavioral group therapy (CBGT) and reported that the mean effect size was 0.92 and the range was between 0.56 (95% CI [0.38-0.74]) the smallest and 1.64 (95% CI [1.54-1.74]) the biggest.

Barkowski et al. (2016) in their meta-analysis of group psychotherapies for SAD included 36 randomized controlled trials (RCTs), in which the majority (28) were CBGT. However, in their analyses they used only 25 groups for comparison and found that the effect size was large for SAD-specific symptomatology (*g*= 0.84, 95% CI [0.72-0.97]) favorable to the psychotherapy group compared to the waiting list condition. In addition, the effect size was large in the CBGT (*g*= 0.83 [0.70-0.97]) and exposure therapy group (*g*= 0.91 [0.61-1.20]), with no significant differences between the two groups. The size of Hedges' *g* was interpreted in the same way as Cohen's *d*, considering 0.20, 0.50 and 0.80 as small, medium, and large effect sizes, respectively.

Mayo-Wilson et al. (2014) estimated treatment effects for each study as a standardized mean difference (SMD) due to variability in the social anxiety measures used. To reduce measurement error, they calculated the mean effect (Hedges' *g*) of all eligible scales for studies that included more than one measure, taking into account the correlation between scales. The SMD in the CBGT (in 28 trials) was 0.92 (95% CI [0.51 to 1.33]), being significantly more effective than the waiting list.

Powers et al. (2008) used 17 randomized controlled trials in which the treatment condition included any of the CBGT options. To calculate the effect size, they used Cohen's *d* or Hedges' *g* depending on the data available in the studies. The effect sizes reported at posttest were medium (Hedges' *g*= 0.67; 95% CI [0.49-0.85] and Cohen's *d*= 0.68; 95% CI [0.50-0.87]).

Wersebe et al. (2013) focused on evaluating the effects of CBGT for SAD in adults, comparing it with waiting list, placebo, or treatment as usual conditions. Eleven randomized controlled trials were included in this work. The identified features of CBGT were the inclusion of live exposure and cognitive interventions such as cognitive restructuring or skills to identify negative thoughts; they consisted of 6 to 16 sessions led by two therapists, lasting two to two and a half hours and involving at least four people. According to the reported effect size (Hedges' *g*= 0.54; 95% CI [0.36-0.73]) there was a moderate but significant difference between intervention (CBGT) and control conditions in favor of the former. Regarding social anxiety specifically assessed with the LSAS (in five of the studies), the effect size was medium (*g*= 0.52; 95% CI [0.21-0.82]).

In recent years, evidence has been accumulating on so-called "third-generation" or "new wave" therapies for SAD, especially mindfulness- and acceptance-based interventions such as Mindfulness-based Stress Reduction Therapy (MBSR; Kabat-Zinn, 1990), Mindfulness-based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002), Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999), and Mindfulness and Acceptance-based Group Therapy (MAGT; Kocovski, Fleming, & Rector, 2009). Studies appraising the effectiveness of these therapies showed promising results, although it seems that there is still a long way to go to be considered as well-established therapies.

Norton et al. (2015) conducted a review including nine studies on mindfulness-based therapies and observed a reduction in symptoms, but found that the benefit obtained was similar to, and sometimes less than, CBT. Specifically, MBSR (three studies) showed significant improvements at posttest (with effect sizes *d*= 0.59, η^2= .41-.75 and *d*= 0.66-1.54, respectively); only the second study reported improvements that were maintained at follow-up (η^2= .58-.68); and only the third study compared with another treatment (CBGT) and reported that MBSR was significantly less effective than CBGT (*d*= 0.28-0.84). MBCT (two studies) showed significant improvements with small to large effect sizes at post-treatment (*d*= 0.32-0.85 and *d*= 0.77, respectively) and medium to large at follow-up (*d*= 0.65-1.30 and *d*= 1.42, respectively). The second of the studies, comparing this intervention with CBGT, reported no significant differences between the two groups. ACT (two studies) showed significant results in terms of reducing social anxiety symptoms at post-treatment, with large and medium effect sizes (*d*= 0.72-1.24 and *d*= 0.57, respectively) and large and small effect sizes at follow-up (*d*= 1.22-1.61 and *d*= 0.19, respectively), however, they had no other conditions with which to compare results. MAGT (two studies) showed significant improvements in social anxiety, with medium effect sizes at post-treatment (*d*= 0.65-0.75 and *d*= 0.62, respectively) and large and small at follow-up (*d*= 1.00-1.19 and *d*= 0.37, respectively). In this second paper, they compared the results with CBGT without finding significant differences.

Liu et al. (2021) published a meta-analysis with 11 randomized trials and four studies on mindfulness-based interventions for SAD. They used Hedges' *g* to calculate the effect size, considering the values mentioned in the previous review for Cohen's *d* for their interpretation. The results showed a significant change with a large effect size in SAD symptomatology after mindfulness-based interventions (*g*= 1.20, 95% CI [0.92-1.48]), but between-group analysis showed it to be equivalent to control conditions (which included CBGT, waiting list, or aerobic exercise) (*g*= 0.00, 95% CI [-0.31-0.30]). Specifically, subgroup analysis revealed that mindfulness-based interventions (MBIs) were superior when compared to the no-treatment group condition (*g*= 0.89; 95% CI [0.53-1.26]) (5 trials), while 2 trials showed that MBIs were equivalent to other active treatment conditions (*g*= 0.19; 95% CI [0.67-1.04]). Six trials showed that MBIs were significantly weaker than CBT (*g*= 0.29; 95% CI [0.10 to 0.48). To conclude with this meta-analysis work, it should be noted that the way in which the authors have reported their results seems somewhat confusing and inconsistent.

García-Pérez & Valdivia-Salas (2018) conducted a review on the effectiveness of ACT in SAD including eight studies, of which three showed that ACT reduced social anxiety symptoms and in five controlled trials ACT was shown to be equally effective as CBT at post-treatment and follow-up.

Mindfulness and acceptance-based programs have been investigated as plausible stand-alone treatments, but also as additive components within a cognitive behavioral approach treatment. The latter is an interesting approach in that it provides new ways of treating the maintenance factors of the disorder.

We would not like to end this review on the effectiveness of treatments for social anxiety without commenting, briefly, on the option of pharmacological therapy. This option is recommended when the patient presents moderate to severe

anxiety symptoms (Keeton & Crosby Budinger, 2012) or when the person does not want to undertake psychological treatment. There are studies indicating that the effects of psychotropic drugs on SAD range from small to moderate and although symptom reduction has effects on quality of life, studies would be required to evaluate the mechanisms of action of pharmacotherapy and establish whether or not there are indeed differences between different classes of psychotropic drugs (Davis, Smits, & Hofmann, 2014). Curtiss, Andrews, Davis, Smits, & Hofmann (2017) reviewed 52 trials and found a small to large effect size in the effectiveness of psychotropic drugs on social anxiety symptoms (Hedges' g= 0.41) compared to placebo. According to psychotropic drug classes, selective serotonin reuptake inhibitors (SSRIs) and monoamine oxidase inhibitors (MAOIs) were the most effective (g= 0.44 95% CI [0.37-0.51] and g= 0.36, 95% CI [0.21-0.51], respectively).

Williams et al. (2020) conducted a meta-analysis of 67 randomized trials and their results indicate that SSRIs had a better treatment response compared to placebo. Paroxetine, in particular, was the most effective in reducing symptom severity compared to placebo and, for this reason, they recommend it as a first-line treatment for SAD, as well as SSRIs in general. However, these results are based on evidence considered to be of low quality.

Having clarified the state of the art of existing treatments for SAD and the demonstrated evidence for their effectiveness, one final issue remains to be addressed: the *multidimensional* nature of social anxiety. The infrequent consideration of this aspect is surprising, especially given the ample empirical evidence supporting it. It suffices to review the literature on the assessment of the disorder, particularly the studies on the various self-report instruments (questionnaires, scales, inventories) used to measure SAD. This has been a long road if we consider that, since the psychometric properties of the first inventories to assess this disorder were analyzed (in the 1970s), empirical data have pointed in the direction that social anxiety is not a unidimensional construct but a multidimensional one (see Caballo, Salazar, Irurtia, Arias, & Nobre, 2013).

