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INTERNATIONAL APPLICATION OF THE "MULTIDIMENSIONAL INTERVENTION FOR SOCIAL ANXIETY" (MISA) PROGRAM: II. TREATMENT EFFECTIVENESS FOR SOCIAL ANXIETY-RELATED PROBLEMS

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Abstract

In a previous work (Caballo et al., 2021) we tested the effectiveness of the Multidimensional Intervention for Social Anxiety (MISA) program in reducing social anxiety symptoms. In this quasi-experimental study, with pre/post-treatment and follow-up measures, we examined the impact of the MISA program on other problems related to social anxiety. 57 people diagnosed with social anxiety disorder (SAD), according to DSM-5, were assessed with a diagnostic interview and questionnaires measuring social skills, depression, avoidant personality disorder symptoms, alcoholism, self-esteem, personal sensitivity, worries, and quality of life. Different therapists carried out the treatment in Ecuador, Spain, and Paraguay. The results showed significant improvements at post-treatment in virtually all measures assessing the above variables, improvements that were maintained at six months. Effect sizes on treatment effectiveness ranged from medium to large. The MISA program was also compared with individual cognitive behavioral therapy and pharmacological treatment, with favorable results for the MISA program. In conclusion, this new program for the treatment of social anxiety has a significant impact on other problems usually related to SAD.

KEY WORDS: *social anxiety, social skills, self-esteem, quality of life, personal sensitivity, worries, avoidant personality, treatment, MISA program, effect size*.

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Resumen

En un trabajo anterior (Caballo et al., 2021) comprobamos la eficacia del programa de Intervención multidimensional para la ansiedad social (IMAS) en la reducción de los síntomas de ansiedad social. En este estudio cuasiexperimental, con medidas pre/postratamiento y seguimiento, hallamos el impacto del programa IMAS en otros problemas relacionados con la ansiedad social. 57 personas diagnosticadas con un trastorno de ansiedad social (TAS), según el DSM-5, contestaron a cuestionarios que medían habilidades sociales, depresión, síntomas del trastorno de la personalidad por evitación, alcoholismo, autoestima, sensibilidad personal, preocupaciones y calidad de vida. Diferentes terapeutas llevaron a cabo el tratamiento en Ecuador, España y Paraguay. Los resultados mostraron importantes mejoras en el postratamiento en prácticamente todos los aspectos evaluados, mejoras que se mantenían a los seis meses. Los tamaños del efecto sobre la eficacia del tratamiento iban de medianos a grandes. Se comparó también el programa IMAS con terapia cognitivo conductual individual y tratamiento farmacológico, con resultados favorables para el programa IMAS. Este nuevo programa para el tratamiento de la ansiedad social tiene un impacto importante en otros problemas relacionados habitualmente con el TAS.

PALABRAS CLAVE: *ansiedad social, habilidades sociales, autoestima, calidad de vida, sensibilidad personal, preocupaciones, personalidad evitativa, tratamiento, programa IMAS, tamaño del efecto*.

Introduction

Social anxiety disorder (SAD), also known as social phobia, is characterized, primarily, by an intense fear of being observed and negatively evaluated by others in social situations, whether performing in front of or interacting with others (American Psychiatric Association [APA], 2013). SAD is the second most common anxiety disorder (after specific phobia) and its overall worldwide prevalence of 2.4% in the past 12 months and 4.0% over a lifetime (Stein et al., 2017), places it at the top of the ranking of mental health problems, after depressive and substance use disorders, with which it often occurs comorbidly (e.g., Beesdo et al., 2007; MacKenzie & Fowler, 2013; Pignon et al., 2018; Quevedo et al., 2020; Schneier et al., 2010; Smith & Randall, 2012; Stein et al., 2017). There is a whole series of studies that have found relationships of social anxiety with other disorders or psychological problems, such as depression, low self-esteem, excessive worry, alcohol consumption, deficits in social skills, etc. Thus, for example, Ratnani et al. (2017) found that people with social anxiety were more likely to experience depression and the level of severity of depression correlated with the severity of social anxiety (r from .36 to .45). Similar results were reported by Hsu et al. (2012), Tyrała et al. (2015), Vassilopoulos et al. (2015), Erickson et al. (2016), and Mörtberg and Jansson Fröjmark (2019). Other studies have reported higher correlations (r from .52 to .63), such as Bartholomay et al. (2021), Erickson et al. (2016), Flynn et al. (2019), Gregory and Peters (2017), and Heidari and Nemattavousi (2021). In studies with clinical samples (Tyrała et al., 2015), this correlation is even higher (r= .64), Additionally, there is some empirical support for considering SAD as a precursor of depressive

disorders (e.g., Beesdo et al., 2007; MacKenzie & Fowler, 2013; Pignon et al., 2018; Quevedo et al., 2020; Schneier et al., 2010; Stein et al., 2017).

Worry is another psychological characteristic that seems to be present in subjects with social anxiety. Worry refers to repetitive, uncertain, and negative affect-laden thoughts and images about what might happen in the future (*what if…? what would happen if…?*) (Hong, 2007). Worry can be observed in subjects without mental disorders, who use it as part of a problem-solving strategy in response to uncertain events and need not be pathological (Counsell et al., 2017). However, it is more likely to be pathological when it is excessive and uncontrollable, often concerning minor things, and is used as a cognitive strategy to cope with negative emotions. This is what happens in generalized anxiety disorder (GAD), where worries involve a wide variety of topics/areas (Dugas & Robichaud, 2007). SAD and GAD are often comorbid and excessive worry may partly explain the comorbidity between both disorders (Dugas & Robichaud, 2007; Starcevic et al., 2007), and may even predict a diagnosis of SAD - in addition to GAD (Starcevic et al., 2007). The relationship between social anxiety and worry symptoms is small (*r* from .34 to .35) in both university and clinical samples (Counsell et al., 2017; Erickson et al., 2016). When comparing subjects with SAD to healthy subjects, it is found that the former show more worries than the latter (Arditte Hall et al., 2019).

Another issue that is frequently in the context of social anxiety is problematic alcohol use. According to the literature, social anxiety and alcohol use appear to mutually reinforce each other. Alcohol use may reduce anxiety (or tension) in social situations and, at the same time, facilitate social interaction due to the disinhibition and cognitive changes it produces (e.g., decreases self-evaluation and self-awareness or perceived threat of social situation), with alcohol consumption becoming a factor in maintaining social anxiety. However, the data in the literature on the relationship between social anxiety and alcohol use are indeed confusing. Thus, for example, Schneier et al. (2010) reported that, in the general U.S. population, the joint lifetime prevalence of SAD and an alcohol use disorder was 2.4% and that among those with SAD, 27.3% had alcohol dependence and 20.9% abused alcohol. But other studies report a lack of such a relationship (e.g., Bartholomay et al., 2021; Villarosa et al., 2014) or even a negative correlation (e.g., Ham et al., 2007; Ham & Hope, 2005, 2006; Papachristou et al., 2018; Schry & White, 2013).