For years, Caballo and colleagues have been working on the construction of a new social anxiety assessment measure and, empirically, they succeeded in designing, analyzing and testing the psychometric properties of the "Social Anxiety Questionnaire for Adults" (SAQ) (Caballo et al., 2008, 2012, 2013, 2015; Caballo, Salazar, Arias, et al., 2010; Caballo, Salazar, Irurtia, et al., 2010). The SAQ assesses five dimensions of social anxiety: 1) Interactions with strangers, 2) Interactions with the opposite sex, 3) Assertive expression of annoyance, disgust, or displeasure, 4) Criticism and embarrassment, and 5) Speaking in public/Interacting with persons in authority. This questionnaire, unlike the majority of those most commonly used in this field internationally, was created based on the situations feared by both individuals in the general population and the clinical population with SAD and was refined using a combination of statistical analysis and critical judgment of experts in the field. In addition to providing scores of social anxiety dimensions, the SAQ also provides a global score of overall severity and is sensitive to individual differences between men and women (Caballo et al., 2014).

The findings from the SAQ research also highlighted the importance of having a treatment that addresses the multidimensionality of social anxiety. Cognitive

therapy studies have shown how the inclusion of some specific components (e.g., attention training, imagery rescripting, video feedback to correct negative imagery) have improved intervention outcomes (e.g., Ahn & Kwon, 2018; Alden, Buhr, Robichaud, Trew, & Plasencia, 2018; Schreiber, Heimlich, Schweitzer, & Stangier, 2015; Warnock-Parkes et al., 2017). Given this background on how to improve existing treatments and the consideration of social anxiety as a psychological problem that can be broad-spectrum, we set out to test whether intervening directly on the five dimensions of social anxiety would make this new cognitive behavioral group treatment an effective alternative with better outcomes than the usual treatments for SAD.

This new treatment entailed important challenges, as it had to cover the different dimensions of social anxiety, intervene on the maintenance factors of the disorder, and integrate traditional CBT techniques that present greater empirical support (e.g., exposure, cognitive restructuring, social skills) with those more linked to third-generation therapies and that have also demonstrated their effectiveness in social anxiety problems (e.g., mindfulness, defusion, acceptance). This new protocol materialized in the Multidimensional Intervention for Social Anxiety (MISA; Caballo, Salazar, & Garrido, 2018; Caballo, Salazar, Garrido, Irurtia, & Hofmann, 2018) program and the purpose of this work has been to test the effectiveness of this program. To this end, the primary goal of the current study was to determine whether this novel intervention was efficacious and whether improvements in symptoms were maintained six months after the end of the intervention. A secondary goal of this study was to compare the MISA program with other common treatments for SAD. One of the treatments to be compared was a form of CBT (because it is the psychological treatment of choice with strong empirical support) and the other treatment was pharmacological therapy.

Method

Participants

Eighty-five patients with social anxiety disorder from 5 different countries participated in this study. However, due to various circumstances, we did not obtain post-treatment data from two countries and 28 subjects in total. Therefore, we will only include in the study those countries and patients for whom we have pre/post-treatment data (and in some cases, also follow-up). These participants were 57 people (24 men and 35 women) diagnosed with social anxiety disorder (SAD) or social phobia as their primary problem, according to DSM-5 criteria (American Psychiatric Association [APA], 2013). Of these, 20 were from Ecuador (7 men and 13 women), 25 from Paraguay (12 men and 13 women) and 14 from Spain (5 men and 9 women). The mean age of the patients was 25.51 years (*SD*= 8.15) (ranging from 18 to 57 years), being 25.91 years (*SD*= 8.39) for men and 25.23 years (*SD*= 8.10) for women. Of the participants, 25 had high school studies, 7 had technical studies, 21 had university studies and 4 had postgraduate studies. With respect to current occupation, 33 were studying, 17 were active workers and 7 were unemployed. Regarding the distribution of patients by type of treatment, 45 subjects

underwent the MISA treatment, 7 participated in an individual cognitive behavioral therapy (CBT) group and 5 received an individual pharmacological treatment.

Instruments

The assessment measures were the same for all study participants. An assessment protocol was followed that included a semi-structured interview and a battery of questionnaires, although only the instruments used to assess characteristics related to social anxiety are described below:

a) *Semi-structured Clinical Interview for Social Anxiety* (SCISA) (Salazar & Caballo, 2018). This instrument allows to make a detailed assessment of SAD (and to have some knowledge of other psychological and medical problems, as well as drug use). The duration of the interview is approximately one and a half hours. The instrument has the added value that it can be used as a diagnostic interview, since it includes questions that allow identifying which of the diagnostic criteria for SAD, according to the DSM-5 (APA, 2013), patients meet. The SCISA consists of 11 general headings and five specific sections to assess the five dimensions of social anxiety (Caballo et al., 2012, 2015; Caballo, Salazar, Arias, et al., 2010): 1) Interactions with strangers, 2) Interactions with the opposite sex, 3) Assertive expression of annoyance, disgust, or displeasure, 4) Criticism or embarrassment, and 5) Speaking in public/Interacting with persons in authority. Each dimension begins with screening questions that allow exploring whether the person presents anxiety, fear, or nervousness when facing situations characteristic of the respective social dimension or whether anxiety prevents him/her from facing these situations in an appropriate manner. After these questions, the interviewer has the possibility to indicate (by circling a cross) whether the patient meets the first diagnostic criterion of the DSM-5 (APA, 2013). If the person meets the first diagnostic criterion, the information necessary to perform the clinical characterization of anxiety in each dimension continues to be obtained. Among other information, quantitative data (from 0 to 10) are obtained on four facets: a) *level of anxiety*, b) *frequency of avoidance or escape behaviors*, c) *level of distress*, and d) *level of interference*. At the clinical level, scores equal to or greater than 7 on each facet are considered problematic. For this study, the scores of the four facets were summed to get an overall idea of the severity of the problem in each dimension. Thus, a score equal to or greater than 28 would indicate serious problems in the corresponding dimension. In the fifth dimension (adding public presentation and interaction with persons in authority), the baseline score would be 56.

b) *Social Anxiety Questionnaire for Adults* (SAQ; Caballo, Salazar, Irurtia, Arias, & CISO-A Research Team, 2010). This instrument was developed to assess social anxiety in Spain, Portugal, and most Ibero-American countries. The questionnaire consists of 30 items that are answered using a five-point Likert scale (from 1= "Not at all or very little" to 5= "A lot or very much"), indicating the degree of unease, stress or nervousness experienced in each social situation. The items are grouped into five dimensions (or subscales): 1) Interactions with strangers, 2) Interactions with the opposite sex, 3) Assertive expression of

annoyance, disgust, or displeasure, 4) Criticism or embarrassment, and 5) Speaking in public/Interacting with people in authority. The higher the score, the higher the social anxiety, both in the different dimensions and in the total score. These dimensions have been empirically obtained with more than 30,000 participants, more than 1000 patients and the participation of 18 countries. The psychometric properties of the instrument can be found in Caballo et al. (2012, 2015) and Caballo, Salazar, Arias, et al. (2010). The internal consistency (Cronbach's alpha) for the SAQ total score has ranged from .88 to .93 and that of the dimensions has ranged from .74 to .90. Cut-off points have also been found for men and for women, both for the five dimensions and for the total score (Caballo et al., 2012). These cut-off points are: Dimension 1) 17 for men and 18 for women; Dimension 2) 20 for both men and women; Dimension 3) 21 for men and 19 for women; Dimension 4) 19 for men and 21 for women; and Dimension 5) 19 for men and 23 for women. For the total score, the cut-off point is 92 for men and 97 for women.

c) *Liebowitz Social Anxiety Scale, Self-Report version* (LSAS-SR; Liebowitz, 1987). This instrument consists of 24 items assessing fear or anxiety (Anxiety subscale), on the one hand, and avoidance (Avoidance subscale), on the other hand, of specific social situations. Subjects are asked to rate their fear or anxiety on a Likert-type scale ranging from 0 (none) to 3 (severe) as well as avoidance on the same type of scale, from 0 (never) to 3 (usually). The total score is obtained by adding the Anxiety subscale score and the Avoidance subscale score. The higher the score, the higher the anxiety or avoidance or both. The internal consistency (Cronbach's alpha) found of the total LSAS-SR has ranged from .93 to .95 and that of the subscales has ranged from .83 to .93 (Caballo et al., 2013, 2015; Caballo, Salazar, Arias, et al., 2019; González et al., 1998; Terra et al., 2006). The suggested cutoff point for identifying a subject with elevated social anxiety is 60 (Rytwinski et al., 2009), although that score has been considered excessively low by some studies (e.g., Caballo et al., 2012) and some authors have raised it to 82, especially for Latino participants (Terra et al., 2006).

Procedure

The application of the "Multidimensional Intervention for Social Anxiety" (MISA) program was disseminated through professional social networks and some collaborators of our team in Latin America were contacted regarding the possibility of applying the program in their countries. They were asked about the possibility of implementing the MISA program or another program that they were currently applying in their clinical centers. Collaborators from different countries responded, but for those who opted for the application of the MISA program, we had to limit participation to only those who could afford the application of the program, specifically the purchase of the patient's books.

The participating psychologists who were going to apply the MISA program received a copy of the therapist's book and several copies of the patient's book (depending on the number of participants in each MISA treatment group). Likewise, all therapists (both those applying the MISA program and those using other types of

treatment) received by e-mail a protocol established for the assessment process and a copy of the SCISA as well as a copy of the questionnaires to be applied before and after the treatment (see "Instruments" section). They also received an Excel database to include the data related to the interview and the questionnaires. This same database made it possible to obtain, automatically, the scores and interpretations of the results of the questionnaires. At the 6-month follow-up, the questionnaires used in the pre/post-treatment were applied again.

The offer to participate in the MISA program or in the individual CBT group was disseminated by the means available to each therapist (e-mail, social networks, posters in universities, radio programs), while the patients in the pharmacological treatment group were obtained from the hospital where the professionals who applied it worked. In all cases, the interview (with the help of questionnaires) was used to select the patients who would participate in the treatment groups. Subjects who came voluntarily for treatment of social anxiety had to have a diagnosis of social anxiety disorder (SAD) or social phobia as their main problem. In addition, exclusionary comorbid disorders were schizophrenia spectrum disorder or other psychotic disorders, bipolar disorder, borderline personality disorder, or psychoactive substance use disorder. The maximum number of persons allowed per group was 10 patients and the minimum age for participation was 18 years, with no upper limit. Patients of both sexes were encouraged, although this was not a requirement for forming the group. All participants in this study were patients who voluntarily came for treatment and whose only intended benefit was to improve their social anxiety problem. There was no payment for participation in the research.

TREATMENT GROUPS

Although the main goal of the study was to test the effectiveness of the new IMAS program for the treatment of social anxiety, we decided to include other treatments that also addressed social anxiety intervention, despite the limitations imposed by the short time available. Thus, we obtained five groups that applied the MISA (two in Ecuador, two in Paraguay and one in Spain), a group that used CBT (Paraguay) and a pharmacological therapy group (Spain). Both comparison treatment groups were composed of patients with individual treatment, but we considered them all as two groups.

The *MISA group* received a recently developed psychological intervention (Caballo, Salazar, & Garrido, 2018; Caballo, Salazar, Garrido, et al., 2018) and this is the first time that the results of its application in patients with social anxiety have been evaluated. In the following section, some characteristics of such a program are specified.

The *individual CBT group* was applied by a psychologist with clinical experience following the model of Hofmann (2007) and Hofmann and Otto (2008). The components of this treatment were: 1) psychoeducation about the disorder, 2) attention and situational modification, 3) cognitive restructuring, and 4) exposure and acceptance (unconditional acceptance of reality). In addition, a component of the Clark and Wells (1995) protocol referring to modification of pre- and post-event problematic processing was added. The average number of sessions was 16 (for 4

months), with a duration of 50 minutes each and with a weekly frequency. Four follow-up sessions were held every two weeks. In two cases, five additional follow-up sessions were necessary (one per month).

The *pharmacological therapy group* was applied by psychiatrists in a public hospital in Spain and a combination of psychotropic drugs was used. All patients, except one, were previously taking some type of psychotropic medication. The initial evaluation was performed at the beginning of the specific pharmacological treatment for social anxiety and the second evaluation was performed at a mean of 4.8 months after the first evaluation. Patients continued taking the drugs and between measures 1 and 2 there were modifications of the pharmacological treatments. The pharmacological combinations performed are summarized below.

- Three patients with multimodal antidepressant (e.g., vortioxetine 5 mg) with benzodiazepines (e.g., lorazepam 1 mg or trankimazin 0.5 mg) or selective serotonin reuptake inhibitor (SSRI) (e.g., fluoxetine 20 mg) or anticonvulsant (e.g., gabapentin 300 mg).
- Two patients with SSRI (e.g., paroxetine 20 mg) with benzodiazepines (alprazolam 0.5 mg or lorazepam 1 mg) or anticonvulsant (e.g., gabapentin 300 mg).

MISA PROGRAM OUTLINE

The *Multidimensional Intervention for Social Anxiety* (MISA) program is designed as a group intervention (although it could also be followed in an individual format with some modifications), with a minimum number of 4 and a maximum of 10 patients, ensuring a representation of both sexes. The program has two individual evaluation sessions (before treatment), 15 sessions (weekly, with a duration of two and a half hours each session) of group treatment and two evaluation sessions (one in group and one individual) immediately after the end of the intervention. In addition, a support session (at three months) and two follow-up sessions (one at six and one at 12 months) are encouraged.

The sessions include eight basic components: psychoeducation, values education, acceptance training, mindfulness training, thought restructuring and detachment (defusion), social skills training, exposure, and homework. The components are developed through instructions, group rehearsals, self-exposure, self- and group feedback, exercises in and out of each session, psychoeducation material and homework.

In order for the program to be carried out, the psychologist has a Therapist's Guidebook, and each participant needs a Patient's Workbook to be able to follow the program. In these books, each session is described step by step, with all the information the patient needs to know and all the exercises to practice, both inside and outside the session. It is a closed and complete program, which does not require additional information that is not contained in the two books that make up the MISA program. To learn more in depth about it, a summary can be found in Caballo, Salazar, and Hofmann (2019) or the guides themselves, both for the therapist (Caballo, Salazar, Garrido, et al., 2018) and for the patient (Caballo, Salazar, & Garrido, 2018).

Data analysis

To compare differences between pretreatment, posttreatment, and follow-up scores, we used Student's *t* tests, once we had verified that the assumption of normality (Shapiro-Wilk *W*) and sufficient homogeneity of variances had been met for most of the relevant variables. In addition, we estimated the same models in their nonparametric version (Wilcoxon rank test) to verify that both procedures reached the same conclusions.

Second, we explored possible interaction effects by sex on the SAQ scores. To do so, we employed both visual exploration of mean difference plots and path models with an interaction term (Hayes, 2017).

Finally, we compared the results of the MISA group with the other two treatment groups using the Man-Whitney U test for the contrast of means. Given the small sample size of the individual CBT and pharmacological therapy groups, these results should be interpreted as tentative.