A fourth issue that appears to be related to social anxiety is low self-esteem. It seems to be some consensus that self-esteem involves judgments made by the person about his or her own worth, leading to an overall positive or negative assessment of (acceptance or rejection of) himself or herself. Self-evaluations appear to be relatively stable over time (Marsh & O'Mara, 2008; Rosenberg, 1962). According to relatively recent research, self-esteem shows negative correlations with social anxiety, with small to moderate values in community samples -including university (e.g., Caballo, Salazar, & CISO-A Research Team Spain, 2018; Cheng et al., 2015; Gregory & Peters, 2017; Heidari & Nemattavousi, 2021; Iancu et al., 2015; Nordstrom et al., 2014; Sun & Wu, 2011; Tan et al., 2016) and clinical samples (e.g.,

Iancu et al., 2015; Ritter et al., 2013; Schreiber et al., 2012). Additionally, there are studies indicating that low self-esteem could be a significant predictor of social anxiety (Khanam & Moghal, 2012).

A fifth construct of interest is high personal sensitivity, which is relatively under-researched. Aron (1996) used the concept of highly sensitive people to refer to innate sensitivity to stimulation, awareness of subtle issues, and a lower threshold for stimulation than that of other people. It is sensory processing that enables people to perceive, register and organize information from the environment through the senses. However, some show extreme or intense patterns of sensory information processing. Benham (2006) defined sensory processing sensitivity as high levels of sensitivity to subtle stimuli and the easiness to become overexcited by external stimuli. In recent years, there has been increasing empirical support for the biological basis of such processing. We refer to the sensitivity of the brain's behavioral inhibitory (BIS) and behavioral activation (BAS) systems. The BIS would be responsible for internal and external scanning for threat-relevant information in response to potentially threatening situations and the BAS would contribute to anxiety and avoidance responses to social situations. Research indicates that both systems are related to social anxiety. Specifically, the relationship between social anxiety and the BIS is positive and moderate (*r* from .44 to .63) while the relationship between social anxiety and the BAS is small and negative (*r* from -.15 to -.17) (Heidari & Nemattavousi, 2021; Kimbrel et al., 2012).

Social skills is another variable that frequently appears linked to social anxiety. The relationship appears to be bi-directional, i.e., a deficit in social skills can be found among the causal factors of social anxiety, but it also happens that people with SAD could manifest a poor performance due to the interference of social anxiety. The empirically identified relationship is negative with a mean correlation around .50 (*r* from -.26 to -.61) (Caballo et al., 2003, 2017; Caballo, Salazar, Irurtia, et al., 2014; Hsu et al., 2012; Lefrançois et al., 2011). Caballo, Salazar, & CISO-A Research Team Spain (2018) found that both women and men with high social anxiety had significantly lower overall mean social skills than their peers with low social anxiety.

A final issue that seems relevant to the evaluation of people with SAD is the subjective assessment they make of their quality of life, referring to different vital aspects such as physical and psychological health, social relationships, environmental aspects, etc. Empirical work regarding social anxiety and quality of life with university samples indicates that the relationship between the two is negative and ranges from small to moderate (Mörtberg & Jansson Fröjmark, 2019). Ratnani et al. (2017) found that subjects with social anxiety had lower quality of life (WHOQoL) scores than subjects without social anxiety, although the differences were only significant in the domain of Social Relationships.

SAD like many other serious psychological problems is unlikely to remit without treatment (e.g., Acarturk et al., 2009; Mayo-Wilson et al., 2014; Powers et al., 2008; Steinert et al., 2017). Fortunately, there are effective therapies for this disorder that reduce symptomatology and improve the social functioning of those affected (e.g., Acarturk et al., 2009; Fedoroff & Taylor, 2001; Mayo-Wilson et al., 2014; Norton et

al., 2015; Olatunji & Hollon, 2010; Ponniah & Hollon, 2008; Powers et al., 2008; Taylor, 1996). A synthesis of meta-analyses of the most empirically supported psychological and pharmacological treatments is presented in Caballo et al. (2021).

In addition to the effects on social anxiety, psychological treatments for SAD could provide benefits with regard to other clinical symptoms or comorbid problems, such as those mentioned above (i.e., depressive symptomatology, pathological worries, low self-esteem, problems related to alcohol or other drugs, etc.). A meta-analysis by Acarturk et al. (2009) evaluated the effectiveness of psychological treatments on SAD and *depressive symptoms*, indicating that the mean effect size (Cohen's *d*) for the latter was 0.70 (95% CI [0.46-0.94]). In this meta-analysis, in 27 of the 29 studies had some form of cognitive behavioral treatment as the experimental group. Gregory and Peters (2017) identified, in their review, three studies that proved that cognitive therapy and exposure were effective in increasing *self-esteem* in individuals with SAD, with medium to large effect sizes (between 0.68 and 0.99).

If we consider some research separately (not part of the above meta-analysis and review), we find evidence for significant reduction of depressive symptoms (*d*= 0.79) in a Social Effectiveness Therapy (SET) group (Beidel et al., 2014). Rozen et al. (2022) also found that a cognitive behavioral therapy group (CBGT) was effective in reducing depressive symptoms in subjects with SAD. Mörtberg et al. (2007) similarly found a significant reduction in depressive symptoms, with greater improvement in individual cognitive therapy than in group, while Stangier et al. (2003) found no difference between individual and group therapy in their effectiveness in reducing depressive symptoms.

Regarding so-called third-generation therapies, they can be effective for depressive symptoms, for low self-esteem, and for increasing quality of life (García-Pérez & Valdivia-Salas, 2018; Norton et al., 2015). In the meta-analysis by Liu et al. (2021), the authors concluded that mindfulness-based interventions (MBIs) for patients with SAD have significant effects on depressive symptoms (3 studies) and quality of life (2 studies) compared to a waiting list. However, when comparing MBIs with some other active treatment (CBGT or aerobic exercise) there were no significant differences in depressive symptoms (5 studies) and quality of life (4 studies).

Another line of treatment for SAD is pharmacological treatment, which seems to have effects on quality of life. According to the meta-analysis by Curtiss et al. (2017), pharmacotherapy contributes to significant improvements in quality of life compared to placebo (3 studies). In a previous meta-analysis, specifically on the effectiveness of selective serotonin reuptake inhibitors (SSRIs), Hedges et al. (2007) found that this type of drug improves depressive symptoms in patients with SAD, although the effect sizes are highly variable, ranging from small (for paroxetine and sertraline in 4 studies) to large for paroxetine (one study), while in one of the studies the change was not significant (fluoxetine).