To estimate the effect size of the pre/post-treatment and post-treatment/follow-up differences in the MISA group, we used Cohen's *d*, whereas to estimate the effect size of the same differences in the individual CBT and pharmacological therapy groups, as well as in the between-group comparisons, we used the biserial rank correlation (*r*). The formulas used for the calculation of effect sizes were:

$$d = \frac{M_{pos} - M_{pre}}{(DT_{pos} + DT_{pre})/_2} \; ; \; r = Z/\sqrt{N}$$

Cohen's *d* was interpreted considering that values between 0.20 and 0.49 were small, between 0.50 and 0.79 were medium and from 0.80 onwards were large. The *r* was interpreted considering that values between .10 and .29 were small, between .30 and .49 were medium, and from .50 onwards were large.

Results

Pre/post-treatment differences in the MISA group

Regarding the differences in the pre/post-treatment scores of the different assessment instruments used, the results are in complete agreement whether we use parametric or non-parametric tests, with consistent significance levels (p) and effect sizes. Although to some extent the use of both types of statistics seems redundant, we wanted to be sure of the robustness of the differences found, especially since the sample size was not very large.

DIFFERENCES IN SOCIAL ANXIETY AS ASSESSED BY THE SAQ

Table 1 shows the results of the contrast of means in the SAQ scores for the whole group (*N*= 45). In all cases, post-treatment scores were significantly lower (*p*<

.0001), with large effect sizes (between 1.36 in the dimension "Interactions with the opposite sex" to 1.97 in the dimensions "Interactions with strangers" and "Criticism and embarrassment").

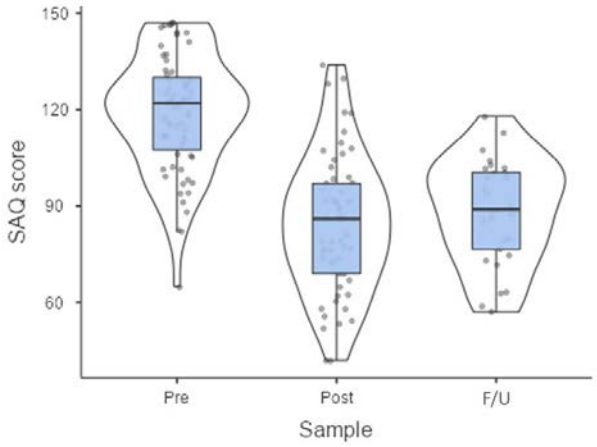
Table 1
Pre/post-treatment differences of the MISA group (*N*= 45) on the Social Anxiety Questionnaire for adults (SAQ)

SAQ and its dimensions	Pretreatment		Posttreatment		Diff.	*t*	*d*	95% IC for *d*	
	M	*SD*	*M*	*SD*				LL	LU
1. Interactions strangers	23.84	4.51	15.02	4.44	8.82	10.47	1.97	1.25	2.68
2. Interactions opposite sex	24.80	5.77	17.38	5.13	7.42	8.72	1.36	0.70	2.00
3. Assertive expression	22.89	4.80	15.60	4.36	7.29	9.02	1.59	0.91	2.26
4. Criticism & embarrassm.	23.87	3.47	15.67	4.76	8.20	10.47	1.97	1.24	2.68
5. Speak pub./ Interac. auth.	24.31	4.69	16.18	4.81	8.13	9.86	1.71	1.01	2.39
Total	119.71	18.99	79.84	20.89	39.87	11.23	2.00	1.27	2.71

Notes: SAQ= Social Anxiety Questionnaire for adults; Diff.= Differences between pre- and post-treatment means; *d*= Cohen's *d*; LL= lower limit; UL= upper limit. All mean differences were significant ($p < .0001$).

Figure 1 shows the density functions, box plots and scatter plots of the SAQ total scores at pre-, post-treatment, and six months follow-up.

Figure 1
Distribution of SAQ scores at pre-, post-treatment, and six months follow-up



Given that the SAQ has different cut-off scores for men and women in most dimensions, we performed separate analyses by sex. Table 2 presents the means and

standard deviations of the SAQ scores of men and women before and after completion of treatment with the MISA program. The number of men with pretreatment measures was 17 and the number of women was 28. There were no significant differences between them in pretreatment scores on any of the SAQ dimensions or in the overall SAQ score. This same number of men and women responded to posttreatment measures.

All pre/post-treatment differences are statistically significant, with social anxiety at post-treatment markedly reduced relative to pre-treatment scores. These results were supported both in analyses with Student's *t* test (men [$p < .001$]; women [$p < .001$]) and Wilcoxon signed-rank test (men [$p < .01$]; women [$p < .01$]). While in the pretreatment assessment the means of all dimensions and the total SAQ score were above the cut-off point, in the post-treatment assessment all these scores had fallen, significantly, below the cut-off point in both women and men.

We also wanted to measure the effect size of the pre/post-treatment differences to find out to what extent the MISA program had been effective in decreasing the participants' level of social anxiety (Table 2). In all dimensions and in the total score, the effect size was large ($d > 0.8$), being usually greater than 1.3 (very large) and even becoming greater than 2 in some dimensions and in the total score (women). Nonparametric analyses gave analogous results, with large effect sizes in all cases ($r > .50$).

Table 2

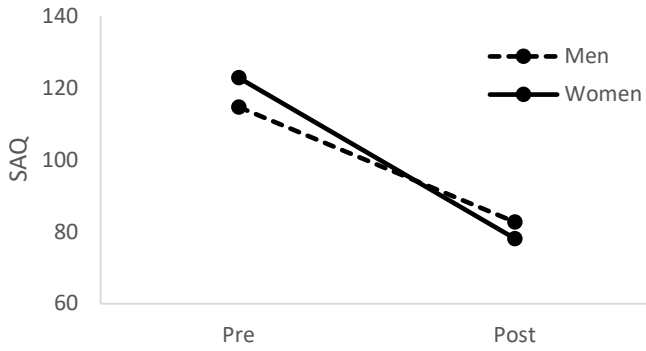
Pre/post-treatment differences in men ($n = 17$) and women ($n = 28$) of the MISA group on the Social Anxiety Questionnaire for adults (SAQ)

SAQ and its dimensions	Gender	Pretreatment		Posttreatment		Diff.	*t*	Cohen's *d*
		M	*SD*	*M*	*SD*			
1. Interactions strangers	Men	24.76	3.15	16.41	4.34	8.35	6.57	2.20
	Women	23.28	5.14	14.18	4.35	9.11	8.09	1.91
2. Interactions opposite sex	Men	23.53	6.56	17.94	5.88	5.59	4.35*	0.90
	Women	25.57	5.21	17.03	4.70	8.53	7.85	1.72
3. Assertive expression	Men	21.12	4.66	15.70	3.35	5.42	4.35*	1.33
	Women	23.96	4.64	15.53	4.93	7.69	8.31	1.76
4. Criticism & embarrassm.	Men	22.82	2.45	16.06	4.44	6.76	6.30	1.88
	Women	24.50	3.86	15.43	5.01	9.07	8.59	2.03
5. Speak pub/ Interac. auth.	Men	22.41	4.40	16.59	5.11	5.82	5.33	1.22
	Women	25.46	4.56	15.93	4.69	9.53	8.85	2.06
Total	Men	114.65	17.57	82.70	20.84	31.95	6.51	1.66
	Women	122.78	19.47	78.11	21.11	44.68	9.51	2.20

Notes: SAQ= Social Anxiety Questionnaire for adults; Diff.= differences in means between pre- and post-treatment. All means at post-treatment were below the cut-off point. All mean differences were significant ($p < .0001$) except for *$p < .001$.

Although the results by gender were consistent with those of the whole group (Table 1), there were differences in effect size between men and women, of varying magnitude depending on the dimension analyzed. However, after estimating the interaction path models in all dimensions, the regression coefficients of the interaction term were in all cases non-significant ($p > .05$). As an example, Figure 2 shows the means of the overall SAQ score in men and women, before and after treatment. There appears to be a slight interaction effect, which, however, is not significant ($\Lambda = -.26$; $p = .53$).