Taking into account that, on the one hand, programs based on mindfulness and acceptance have positive effects on other psychological aspects beyond social

anxiety in patients with SAD, and that, on the other hand, they can be used as additive components within treatment with a cognitive behavioral approach that have demonstrated their effectiveness for other problems, we considered the option of trying a new group program for the treatment of SAD that integrates traditional CBT techniques and those of third-generation therapies. This intervention is referred to as the Multidimensional Intervention for Social Anxiety (MISA; Caballo, Salazar, & Garrido, 2018; Caballo, Salazar, Garrido, Irurtia, et al., 2018) program. This program was shown to be effective for specific symptoms of social anxiety, providing superior evidence to individual CBT and pharmacological treatment (see Caballo et al., 2021).

This new treatment is oriented to the intervention on the five dimensions of social anxiety (Caballo et al., 2008, 2012, 2013, 2015; Caballo, Salazar, Arias, et al., 2010; Caballo, Salazar, Irurtia, et al., 2010), addressing the different maintenance factors of the disorder by using traditional CBT techniques (e. g., psychoeducation, exposure, cognitive restructuring, social skills) and some from third generation therapies (e.g., mindfulness, defusion, acceptance, education in values).

The goal of this work was to test the effectiveness of the MISA program regarding other psychological conditions that usually accompany social anxiety, such as depression, problems related to alcohol use, excessive worries, avoidance personality disorder symptoms, high personal sensitivity, low self-esteem, deficits in social skills and low quality of life in patients with SAD. Our primary hypothesis is that post-treatment outcomes with the MISA program would show a significant improvement over baseline data and that these outcomes would be maintained at six months after the end of the program. As a secondary hypothesis, it was expected that the MISA program would show superior post-treatment results to those obtained with individual CBT or pharmacological treatment.

Method

Participants

Fifty-nine 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) participated in this study. To ensure the diagnosis, the "Semi-structured Clinical Interview for Social Anxiety" (SCISA) was used (Salazar & Caballo, 2018). Two of the patients (1 man from Spain and 1 woman from Paraguay) did not complete several of the questionnaires at post-treatment, so the final sample consisted of 57 subjects. Patients were from three countries, 20 were from Ecuador (7 men and 13 women), 24 from Paraguay (12 men and 12 women) and 13 from Spain (4 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. Regarding current occupation, 33 were studying, 17 were

active workers and 7 were unemployed. The distribution of patients by type of treatment was: 45 subjects underwent the MISA program (MISAG), 7 participated in an individual cognitive behavioral therapy (CBTG) and 5 received an individual pharmacological treatment (PHARG).

Instruments

The assessment measures were the same for all study participants. The instruments that measured social anxiety were included in an already published work (Caballo et al., 2021). Those that evaluated psychological aspects other than social anxiety, usually associated with it, are the ones that were analyzed in this study.

a) *Beck Depression Inventory* (BDI-II; Beck et al., 1966). The BDI-II measures the magnitude of depression by means of 21 items with four response options that are ordered according to severity, from 0 to 3 points. The person must choose the option that best describes his or her current situation during the last two weeks. The total score is obtained by adding up all the items and the levels of severity of depression are classified as follows: from 0 to 9 points, "non-depressive state"; from 10 to 15 points, "mild depression"; from 16 to 23 points, "moderate depression" and from 24 to 63 points, "severe depression". Reliability levels reported with Spanish samples are high (e.g., Salazar et al., 2014). In this study Cronbach's alpha was .90.
b) *Alcohol Use Disorders Identification Test* (AUDIT; Babor et al., 2001). The AUDIT is used as a screening measure for excessive drinking. It consists of 10 questions in which the person must choose the option that best describes his or her current alcohol consumption (frequency, quantity, symptoms of dependence and harmful alcohol use). Items 1 to 8, which have five response options, are scored from 0 to 4, assigning 0 to the first response option and 4 to the last, while items 9 and 10, which have three response options, are scored by assigning the values of 0, 2 and 4. A total score ≥ 8 should be considered as an indicator of risky and harmful drinking, as well as possible alcohol dependence. It has high levels of reliability according to Babor et al. (2001). In this study Cronbach's alpha was .86.
c) *Penn State Worry Questionnaire* (PSWQ; Meyer et al., 1990), Spanish version of Nuevo et al. (2002). The PSWQ assesses in a unidimensional way the excessiveness, generality, and uncontrollability of worries and consists of 16 items that are answered on a five-point Likert scale (from 1= "not at all" to 5= "very much"). The original questionnaire (Meyer et al., 1990) contains five negative items (1, 3, 5, 8, 10 and 11), but the Spanish version used in this study contains the negative items reformulated in positive due to the problematic nature of these items for Spanish speakers. The total score is obtained by adding the scores of all the items. Sandín et al. (2009) propose the following cut-off points: men= 54, women= 61, total= 59 (corresponding to the 75th percentile), with a score equal to or higher indicating the severity of the concerns. The levels

of internal consistency reported on the instrument are excellent (Cronbach's alpha= .92) (e.g., Counsell et al., 2017). In this study Cronbach's alpha was .95.

d) *Questionnaire for Avoidant Personality Disorder* (QAPD). The 7 items assessing avoidant personality disorder (APD) from the personality questionnaire of the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID-II; First et al., 1999) were selected. The original response scale (yes/no) was modified to a 5-point Likert scale, from 1= "very uncharacteristic of me" to 5= "very characteristic of me". The higher the score the higher the possibility of being diagnosed with a TPE. In this study Cronbach's alpha was .85.

e) *Personal Sensitivity Questionnaire* (PSQ, Caballo & Salazar, 2018). The PSQ is an *ad hoc* self-report measure based on the self-help test "Are you highly sensitive?" (Aron, 1999). It was constructed with the purpose of assessing the degree of sensitivity that a person has to both external (mainly) and internal stimuli and events. The PSQ consists of 30 items that are answered on a five-point Likert scale (from 1= "very uncharacteristic of me" to 5= "very characteristic of me"). The higher the score, the greater the personal sensitivity. In this study Cronbach's alpha was .86.

f) *Rosenberg Self-Esteem Scale* (RSES; Rosenberg, 1965; Rosenberg et al., 1995). The RSES is the most widely used instrument to assess self-esteem globally. According to Rosenberg (1965), it evaluates "the feeling that one is good enough" (p. 31). It consists of 10 items, five formulated positively and five negatively. Each item can be answered on a four-point Likert scale (from 1= "strongly disagree" to 4= "strongly agree"). In the correction, the score of the negative items is inverted and all are added together. The higher the score, the higher the self-esteem. Regarding its internal consistency, Cronbach's alphas of .81 (Cheng et al., 2015) and .88 (Fleming & Courtney, 1984) and test-retest reliability of .82 (Fleming & Courtney, 1984) have been reported. In this study Cronbach's alpha was .87.