Figure 2
Mean SAQ scores by gender before and after treatment



DIFFERENCES IN SOCIAL ANXIETY AS ASSESSED BY THE LSAS-SR

We also analyzed the pre/post-treatment differences in social anxiety with the LSAS-SR. Since this questionnaire does not have different cut-off points for men and women, we considered the sample of participants as a whole ($N = 44$, plus one subject not answering all the items). Table 3 shows these results. The pre/post-treatment differences are highly significant in all cases, with social anxiety at post-treatment significantly lower than that assessed before treatment. These results were obtained in both Student's *t*-test and Wilcoxon signed-rank test analyses ($p < .0001$ in all cases). We also estimated the effect size with Cohen's *d* and found that in all dimensions and in the total score the effect size was large ($d > 0.8$). Although, as we said, a cutoff point of 60 has been proposed for this scale (Rytwinski et al., 2009), there are authors who have considered that score to be too low, at least with Latino population (e.g., Caballo et al., 2012; Terra et al., 2006). The latter authors have proposed that a cutoff point of 82 would be closer to reality. In any case, the post-treatment LSAS-SR score of the MISA group was lower than 60.

Table 3
Pre/post-treatment differences of the MISA group (*N*= 44) on the Liebowitz Social Anxiety Scale - Self-Report version (LSAS-SR)

LSAS-SR and its subscales	Pretreatment		Posttreatment		Diff.	*t*	*d*	95% IC for *d*	
	M	*SD*	*M*	*SD*				LL	LU
Anxiety	46.27	12.82	32.52	15.17	13.75	6.43	1.00	0.38	1.62
Avoidance	41.89	14.05	25.41	10.64	16.48	8.31	1.34	0.69	1.99
Total	88.16	26.16	57.93	24.57	30.23	7.88	1.21	0.57	1.85

Notes: LSAS-SR= *Liebowitz Social Anxiety Scale – Self Report version*; Diff.= mean differences between pre- and post-treatment; *d*= Cohen's *d*; LL= lower limit; UL= upper limit. All mean differences were significant ($p < .0001$).

DIFFERENCES IN SOCIAL ANXIETY AS ASSESSED BY THE INTERVIEW (SCISA)

The Semi-Structured Clinical Interview for Social Anxiety (SCISA) evaluates, among other variables, the five dimensions of social anxiety, focusing on four facets of each dimension, i.e., level of anxiety, distress, avoidance, and interference, with 10 being the maximum score and 0 the minimum. Table 4 shows that the mean scores for the four facets of each dimension were ≥ 7 (cut-off point established at the clinical level), except for the *Interacting with persons in authority* subdimension which was close to 7, and the overall mean for each dimension (obtained from the sum of the four facets) was above 28. Then, at post-treatment all means decreased considerably and all facets were below 7 (even below 5, except for the "Anxiety" facet of the *Speaking in public* subdimension) and the overall severity level means for the dimensions did not reach 20 (the cut-off point was 28). Statistical analyses confirm that the pre/post-treatment differences found were highly significant in all dimensions and in all facets of each dimension, with social anxiety at post-treatment significantly lower than that assessed before treatment. These results were given in both Student's t-test and Wilcoxon signed-rank test analyses ($p < .001$ in all cases). We also estimated the effect size, which was large in all dimensions and their facets ($d > 0.8$), being greater than 1.3 (very large) in most cases and greater than 2 in some dimensions and facets and in the total interview score.

Table 4
Pre/post-treatment differences (*N*= 44) in the MISA group in the five dimensions of social anxiety assessed with the Semi-structured Clinical Interview for Social Anxiety (SCISA)

Dimensions' SCISA	Facets	Pre-treatment		Post-treatment		Diff.	*t*	Cohen's *d*
		M	*DT*	*M*	*DT*			
1. Interactions strangers	Anxiety	7.09	1.79	4.09	1.9	3.00	8.72	1.62
	Avoidance	7.34	2.16	4.09	1.9	3.25	8.38	1.54
	Distress	7.23	1.96	3.98	1.99	3.25	8.27	1.64
	Interference	7.77	2.02	4.25	2.24	3.52	9.56	1.65
	Total	29.43	6.52	16.68	6.84	12.75	10.2	1.91
2. Interactions opposite sex	Anxiety	8.44	1.20	4.60	2.25	3.84	11.4	2.13
	Avoidance	8.30	1.96	4.60	2.25	3.70	9.58	1.73
	Distress	8.21	1.74	4.12	1.97	4.09	10.8	2.20
	Interference	7.98	1.82	4.39	2.40	3.58	8.55	1.68
	Total	32.93	5.31	17.42	8.50	15.51	11.8	2.15
3. Assertive expression	Anxiety	7.98	1.64	4.51	1.99	3.47	9.26	1.90
	Avoidance	7.82	2.11	4.18	2.01	3.64	8.79	1.77
	Distress	7.71	1.63	3.93	2.12	3.78	11.10	2.00
	Interference	7.84	1.87	3.73	2.17	4.11	10.40	2.03
	Total	31.35	6.13	16.35	7.82	15.00	10.90	2.13
4. Criticism & embarrassm.	Anxiety	8.35	1.67	4.80	1.89	3.55	10.3	1.99
	Avoidance	7.93	1.99	4.44	2.52	3.49	8.26	1.54
	Distress	8.07	1.85	4.60	2.26	3.47	8.25	1.68
	Interference	7.24	2.28	4.40	2.39	2.84	6.56	1.21
	Total	31.60	6.38	18.24	8.44	13.35	9.32	1.78
5a. Speaking in public	Anxiety	8.02	2.54	5.89	1.94	2.13	5.12	0.94
	Avoidance	7.78	2.66	4.35	2.44	3.42	7.02	1.34
	Distress	8.11	2.07	4.75	2.14	3.35	8.21	1.59
	Interference	7.35	2.40	4.62	2.10	2.73	6.42	1.21
	Total	31.27	8.67	19.62	7.67	11.64	7.64	1.42
5b. Interact. persons auth.	Anxiety	6.57	2.82	4.59	2.18	1.98	4.54	0.78
	Avoidance	6.69	2.91	3.98	2.14	2.71	5.44	1.06
	Distress	6.95	2.70	4.20	2.09	2.75	5.35	1.14
	Interference	6.75	2.65	3.87	2.21	2.89	6.19	1.18
	Total	26.89	10.01	16.82	7.73	10.07	5.99	1.13
5= 5a + 5b	Total 5th.	58.14	16.86	36.75	14.28	21.39	7.49	1.37
Total interview	Total	185.09	30.78	105.09	38.88	80.00	12.20	2.28

Notes: SCISA= Semi-structured Clinical Interview for Social Anxiety; Diff.= mean differences between pre- and post-treatment. All mean differences were significant ($p < .001$). The 5th dimension has been split into two sub-dimensions, 5a and 5b, although the total score of this dimension is also included.

Post-treatment/follow-up differences in the MISA group

Some of the patients in the study were able to participate in follow-up measures 6 months after completion of treatment. The number of men with follow-up measures was 10 and the number of women was 15. No significant differences were found between men and women in the follow-up scores. Participants from Ecuador had no follow-up measures.

DIFFERENCES IN SOCIAL ANXIETY AS ASSESSED BY THE SAQ

One of the goals of the program was to find out whether the improvements achieved by the MISA program were maintained for a certain period of time after its completion. To this end, follow-up evaluations were scheduled at 6 months. Table 5 shows the results of the analysis for the entire group (*N*= 25). Patients continued to improve at 6 months after treatment in all dimensions of the SAQ and in the total score, but only in the dimension *Interaction with strangers* was the improvement statistically significant ($p< .05$). This result was confirmed with the Wilcoxon signed-rank test ($p< .05$). In the fifth dimension, *Speaking in public/Interacting with people in authority* the difference was significant with Wilcoxon's rank test ($p< .05$), but not with Student's *t*-test ($p= .06$).