g) *Social Skills Assessment Questionnaire* (SOSAQ; Caballo et al., 2017). The SOSAQ is a 40-item questionnaire that assesses 10 social skills (four items per skill): 1) Interacting with strangers, 2) Expressing positive feelings, 3) Dealing with criticism, 4) Interacting with people I am attracted to, 5) Keeping calm in embarrassing situations, 6) Speaking in public/Interacting with people in authority, 7) Dealing with embarrassing situations, 8) Defending one's rights, 9) Apologizing, and 10) Refusing requests. Each item is answered on a Likert scale, from 1 ("very uncharacteristic of me") to 5 ("very characteristic of me"). There is no item formulated in negative, so that the score is obtained by adding the items directly. In each skill the minimum score will be 1 and the maximum score will be 20. The higher the score the higher the social skill assessed. Caballo et al. (2017) reported reliability coefficients (Guttman split-half reliability) between .66 and .89, and internal consistency (Cronbach's alpha) between .64 and .90 for the SOSAQ dimensions and for the total score of .86 (Guttman's) and .88 (Cronbach's alpha). Its convergent validity with the Rathus Assertiveness Schedule (RAS) (r= .53) and its nomological validity with the Social Anxiety

Questionnaire for adults (SAQ) (*r*= -.49) were also reported. In this study, Cronbach's alpha for the total score was .93.

h) *World Health Organization Quality of Life* (WHOQoL-Bref; World Health Organization, 1996). The WHOQoL-Bref consists of 26 items that assess the individual's perception of his or her quality of life. The first two items are examined separately. Item 1 refers to the general perception of their quality of life and item 2 to the general perception of their health. The remaining 24 items are distributed in four domains, in which quality of life is assessed independently: 1) Physical health (7 items), which refers to activities of daily living, medication dependence, energy and fatigue, mobility, pain and discomfort, sleep and work capacity; 2) Psychological (6 items), referring to body image, positive and negative feelings, self-esteem, spirituality and personal beliefs, and higher processes (thinking, learning, memory and concentration); 3) Social relationships (3 items), referring to personal relationships, social support and sexual activity; and 4) Environment (8 items), referring to economic resources, physical security, the social security system (access and quality), family environment, opportunities to acquire new knowledge and skills, opportunities for leisure and free time activities, physical environment (pollution, noise, traffic, climate) and transportation. The items are answered on five-choice Likert scales, but before obtaining the scores in each domain and overall, the assessment of three items must be reversed. The higher the score, the higher the quality of life in the respective domain. In this study Cronbach's alpha was .92.

Procedure

This quasi-experimental study has pre/post-treatment and 6-month follow-up measures with three treatment groups for social anxiety disorder: 1) Multidimensional Intervention for Social Anxiety (MISAG) program, 2) individual cognitive behavioral treatment (CBTG), and 3) pharmacological treatment (PHARG).

The MISA program was publicized through professional social networks and some collaborators (psychologists) of our team in Latin America were contacted by e-mail. They were asked about the possibility of implementing the MISA program or another program that they were currently applying in their clinical centers to treat people with SAD. The psychologists who were going to apply the MISA program received a copy of the therapist's guide and several copies of the patient's workbook.

Each collaborating professional carried out a campaign to disseminate the psychological treatment program to be developed in their community, using the available media (bulletins, press releases, radio, posters, etc.). Patients who received pharmacological treatment were invited to participate when they went to a hospital in Spain.

Potential candidates for participation in any of the three treatment groups were assessed following a protocol that included: 1) A diagnostic interview for social anxiety disorder (SAD) or social phobia, according to DSM-5 criteria (APA, 2013) (the

Semi-structured Clinical Interview for Social Anxiety [SCISA]), and 2) a battery of questionnaires among which were those measuring social anxiety (the Social Anxiety Questionnaire for adults [SAQ] and the Liebowitz Social Anxiety Scale, self-report version [LSAS-SR]) in addition to those described in the Instruments section. This evaluation protocol was sent by e-mail to the collaborating professionals together with the Excel database to record the patients' information.

The exclusion criteria for participation in the study were the presence of a schizophrenia spectrum disorder or other psychotic disorders, bipolar disorder, borderline personality disorder or psychoactive substance use disorder. The maximum number of persons allowed per treatment 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 group formation. Treatment was free of charge. Each participant received and signed an informed consent to participate in the study and did so voluntarily. Further details on the procedure can be found in the first part of this study (Caballo et al., 2021).

TREATMENT GROUPS

Three treatment groups were carried out: 1) MISAG, which received the Multidimensional Intervention for Social Anxiety (MISA) program, a recently developed group treatment (Caballo, Salazar, & Garrido, 2018; Caballo, Salazar, Garrido, et al., 2018) and on which it is intended to test its effectiveness for SAD (Caballo et al., 2021) and associated symptomatology; 2) CBTG corresponding to patients who received individual cognitive behavioral therapy and which was applied by a psychologist with clinical experience, following the model of Hofmann (2007) and Hofmann and Otto (2008), and 3) PHARG corresponds to the group of patients who received individual pharmacological treatment for SAD in a hospital in Spain and a combination of psychotropic drugs was used (see Caballo et al., 2021, for a more detailed description of this section).

In total, we obtained five groups that applied the MISA program (two in Ecuador, two in Paraguay, and one in Spain), one group that used cognitive behavioral therapy (CBT) (Paraguay) and one group that used pharmacological therapy (PHAR) (Spain). These last two comparison treatment groups were composed of patients with individual treatment, but we considered them all as a single group.

THE MISA PROGRAM

The *Multidimensional Intervention for Social Anxiety* (MISA) program is designed as a group intervention, 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 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 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. For further information about the treatment program, a summary can be found in Caballo et al. (2019) or the guidelines 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 pre-treatment, post-treatment, 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 (84% of the contrasts met the assumption of bivariate normality). In addition, we estimated the same models in their nonparametric version (Wilcoxon rank test) to verify that both procedures reached the same conclusions.

Secondly, we explored whether there were pretreatment differences between men and women in any of the variables studied in this study. We only found that women scored significantly higher in the "Social relationships" domain of the WHOQoL-Bref ($p < .05$). Considering the low difference in the scores, we did not take this into account when performing the analyses.

Finally, we compared the results of the MISAG 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 CBTG and the PHARG, 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 MISAG (*t* tests), we used Cohen's *d*, whereas to estimate the effect size of the same differences in the individual CBTG and PHARG, as well as in the between-group comparisons (non-parametric statistics), we used the biserial rank correlation (*r*). The formulas used for the calculation of effect sizes were:

$$d = \frac{M_1 - M_2}{\sqrt{(SD_1^2 + SD_2^2)/_2}}; r = Z/\sqrt{N}$$

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 MISAG

Regarding 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 SKILLS AS ASSESSED BY THE SOSAQ

Table 1 shows the results of the contrast of means in the SOSAQ scores for the whole group (*N*= 45). Post-treatment scores were significantly lower (*p*< .0001) in all cases, except in the skills for "Expressing positive feelings" and "Apologizing" (*p*= .052 and *p*= .940, respectively). The non-parametric statistics showed the same results, with the addition that the improvement in the "Expressing positive feelings" skill becomes slightly significant (*p*< .05). The effect sizes (Cohen's *d*) were large in all skills (between 0.91 in the skills for "Standing up for one's own rights" to 1.23 in the skills for "Interacting with strangers"), except in the skills for "Coping with criticism" and "Keeping calm in embarrassing situations" where the effect size was medium.

If we compare the pretreatment score in the different social skills of the patients participating in the MISAG with those obtained by subjects without social anxiety problems, such as those in the study on the development of the SOSAQ (Caballo et al., 2017), we find that the patients scored below the mean -1 standard deviation in 9 of the 10 skills (only in *Apologizing* did they score slightly above). When we compare the post-treatment score with that of subjects without social anxiety problems, we see that the post-treatment score was above the mean +1 standard deviation in all skills. This finding indicates that the patients, after treatment, reached a level of social skills that was similar to that shown by subjects without special difficulties in social anxiety.

Table 1
Pre/post-treatment differences of the MISAG (*N*= 45) on the Social Skills Assessment Questionnaire (SOSAQ)

Social skills by the SOSAQ	Pre-treatment		Post-treatment		Diff.	*t*	*d*	95% CI for *d*	
	M	*SD*	*M*	*SD*				LL	LU
1.Strangers	7.15	2.93	11.00	3.30	-3.84	-7.46	1.23	0.74	1.48
2. Positive*	11.98	4.36	13.18	3.53	-1.20	-2.00	0.30	0.00	0.60
3. Criticism	10.62	3.81	13.13	3.18	-2.51	-4.39	0.71	0.33	0.97
4. Attractive	6.11	3.04	9.73	3.82	-3.62	-6.16	1.05	0.57	1.26
5. Calm	9.35	3.62	11.75	3.14	-2.40	-4.70	0.71	0.37	1.02
6. Public/Auth	7.78	2.81	11.29	3.10	-3.51	-7.34	1.19	0.72	1.46
7. Embarrass	7.22	3.27	10.38	2.75	-3.16	-5.18	1.04	0.43	1.10
8. Rights	8.00	2.98	10.91	3.40	-2.91	-5.88	0.91	0.53	1.22
9.Apologizing*	13.67	3.98	13.71	3.88	-0.04	-0.07	--	--	--
10.Requests	9.27	3.93	12.93	2.70	-3.66	-5.27	1.08	0.45	1.13
Total	91.54	20.64	118.39	24.78	-26.84	-6.82	1.18	0.66	1.39

Notes: SOSAQ= Social Skills Assessment Questionnaire; Diff.= 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), except for *2. Expressing positive feelings, and *9. Apologizing, which did not reach the significance level.

DIFFERENCES IN WORRY, DEPRESSION, ALCOHOL USE, APD SYMPTOMS, PERSONAL SENSITIVITY, AND SELF-ESTEEM

We also assessed other psychological difficulties that appear in the literature related to social anxiety, such as excessive worry, depressive symptoms, alcohol consumption, avoidant personality disorder symptoms, high personal sensitivity, and low self-esteem. In all cases, post-treatment scores were statistically significantly and markedly lower except for self-esteem, where post-treatment scores increased compared to pre-treatment scores. All pre/post-treatment differences were statistically significant (Table 2). These results indicate improvement in all psychological aspects assessed. For instance, the mean depression score (BDI-II) went from "moderate depression" in the pre-treatment phase to "non-depressive state" in the post-treatment phase, as well as worries went from being above the cut-off point (>59) in the pre-treatment to being well below this point in the post-treatment.

We computed the effect size of the pre/post-treatment differences to find out to what extent the MISA program had been effective in decreasing these other psychological difficulties of SAD patients. The effect size was large in APD symptoms, depressive symptoms, worries and self-esteem, was medium in personal sensitivity, and small in alcohol use (Table 2).

Table 2

Pre/post-treatment differences of the MISAG (*N*= 45) in worry, depression, alcohol consumption, APD symptoms, personal sensitivity, and self-esteem

Variables (self-report measures)	Pre-treatment		Post-treatment		Diff.	*t*	*d*	95% CI for *d*	
	M	*SD*	*M*	*SD*				LL	LU
Worry (PSWQ)	61.82	12.77	45.75	14.27	16.07	7.33	1.19	0.72	1.47
Depressive symptoms (BDI-II)	21.45	10.97	8.95	8.68	12.50	9.35	1.26	0.95	1.77
Alcohol use* (AUDIT)	3.55	5.50	2.15	4.17	1.40	3.02	0.29	0.10	0.71
APD symptoms (APDQ)	27.52	5.16	19.89	6.42	7.64	7.63	1.31	0.76	1.52
Personal sensitiv. (PSQ)	108.78	17.14	91.69	25.42	17.09	5.35	0.79	0.45	1.13
Self-Esteem (RSES)	25.39	5.42	29.75	5.26	-4.36	-6.40	0.82	0.60	1.32

Notes: PSWQ= Penn State Worry Questionnaire; BDI-II= Beck Depression Inventory-II; AUDIT= Alcohol Use Disorders Identification Test; APD= Avoidant Personality Disorder; APDQ= APD Questionnaire; PSQ= Personal Sensitivity Questionnaire; RSES= Rosenberg Self-Esteem Scale; Diff.= Differences between pre- and post-treatment means; *d*= Cohen's *d*; LL= Lower limit; UL= Upper limit. All mean differences were significant ($p< .0001$), except for *$p< .01$.

DIFFERENCES IN PERCEIVED QUALITY OF LIFE

A particularly relevant issue in our assessment was the quality of life (QoL) of the patients. In all cases, scores on the WHOQoL-Bref were higher at post-treatment compared to pretreatment scores, indicating improvement in all aspects of perceived quality of life. All pre/post-treatment differences were statistically significant (Table 3).

The effect sizes of the pre/post-treatment differences ranged from medium (from 0.61 for the first item assessing "Global quality of life") to large (up to 1.09 for the "Social relationships" domain), indicating that the MISA program was effective in increasing the participants' perceived quality of life, both globally and in the different domains composing it (Table 3).

Table 3

Pre/post-treatment differences of the MISAG (*N*= 45) in perceived quality of life as assessed with the WHOQoL-Bref

WHOQoL-Bref and its domains	Pre-treatment		Post-treatment		Diff.	*t*	*d*	95% CI for *d*	
	M	*SD*	*M*	*SD*				LL	LU
Global QoL (item 1)	2.89	1.00	3.47	0.87	-0.58	-4.35	0.61	0.32	0.97
General health (item 2)	2.55	0.78	3.35	1.09	-0.80	-6.37	0.84	0.59	1.30
Physical health*	20.75	4.49	23.55	4.54	-2.80	-4.03	0.62	0.28	0.92
Psychological	15.47	3.92	19.27	4.34	-3.80	-6.53	0.92	0.61	1.33
Social relationships	7.73	2.41	10.35	2.37	-2.62	-7.26	1.09	0.71	1.45
Environment	23.77	4.70	27.09	5.84	-3.32	-4.39	0.63	0.33	0.99
Total	73.02	13.89	86.98	15.41	-13.95	-6.59	0.95	0.63	1.35

Notes: WHOQoL-Bref= World Health Organization Quality of Life Questionnaire-Bref; QoL= Quality of Life; Diff.= Differences between pre- and post-treatment means; *d*= Cohen's *d*; LL= Lower limit; UL= Upper limit. All mean differences were significant at $p< .0001$, except for *$p< .001$.