Table 5
Post-treatment/six-month follow-up differences (*N*= 25) in the MISA group on the Social Anxiety Questionnaire for Adults (SAQ)

SAQ and its dimensions	Post-treatment		Follow-up		Diff.	*t*	*p*	*d*	95% IC for *d*	
	M	*DT*	*M*	*DT*					LL	UL
1. Interactions strangers	17.16	4.28	15.08	4.01	2.08	2.66	**.01**	0.50	-0.09	1.09
2. Interactions opposite sex	20.00	5.07	19.44	5.57	0.56	0.56	.58	--	--	--
3. Assertive expression	18.36	3.43	18.00	3.58	0.36	0.50	.62	--	--	--
4. Criticism & embarrassm.	17.88	4.59	17.08	4.42	0.29	0.28	.78	--	--	--
5. Speak pub/ Interac. auth.	19.08	3.23	17.46	2.95	1.63	2.03	.06	0.52	-0.07	1.11
Total	92.21	17.71	86.58	16.94	5.63	1.56	.13	--	--	--

Notes: SAQ= Social Anxiety Questionnaire for adults; Diff.= differences in means between post-treatment and follow-up; *d*= Cohen's *d*; LL= lower limit; UL= upper limit. In bold, the only dimension of the SAQ in which there were significant differences.

Table 6 shows the results of the same former analysis but according to sex. Both men and women improved in practically all cases six months after the end of treatment, although the differences were not statistically significant ($p> .05$) when compared with their scores just after the end of treatment. These results occurred in both Student's *t*-test and Wilcoxon signed-rank test analyses in both sexes. Only

in the dimension *Interaction with strangers* was the improvement of women statistically significant ($p < .05$), with lower scores in that dimension six months after the end of treatment. This difference was not supported by the non-parametric contrast ($p = .07$). In any case, the size of this difference in women was small ($d = 0.44$).

In addition, at the six-month follow-up assessment the means of all dimensions and the SAQ total score remained below the cut-off point in both women and men, except for the latter in the dimension of *Interaction with the opposite sex*, who scored 0.20 above the cut-off point (20), although their score had decreased from post-treatment to follow-up.

Table 6

Post-treatment/follow-up differences in women ($n = 15$) and men ($n = 10$) of the MISA group at six months on the Social Anxiety Questionnaire for adults (SAQ)

SAQ and its dimensions	Gender	Post-treatment		Follow-up		Diff.	*t*	*p*	Cohen's *d*
		M	*SD*	*M*	*SD*				
1. Interactions strangers	Men	18.70	3.97	16.30	3.68	2.40	1.57	.151	--
	Women	16.13	4.29	14.27	4.13	1.87	2.17	**.048**	0.44
2. Interactions opposite sex	Men	21.30	4.94	20.20[a]	4.39	1.10	0.70	.500	--
	Women	19.13	5.14	18.93	6.33	0.20	0.15	.884	--
3. Assertive expression	Men	17.40	2.95	17.60	3.27	-0.20	-0.22	.832	--
	Women	19.00	3.66	18.27	3.86	0.73	0.70	.492	--
4. Criticism & embarrassm.	Men	17.80	4.66	17.60	4.65	0.20	0.16	.878	--
	Women	17.93	4.71	16.73	4.40	1.20	1.05	.311	--
5. Speak pub/ Interac. Auth.	Men	19.40	3.83	17.50	3.86	1.90	1.33	.215	--
	Women	18.86	2.85	17.43	2.24	1.43	1.47	.165	--
Total	Men	94.60	17.86	89.20	17.87	5.40	0.89	.394	--
	Women	90.50	18.07	84.71	16.65	5.78	1.25	.234	--

Notes: SAQ= Social Anxiety Questionnaire for adults; Diff.= differences in means between post-treatment and follow-up. All means at follow-up, except one ([a]), were below the cut-off point. In bold the condition in which there were significant differences.

Differences in social anxiety as assessed by the LSAS-SR

We analyzed post-treatment/follow-up differences in social anxiety through the LSAS-SR. Table 7 presents these results. The post-treatment/follow-up differences show that patients improved in all cases at six months after the end of treatment and the differences were statistically significant in both the Anxiety subscale ($p > .01$) and the total score ($p < .05$) (both parametric and non-parametric contrasts) when compared to their scores just at the end of treatment. The follow-up total score was equal to the cut-off point of 60, but far from the cut-off point of 82 proposed by some authors, as we pointed out previously.

Table 7
Post-treatment/follow-up differences of the MISA group (*N*= 24) on the Liebowitz Social Anxiety Scale - Self-Report version (LSAS-SR)

LSAS-SR and its subscales	Posttreatment		Follow-up		Diff.	*t*	*p*	*d*	95% IC for *d*	
	M	*SD*	*M*	*SD*					LL	UL
Anxiety	41.04	14.65	32.75	11.87	8.29	3.29	**.003**	0.62	0.01	1.22
Avoidance	29.50	11.31	27.25	10.54	2.25	1.19	.244	--		
Total	70.54	24.50	60.00	20.95	10.54	2.70	**.013**	0.46	-0.14	1.06

Notes: LSAS-SR= Liebowitz Social Anxiety Scale – Self Report version; Diff.= mean differences between post-treatment and follow-up results; *d*= Cohen's *d*; LL= lower limit; UL= upper limit. Significant differences are shown in bold.

Pre/post-treatment differences in the individual CBT group

Although with the consequent precautions on these results due to the low number of subjects in the individual CBT group (*N*= 7), the findings obtained for this group by means of the Wilcoxon signed-rank test showed a significant improvement in social anxiety at post-treatment with regard to the scores at pre-treatment in all dimensions of the SAQ ($p < .05$) as well as globally ($p < .05$). These improvements were confirmed with the LSAS-SR, where scores at post-treatment were significantly lower ($p < .05$) on the Anxiety, and Avoidance subscales and on the total score. The interview scores continued to confirm this improvement, as anxiety decreased in all dimensions of social anxiety significantly ($p < .05$), except in the facet "Avoidance" in dimensions 1, 2, 3, 4 and subdimension 5b, in the facet "Anxiety" in dimensions 3 and 4 and in the facet "Interference" in dimension 4. When we consider the effect size of the pre/post-treatment differences, we found that in all dimensions and in the SAQ total score the effect size was large ($r > .5$). In the subscales and in the LSAS-SR total score, the effect size was also large ($r > .5$), as well as in the dimensions of social anxiety and its facets measured by the interview (SCISA), except in the facet "Avoidance" of subdimension 5b, which was medium ($.3 > r < .5$).

Pre/post-treatment differences in the pharmacological therapy group

The findings in the pharmacological therapy group should be considered with the same cautions as in the case of the individual CBT group due to the low number of participating patients (*N*= 5). The results obtained for this group by means of the Wilcoxon signed-rank test showed an improvement in social anxiety at posttreatment with regard to pretreatment scores in virtually all the variables assessed. However, only in two of the five dimensions of the SAQ, specifically *Criticism or embarrassment* and *Speaking in public/Interacting with people in authority* were these differences significant ($p < .05$). These differences were not confirmed by the results of the interview, where no significant pre/post-treatment differences were found in any of the dimensions or their facets. Neither did the LSAS-SR reflect significant pre/post-treatment differences. When we considered the effect size of the two previous dimensions in which the differences were statistically significant, the effect size was large ($r > .5$).