Post-treatment/follow-up differences in the MISAG

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 SKILLS ASSESSED BY THE SOSAQ

Table 4 shows the results of the mean contrast in SOSAQ scores for the MISAG (*N*= 25). All social skills and the overall SOSAQ score showed an increase at 6-month follow-up. However, only the SOSAQ total score and three specific social skills (of the 10 assessed by the SOSAQ) increased significantly ($p< .05$). Effect sizes ranged from small ("Keeping calm in embarrassing situations" and on the SOSAQ total score) to medium ("Speaking in public/interacting with people in authority" and "Interacting with people I am attracted to").

Table 4

Post-treatment/six-month follow-up differences (*N*= 25) in the MISAG on the "Social Skills Assessment Questionnaire" (SOSAQ)

Social skills by the SOSAQ	Post-treatment		Follow-up		Diff.	*t*	*p*
	M	*SD*	*M*	*SD*			
1. Interacting strangers	9.96	3.55	11.12	3.18	-1.16	-1.72	.099
2. Positive feelings	13.36	3.58	14.16	3.50	-0.80	-1.16	.256
3. Dealing with criticism	13.32	3.00	13.36	2.69	-0.04	-0.11	.914
4. Interacting attractive	8.32	3.98	10.68	4.14	-2.36	-3.35	**.003**
5. Keeping calm	11.12	3.26	12.08	2.97	-0.96	-2.55	**.017**
6. Public speak/Authority	10.24	2.88	11.92	2.45	-1.68	-3.56	**.002**
7. Embarrassing situations	9.37	2.37	9.96	3.38	-0.58	-1.04	.307
8. Defending rights	9.88	3.42	10.60	2.89	-0.72	-1.54	.136
9. Apologizing	13.96	3.52	14.40	2.36	-0.44	-0.83	.414
10. Refusing requests	12.74	2.09	13.17	2.87	-0.43	-0.73	.473
Total	112.26	22.57	121.83	17.93	-9.56	-2.96	**.007**

Notes: SOSAQ= Social Skills Assessment Questionnaire; Diff.= differences in means between post-treatment and follow-up. In bold, the skills of the SOSAQ in which there were significant differences.

DIFFERENCES IN WORRY, DEPRESSION, ALCOHOL CONSUMPTION, AVOIDANT PERSONALITY SYMPTOMS, PERSONAL SENSITIVITY, AND SELF-ESTEEM

Regarding other psychological difficulties related to social anxiety, we find that worry, personal sensitivity, self-esteem and TPE symptoms continue to improve at 6 months, but only the first two do so significantly ($p < .05$), with a small effect size. Regarding alcohol consumption and depressive symptoms, there is a slight increase in scores at 6 months, but the change is not statistically or clinically relevant (Table 5).

Table 5

Post-treatment/six-month follow-up differences ($N = 25$) in the MISAG on worry, depression, alcohol consumption, avoidant personality symptoms, personal sensitivity, and self-esteem

Variables (self-report measures)	Post-treatment		Follow-up		Diff.	*t*	*p*
	M	*SD*	*M*	*SD*			
Worry (PSWQ)	54.87	12.69	50.13	11.75	4.74	2.65	**.014**
Depressive symptoms (BDI-II)	12.92	9.41	13.04	10.92	-0.12	-0.08	.939
Alcohol use (AUDIT)	2.36	5.46	2.60	6.10	-0.24	-0.66	.513
APD symptoms (APDQ)	24.04	5.64	22.92	4.92	1.12	1.46	.158
Personal sensitivity (PSQ)	109.00	18.41	102.80	19.02	6.20	2.59	**.016**
Self-Esteem (RSES)	25.87	4.65	26.37	2.92	-0.50	-0.40	.689

Notes: PSWQ= Penn State Worry Questionnaire; BDI-II= Beck Depression Inventory-II; AUDIT= Alcohol Use Disorders Identification Test; APD= Avoidant Personality Disorder; APDQ= APD Questionnaire; PSQ= Personal Sensitivity Questionnaire; RSES= Rosenberg Self-Esteem Scale; Diff.= Differences between post-treatment and six-month follow-up. Significant differences are shown in bold.

DIFFERENCES IN PERCEIVED QUALITY OF LIFE

Participants' perceived quality of life (QoL) was also assessed 6 months after the end of treatment. The WHOQoL-Bref scores at 6 months show that half of the QoL areas continued to improve slightly (General perception of QoL, Psychological health, and Environment), although not significantly, and the other half worsened slightly (General perception of health, Physical health, and Social relationships). Among those that worsened, Physical Health was the only aspect that did so significantly ($p < .001$) and this may have contributed to the total score of the questionnaire also decreasing, indicating a worse perceived QoL at six months, although not statistically significant (Table 6).

Table 6
Post-treatment/six-month follow-up differences of the MISAG (*N*= 25) in perceived quality of life as assessed by the WHOQoL-Bref

WHOQoL-Bref and its domains	Post-treatment		Follow-up		Diff.	*t*	*p*
	M	*SD*	*M*	*SD*			
Global QoL (item 1)	3.24	0.92	3.32	0.75	-0.08	-0.49	.627
General health (item 2)	2.84	0.94	2.72	0.89	0.12	0.65	.524
Physical health*	22.32	3.85	18.36	3.41	3.96	4.30	**.000**
Psychological	16.72	2.82	17.44	2.87	-0.72	-1.23	.230
Social relationships	9.56	2.40	9.20	2.27	0.36	0.91	.371
Environment	25.17	5.11	26.50	4.28	-1.33	-2.01	.056
Total	79.42	11.37	77.21	10.64	2.21	1.14	.265

Notes: WHOQoL-Bref= World Health Organization Quality of Life Questionnaire-Bref; QoL= Quality of Life; Diff.= Differences between post-treatment and six-month follow-up. Significant differences are shown in bold.

Pre/post-treatment differences in the CBTG

Pre/post-treatment analyses for CBTG were performed with the Wilcoxon signed-rank test. We observed a statistically significant reduction ($p< .05$) in *excessive worry*, *depressive symptoms,* and *high personal sensitivity*, as well as a significant increase ($p< .05$) in one of the social skills (*Interacting with strangers*) and in the *Psychological domain* of quality of life at post-treatment as compared to the scores at pre-treatment.

When we consider the effect size of the pre/post-treatment differences, we found that in all five of the above variables the effect size was large ($r> .50$).

It should be noted that these results should be considered with caution due to the low number of participants (*N*= 7).

Pre/post-treatment differences in the PHARG

Regarding the PHARG we also used the Wilcoxon rank test to analyze pre/post-treatment differences. The data indicate that only *self-esteem* showed a significant improvement ($p< .05$) at post-treatment as compared to its score at pre-treatment. The observed effect size was large ($r> .50$). Again, we have to point out that these results should be considered with caution due to the low number of participants (*N*= 5).

Comparisons between groups at post-treatment

Before making comparisons between the MISAG and the other two treatment groups at post-treatment, we want to note that in the pre-intervention measures

there were no significant differences between MISAG and CBTG in the variables assessed, except in alcohol consumption and in four dimensions and the global score of social skills (which were higher in CBTG). Between the MISAG and the PHARG there were no significant differences in any variable. Finally, between the CBTG and the PHARG there were significant differences only in two social skills and in quality of life, the latter being greater in the CBTG.

DIFFERENCES BETWEEN THE MISAG AND THE CBTG

Comparisons between the total scores of the psychological aspects assessed at post-treatment between MISAG and CBTG revealed that MISAG had a greater improvement than CBTG in *social skills*, *worries*, *personal sensitivity*, *quality of life*, *APD symptoms, self-esteem*, and *alcohol use*, but the last three being the only conditions that showed significant statistical differences. CBTG only obtained superior improvements to MISAG in depressive symptoms, with no statistically significant differences in this variable between the two groups (Table 7).

Table 7

Means and standard deviations at post-treatment in the MISAG (*N*= 45) and the CBTG (*N*= 7) in different psychological conditions, and nonparametric comparison (Mann-Whitney U) of the differences between these two groups

Variables (self-report measures)	MISAG		CBTG		*Z*	*p*	*r*
	M	*SD*	*M*	*SD*			
Social skills (total SOSAQ)	118.39	24.78	114.14	16.89	0.903	.366	--
Worry (PSWQ)	45.75	14.27	48.71	12.84	-0.629	.529	--
Depressive symptoms (BDI-II)	8.95	8.68	4.28	4.96	1.592	.112	--
Alcohol use (AUDIT)	2.15	4.17	5.71	3.90	-2.936	**.003**	.41
APD symptoms (APDQ)	19.89	6.42	28.28	2.29	-2.915	**.003**	.40
Personal sensitivity (PSQ)	91.69	25.42	104.86	15.07	-1.541	.123	--
Self-Esteem (RSES)	29.42	5.65	24.57	2.99	2.373	**.018**	.33
Quality of Life (total WHOQoL-Bref)	86.99	15.41	78.00	8.83	1.492	.136	--

Notes: MISAG= Multidimensional intervention for social anxiety group; CBTG= Cognitive behavioral therapy group; SOSAQ= Social Skills Assessment Questionnaire; PSWQ= Penn State Worry Questionnaire; BDI-II= Beck Depression Inventory-II; AUDIT= Alcohol Use Disorders Identification Test; APD= Avoidance Personality Disorder; APDQ= APD Questionnaire; PSQ= Personal Sensitivity Questionnaire; RSES= Rosenberg Self-Esteem Scale; WHOQoL-Bref= World Health Organization Quality of Life; *r*= Effect size for the Mann-Whitney U. Significant differences between groups are shown in bold.

DIFFERENCES BETWEEN THE MISAG AND THE PHARG

Comparisons between the total scores of the variables assessed at post-treatment between the MISAG and the PHARG reveal that the MISAG had a greater improvement than the PHARG in all of them, with statistically significant changes in *depressive symptoms, APD symptoms, personal sensitivity, self-esteem*, and *quality of life* (Table 8).

Table 8

Means and standard deviations at post-treatment in the MISAG (*n*= 45) and the PHARG (*n*= 5) in different psychological conditions, and nonparametric comparison (Mann-Whitney U) of the differences between these two groups

Variables (self-report measures)	MISAG		PHARG		*Z*	*p*	*r*
	M	*SD*	*M*	*SD*			
Social skills (total SOSAQ)	118.39	24.78	107.20	14.36	1.288	.198	--
Worry (PSWQ)	45.75	14.27	56.40	9.23	-1.618	.106	--
Depressive symptoms (BDI-II)	87.34	8.36	102.60	11.59	-2.758	**.006**	.39
Alcohol use (AUDIT)	2.15	4.17	3.40	5.27	0.097	.923	--
APD symptoms (APDQ)	19.89	6.42	26.00	5.96	-2.015	**.044**	.28
Personal sensitivity (PSQ)	91.69	25.42	122.67	13.05	-2.066	**.039**	.29
Self-Esteem (RSES)	29.42	5.65	23.60	4.22	2.053	**.040**	.29
Quality of Life (total WHOQoL-Bref)	86.98	15.41	71.00	10.25	2.147	**.032**	.30

Notes: MISAG= Multidimensional intervention for social anxiety group; PHARG= Pharmacological treatment group; SOSAQ= Social Skills Assessment Questionnaire; PSWQ= Penn State Worry Questionnaire; BDI-II= Beck Depression Inventory-II; AUDIT= Alcohol Use Disorders Identification Test; APD= Avoidance Personality Disorder; APDQ= APD Questionnaire; PSQ= Personal Sensitivity Questionnaire; RSES= Rosenberg Self-Esteem Scale; WHOQoL-Bref= World Health Organization Quality of Life; *r*= Effect size for the Mann-Whitney U. Significant differences between groups are shown in bold.

Discussion

The present study is a continuation of a recently published paper evaluating the effectiveness of the MISA program in reducing social anxiety in patients with SAD (Caballo et al., 2021). In this current paper, our goal was to evaluate to what extent such a program could also improve some conditions frequently related to social anxiety, such as low social skills (SS), excessive worries, depressive symptoms, problematic alcohol use, high personal sensitivity, avoidant personality symptoms, low self-esteem, and perceived quality of life. Although these variables do not appear as an explicit goal of the MISA program, we thought that the improvement in the lives of the patients who participated in the program was not limited only to a decrease in their social anxiety, but could be more general, extending to other characteristics that, as reported in the literature, frequently occur with social anxiety.

The relationship between *social skills* and social anxiety that we and other authors have found in previous studies consistently revolves around .50, implying a relatively strong association (e.g., Caballo et al., 2003, 2014, 2017; Hsu et al., 2012; Lefrançois et al., 2011). Thus, it is not surprising that a decrease in social anxiety also implies an increase in SS, particularly since a part of the treatments for social anxiety include social skills training (SST) (e.g., Beidel et al., 2014; Turner et al., 2003), as is also the case of the MISA program. Focusing specifically on the impact of our program in the area of SS, we found that patients improved in all 10 skill classes that compose the SOSAQ, as well as in the total SOSAQ score. The improvement

was statistically significant ($p < .001$) in 8 of them, some of which are closely reflections of the basic dimensions that define social anxiety, such as *Interacting with strangers*, *Speaking in public/Interacting with people in authority*, *Interacting with people I am attracted to*, or *Dealing with embarrassing situations*. Moreover, the effect size was large for 6 social skills and for the total score and medium for the other two remaining skills, which substantiates that the program has an important impact on the improvement of SS. Only in the skills of *Expressing positive feelings* and *Apologizing* were there no significant improvements. The reason could be that these two kinds of skills are not included in the SST of the MISA program and, therefore, it is not to be expected that such a program would have a significant impact on their improvement. But it could also be influenced by the fact that subjects with social anxiety do not have special problems in apologizing, something that can be observed in the pre-treatment mean in this skill by patients with social anxiety fell into the range of the mean ± 1 standard deviation obtained by subjects without special social anxiety problems (Caballo et al., 2017). Regarding the *Expression of positive feelings* skill, the patients in the MISA group improved significantly from pretreatment to the follow-up period, which would indicate that, although not explicitly addressed by the MISA program, this skill improves more slowly and to a lesser degree than the others, but ultimately improves significantly (even if it needs a longer period of time).