Comparison of treatment groups

There were no pretreatment differences between patients of the MISA group and those of the other two intervention groups (individual CBT, pharmacological treatment) in any of the questionnaires assessing social anxiety (SAQ and LSAS-SR), except in dimension 4 of the SAQ (*Criticism or embarrassment*) between the MISA group and the pharmacological treatment group ($p < .05$), the latter scoring higher in anxiety ($p < .05$). In the 32 sections of the interview (SCISA), we only found significant differences ($p < .05$) between the MISA group and the individual CBT group in two of them, the two relating to dimension 1*, Interactions with strangers*, in the facets of "Anxiety" (the individual CBT group scored higher) and "Interference" (the MISA group scored higher). Between the MISA group and the pharmacological therapy group there were differences in only two facets ($p < .05$), one in the "Interference" facet of dimension 1, *Interactions with strangers*, and one in the "Avoidance" facet of subdimension 5a, *Speaking in public*. Given that these differences were not stable (they were not confirmed by the questionnaire and the interview) and given that at the level of each overall dimension there were no significant differences in any case, we did not take into account these pre-treatment differences. On the other hand, there were significant differences in the age of the participants between the pharmacological treatment group and the other two groups (MISA, individual CBT), with the mean age of the first group being higher than that of the subjects in the other two groups ($p < .05$).

Regarding the differences between the MISA group and the other two groups (individual CBT, pharmacological treatment) in post-treatment, we have to consider the results with caution, as we have been insisting, given the low number of patients in the latter two groups. In the case of the differences between the MISA group and the individual CBT group, the latter group maintained higher levels of anxiety (Mann-Whitney U) in the two self-report measures of social anxiety (SAQ and LSAS-SR) after treatment. However, these differences were only significant ($p < .05$) in the SAQ dimensions, *Interactions with strangers* and *Speaking in public/Interacting with people in authority*, as well as in the SAQ total score. These differences were confirmed with the interview (SCISA), in which there were significant differences ($p < .05$) in all dimensions, except in the subdimension *Speaking in public*, although in the associated subdimension Interacting with persons in authority there were also significant differences ($p < .05$). The difference was also significant in the total interview score ($p < .05$). In all cases, the individual CBT group scores on social anxiety were higher than the MISA group scores. The effect size of these differences, in all cases, was medium ($.3 > r < .5$) (see Table 8).

Table 8
Means and standard deviations at post-treatment between the MISA group (*n*= 45) and the individual CBT group (*n*= 7) on the SAQ and the LSAS-SR and nonparametric comparison (Mann-Whitney U) of the differences between these two groups

Self-report measures	MISA group		Individual CBT group		*Z*	*p*	*r*
SAQ and its dimensions	*M*	*SD*	*M*	*SD*			
1. Interactions strangers	15.02	4.44	19.14	1.57	-2.56	**.010**	.35
2. Interactions opposite sex	17.38	5.13	20.57	3.50	-1.80	.072	--
3. Assertive expression	15.60	4.36	18.28	1.98	-1.81	.070	--
4. Criticism & embarrassm.	15.67	4.76	17.43	2.30	-1.46	.144	--
5. Speak pub/ Interac. auth	16.18	4.81	20.28	3.95	-1.98	**.047**	.27
Total	79.84	20.89	95.71	8.86	-2.22	**.026**	.31
LSAS-SR and its subscales							
Anxiety	32.52	15.17	36.57	8.26	-1.04	.298	--
Avoidance	25.41	10.64	29.14	11.22	-1.08	.280	--
Total	57.93	24.57	65.71	18.04	-1.09	.273	--

Notes: SAQ= Social Anxiety Questionnaire for adults; LSAS-SR= Liebowitz Social Anxiety Scale – Self Report version; MISA= Multidimensional Intervention for Social Anxiety; CBT= cognitive behavioral therapy; *r*= effect size for the Mann-Whitney U test. Significant differences between groups are in bold.

In the case of the differences between the MISA group and the pharmacological therapy group, the latter group maintained higher levels of anxiety in the two self-report measures of social anxiety (SAQ and LSAS-SR) after treatment, as well as in almost all dimensions and facets of the interview. However, they were significant (Mann-Whitney U) only in the dimensions *Assertive expression of annoyance, disgust, or displeasure* ($p < .05$), *Criticism or embarrassment* ($p < .01$) and Speaking in public/Interacting with people in authority ($p < .05$), as well as in the SAQ total score (Table 9). Although these differences at post-treatment were confirmed by the interview, with higher scores in the pharmacological therapy group in almost all facets, only in some facets did they become significant, such as in several facets of the dimensions of *Criticism or embarrassment* ("Avoidance" and "Distress") ($p < .05$), of the subdimension *Speaking in public* ("Avoidance") ($p < .05$) and of the subdimension *Interacting with persons in authority* ("Avoidance", "Distress", "Interference", and total), as well as in the overall interview score ($p < .05$). The effect size of the differences was medium in all cases ($.3 > r < .5$), except for one ("Avoidance" in the *Criticism or embarrassment* dimension), which was small ($r = .29$) (see Table 9).

Table 9
Means and standard deviations at post-treatment between the MISA group (*n*= 45) and the pharmacological treatment group (*n*= 5) on the SAQ and the LSAS-SR and nonparametric comparison (Mann-Whitney U) of the differences between these two groups

Self-report measures	MISA group		Pharmacological therapy group		*Z*	*p*	*r*
	M	*DT*	*M*	*DT*			
SAQ and its dimensions							
1. Interactions strangers	15.02	4.44	19.40	5.86	-1.57	.117	--
2. Interactions opposite sex	17.38	5.13	21.20	4.27	-1.70	.089	--
3. Assertive expression	15.60	4.36	22.40	5.27	-2.44	**.015**	.34
4. Criticism & embarrassm.	15.67	4.76	23.00	3.39	-2.81	**.005**	.40
5. Speak pub/ Interac. auth	16.18	4.81	22.40	4.77	-2.47	**.013**	.35
Total	79.84	20.89	108.40	21.11	-2.49	**.013**	.35
LSAS-SR and its subscales							
Anxiety	32.52	15.17	38.00	11.66	-0.84	.400	--
Avoidance	25.41	10.64	28.40	9.71	-0.61	.541	--
Total	57.93	24.57	66.40	20.65	-0.73	.467	--

Notes: SAQ= Social Anxiety Questionnaire for adults; LSAS-SR= Liebowitz Social Anxiety Scale – Self Report version; MISA= Multidimensional Intervention for Social Anxiety; *r*= effect size for the Mann-Whitney U test. Significant differences between groups are in bold.

Discussion

Although cognitive behavioral therapy is proven to be the treatment of choice for social anxiety and is routinely used in social anxiety intervention (Barkowski et al., 2016; Mayo-Wilson et al., 2014; Norton et al., 2015; Society of Clinical Psychology, Division 12 of the American Psychological Association, n.d.; Wersebe et al., 2013), our intention was to develop a new systematic program encompassing the best of traditional cognitive behavioral therapy and third-generation therapies and targetting the five dimensions of social anxiety found by our research team (Caballo et al., 2012, 2015; Caballo, Salazar, Arias, et al., 2010; Caballo, Salazar, Irurtia, et al., 2010). After having researched social anxiety for more than 10 years with more than 30,000 subjects and more than 1000 patients and empirically validated these five dimensions, we find it surprising that they are not systematically assessed by the instruments currently used (except for the SAQ) nor are all of them explicitly included in social anxiety treatment programs. This study presents the first results obtained with the application of the new *Multidimensional Intervention for Social Anxiety* (MISA) program in a sample of patients from Spain and Latin America. Different clinical psychologists from various countries who had the MISA program protocol, materialized in two books, one that served as a guide for the therapist and another that served as a guide, and worked as a kind of diary, for the patients, participated in the study. The main goal of the study was to determine the

effectiveness of the program with evaluations at the end of the program and six months after its completion. As a secondary goal, we set out to compare the MISA program with other forms of treatment for social anxiety, such as individual cognitive behavioral therapy (individual CBT) and pharmacological therapy.

Regarding the main research goal, results corroborated the efficacy of the MISA program in decreasing social anxiety, measured by two self-report instruments and a semi-structured interview. After four months of intervention (15 sessions), patients' score in social anxiety was below the cut-off point in all dimensions of social anxiety, as assessed by the SAQ, in the Anxiety and Avoidance subscales of the LSAS-SR and in global social anxiety, as measured by the SAQ and the LSAS-SR. All these data were confirmed by those obtained in the interview, so that patients improved significantly in all dimensions of social anxiety. Thus, from a mean score above the cut-off point of 7 in all facets of the five dimensions before treatment, the mean scores were reduced to below 7 after treatment, which is clinically and statistically significant improvement. Through the interview we also found that the patients no longer met the DSM-5 diagnostic criteria (APA, 2013), indicating that the participants, as a group, would no longer be considered clinical subjects diagnosable with social anxiety disorder. When we analyzed symptom severity at the six-month follow-up assessment, we found that patients not only maintained symptom reduction, but, in many cases, experienced greater improvements, although they did not become statistically significant. The results of the nonparametric tests were basically the same as those of the parametric measures, so both types of statistics confirmed the same results. When we analyzed to what extent these improvements were significant by finding the effect size through Cohen's d, in all measures the effect size was large (d> 0.80), in most cases d> 1.00 and in some cases d> 2.00. Based on the collective results of the current study, the MISA program is highly effective for the treatment SAD.

Moreover, the MISA program was compared with two other common treatments for social anxiety, including individual CBT and pharmacological therapy. Non-parametric analyses suggested that the MISA program was superior, on many measures, to individual CBT and, especially, to pharmacological treatment. This superiority was more noticeable in the SAQ than in the LSAS-SR. The possible reason is that the SAQ assesses social anxiety across many dimensions, covering a much wider range of social situations than the LSAS-SR. For example, in a factor analysis of the LSAS-SR (Caballo et al., 2013) only the dimensions of *Interactions with strangers* (7 items) and *Speaking in public/Interacting with people in authority* (6 items) are well represented, while the dimension *Assertive expression of annoyance, disgust, or displeasure* (2 items) is barely represented, or simply has no items assessing the dimensions of *Criticism or embarrassment* or *Interactions with the opposite sex*. On the contrary, it includes factors composed of social situations that do not have a significant weight in the population of Spain or Latin American countries (Caballo et al., 2012; 2015). If we take into account the data obtained with all treatment groups, we could say that the SAQ is more sensitive to the changes produced by interventions, both psychological and pharmacological, than the LSAS-SR. For example, while in pharmacological therapy no significant differences were found from pre- to post-treatment in the LSAS-SR, there are

significant differences in some of the dimensions of the SAQ, such as *Criticism or embarrassment* or *Speaking in public/Interacting with people in authority* ($p < .05$).

We would like to point out that both individual CBT and pharmacological treatment were also effective in reducing social anxiety (as shown by the pre/post-treatment differences), especially individual CBT and, to a lesser extent, pharmacological therapy. As we have already pointed out, the low number of subjects in both groups makes it difficult to generalize the results but having obtained data particularly from the individual CBT (Hofmann and Otto model + a Clark and Wells module), seems relevant to us insofar as these are results with a sample from a Latin country, a condition that we have not found as investigated to date. On the other hand, the fact that pharmacological therapy is relatively effective for social anxiety is positive, since it would be a therapeutic alternative for patients who are unwilling to participate in psychological treatments. Regarding pharmacotherapy for SAD, we would also like to comment that in clinical practice (at least in Spain and Latin America) it is common for patients to receive two (and sometimes more) psychotropic drugs to treat their social anxiety problems, which differs from the standard of receiving just one drug, as is usually carried out in experimental studies with these medications. In our study, for example, the pharmacological treatments were modified in short periods of time, and it was observed that a primary medication was used (in three cases vortioxetine and in two cases paroxetine) complemented with an anticonvulsant (gabapentin) or with benzodiazepines (alprazolam or lorazepam) for the management of panic attacks. Taking this situation into account, the results of our study would indicate that the use of these psychotropic drugs improves SAD symptoms.

When comparing the mean effect sizes of the IMAS program with the mean effect sizes (and ranges) of other treatments for SAD reported in the literature, the MISA program appears to obtain better results, whether they are psychological treatments in general (individual or group) (e.g., Acarturk et al., 2009; Barkowski et al., 2016; Mayo-Wilson et al., 2014; Powers et al., 2008) as well as specifically group cognitive behavioral interventions (e.g., Aderka, 2009; Barkowski et al., 2016; Mayo-Wilson et al., 2014; Powers et al., 2008; Wersebe et al., 2013), all having demonstrated effectiveness in decreasing symptoms of social anxiety.

If we take into consideration "third generation" therapies, the effect sizes obtained in our study on the MISA program are also higher than those found for treatments based primarily on mindfulness and acceptance (see, for example, the meta-analyses by Liu et al. [2021] and Norton et al. [2015]). This leads us to believe that the inclusion of the core components of these "new therapies" in CBT protocols may enhance the effectiveness of CBT. For the time being, this is a hypothesis and a possible line of research to evaluate the weight of these components in the treatment programs for social anxiety.

A final comparison would be that of the MISA program with pharmacotherapy. The data available in the literature on pharmacological treatments for SAD also allows us to point out that the effect sizes of the former are superior to those reported on the latter (which range from small to medium) (Curtis et al., 2017; Davis et al., 2014).

Several advantages and limitations of the study warrant mention. One of the main advantages is that the MISA program was carried out by different therapists in different countries. This gives the program a remarkable strength and a greater degree of generalizability for its application in other Latin American countries and even in other parts of the world. The strategies included in this program are not new, but to date we are not aware of any other cognitive behavioral protocol that is specific to treat the problem of social anxiety, using traditional techniques in an integrated manner with some of those coined by third generation therapies. Moreover, it is innovative that the program is focused on the five dimensions of social anxiety and allows for idiosyncratic attention to the difficulties presented by patients in each of them, teaching them how they can apply all the strategies worked on (e.g., mindfulness, acceptance, thought restructuring and defusion, exposure, social skills, etc.). A second advantage is the availability of (and hopefully, accessibility to) the MISA program, as it is published in two books, one for the therapist (Caballo, Salazar, Garrido, et al., 2018) and one for the patient (Caballo, Salazar, & Garrido, 2018). These books actually function as program guides, which makes it relatively simple, on the one hand, to apply the program on the part of the therapist and, on the other, to follow it on the part of the patient. In addition, this makes the application of the program in different places and by different professionals more homogeneous and comparable. Finally, we would like to highlight the group format of the MISA program. While it is true that it could be adapted to the individual format, this study found that the group format of the MISA program was more effective than individual CBT. The effectiveness of MISA is perhaps due to some of the advantages inherent in the group format, which have been highlighted by Wersebe et al. (2013), Barkowski et al. (2016) and Pelissolo (2019), such as the support and feedback among people who have similar psychological difficulties, the performance of peer exercises/activities to train the techniques, having a greater number of opportunities of exposure to natural social situations and in-session activities to practice what has been learned.

We would also like to point out several limitations of the study. A first limitation is not having a waiting list control group for comparison with the MISA program. Although it is known that SAD does not improve with the simple passage of time (Acarturk et al., 2009; Mayo-Wilson et al., 2014; Powers et al., 2008; Steinert et al., 2017), it would have been helpful to have had a no-treatment control group. A second limitation is not having obtained, due to circumstances beyond the study's control, post-treatment data from all the countries that started the MISA program. A third limitation is the low number of subjects in the two groups who applied treatments other than the MISA program. Although this was not the main goal of the research, the results obtained from the comparisons made between groups could have been more reliable if the number of participants in these two groups had been larger.

In conclusion, the three treatments used in this study (the MISA program, individual CBT and pharmacological treatment) have been shown to be effective for symptoms of SAD, with evidence of greater effectiveness of psychological treatments, and especially highlighting the results of the MISA program. Although

more research is needed, these findings support the MISA program as a compelling new treatment for SAD.

Given the participation of Spain and other Latin American countries in the study, we believe that the results obtained in this research could generalize to individuals with SAD in many Latin American countries. Finally, it should be noted that not only do patients drastically reduce their social anxiety, but they also improve in many other aspects of their lives.

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