Regarding other characteristics assessed at pre- and post-treatment, we found that patients decreased their excessive worries, depressive symptoms, high personal sensitivity, avoidant personality symptoms, and increased their self-esteem, all significantly ($p < .001$) and with a large effect size. They also reduced alcohol consumption significantly ($p < .01$), although the mean of this variable did not indicate the presence of a risky or harmful pattern of alcohol consumption among patients with social anxiety.

About the *symptoms for avoidant personality disorder*, the improvement was significant considering that this is a condition that some authors regard that is similar to what in the DSM-IV (APA, 1994) was called generalized social phobia (e.g., Bellack & Hersen, 1990; Bögels et al., 2010; Caballo et al., 2019; Caballo, Salazar, García-López, et al., 2014), and that, therefore, would also be targeted for treatment in the MISA program.

The impact on decreasing *depressive symptoms* and *excessive worries* can also be considered as an important side effect of the treatment, particularly considering that many studies report the degree of association between social anxiety and depressive symptoms (e.g., Erickson et al., 2016; Flynn et al., 2019; Gregory & Peters, 2017; Heidari & Nemattavousi, 2021; Tyrała et al., 2015), as well as between social anxiety and excessive worries (Counsell et al., 2017; Dugas & Robichaud, 2007; Erickson et al., 2016; Starcevic et al., 2007). We consider that the positive results obtained with the MISA program are due to the fact that patients discover how they have given up living the way they want to live (according to their values) because of fear and with the learning of different strategies (mindfulness, acceptance, restructuring and defusion from dysfunctional thoughts, and learning

of social skills) they now react in a different way to their fears/thoughts/sensations and can cope with the feared situations (including social situations too). Thus, it can be expected that as positive reinforcement from exposure increases (and negative reinforcement from avoidance is reduced) they improve their exaggerated worries and depressive symptoms, as shown by the post-treatment results. Specifically, comparing the effect sizes of the MISA program with those reported in other studies evaluating the effectiveness of some form of CBT on depressive symptoms in subjects with SAD (e.g., Beidel et al., 2014; Rozen et al., 2022; Stangier et al., 2003), we see that the MISA program shows superior performance. However, it is difficult to discuss about pathological worry, as we do not know about the effect of psychological interventions in this regard in patients with SAD. Thus, the effectiveness of reducing excessive worry with the MISA program sets an interesting precedent in this field.

On the other hand, the significant reduction in *high personal sensitivity*, a characteristic of those considered highly sensitive persons (HSP) and which would have an important temperamental component, gives us an idea that this trait can also be modified by the MISA program, although at a somewhat lower level than the other characteristics discussed above. Perhaps the supposed biological component of this condition may limit the size of the change, bearing in mind, also, that the situations to which a HSP is particularly sensitive or overreacts are not only social. In any case, the change observed in patients in the MISA group was greater than that shown by patients in the other two treatments groups with which the MISA program was compared. This leads us to think that the training offered within the latter group increases the probability of learning to modify the way of reacting to events, whether internal or external, thus decreasing the suffering that is sometimes involved in experiencing the stimulation with high intensity.

Increased *self-esteem* was another benefit of the MISA program. This result would be expected when at the end of the treatment patients feel that they are able to approach situations they did not dare before and carry out new behaviors previously forbidden to them. In addition, the revision of their values and the cognitive change focused on what they can do and care about, could have contributed to the patients' better self-esteem. The effectiveness of the MISA program on the self-esteem of people with SAD makes even more sense if we consider the existing levels of correlation between social anxiety and low self-esteem (e.g., Caballo, Salazar, & CISO-A Spain Research Team, 2018; Cheng et al., 2015; Gregory & Peters, 2017; Heidari & Nemattavousi, 2021; Iancu et al., 2015; Nordstrom et al., 2014; Ritter et al., 2013; Schreiber et al., 2012; Sun & Wu, 2011; Tan et al., 2016). It is even possible that the value of change is better appreciated viewed from another perspective, such as that suggested by Khanam and Moghal (2012). These researchers noted that low self-esteem is a significant predictor of social anxiety, which leads us to believe that by increasing it there is a lower risk of relapse in patients with SAD. The effectiveness of the MISA program in improving self-esteem is comparable to and even exceeds that of other mindfulness-based stress reduction (MBSR) interventions (see review by Norton et al., 2015).

The last of the variables assessed was *quality of life* as perceived by patients and measured by the WHOQoL-Bref. Patients significantly improved their quality of life in the four domains pertaining to this construct and the assessment of the two general issues (global quality of life and general health) measured by the questionnaire ($p < .001$), with medium to large effect sizes. As might be expected, the Psychological and Social relationships domains show the greatest improvement, considering what is being worked on within the MISA program. If we consider the overall score, quality of life improved markedly for those who participated in the MISA program, with a large effect size ($d > 0.80$). Although we might expect that the decrease in social anxiety would increase the patients' quality of life, the use of a specific measure for this variable confirms the above assumption. This improvement is comparable and even superior to that of other therapies with SAD patients, such as MBSR and mindfulness and acceptance-based group therapy (MAGT), and very similar to that reported in studies with ACT (see García-Pérez & Valdivia-Salas, 2018; Liu et al., 2021; Norton et al., 2015).

When we examined whether the changes in the above variables persisted over time, specifically six months after the end of treatment, we found that this was the case in almost all of them. Some even continued to improve significantly. Specifically, patients continued to improve in the 10 social skills included in the SOSAQ, even significantly in 3 of them and in their global score. Presumably, patients continued to practice what they learned in the program in their daily lives after the program ended and the improvement was not only maintained but continued to increase over time. On the other hand, patients continued to decrease their worries and high personal sensitivity at six months in a significant way compared to post-treatment. On the variables of alcohol use, depressive symptoms, avoidant personality symptoms, and self-esteem, patients maintained their gains in the follow-up period. In terms of quality of life, patients maintained their improvements six months after the end of treatment, with one exception. There was a worsening in physical health, which refers to activities of daily living, medication dependence, energy and fatigue, mobility, pain and discomfort, sleep, and work capacity. It is possible that events occurring in the period between post-treatment and follow-up may have played a role in this deterioration. To clarify this issue, an individual interview with all patients who were evaluated six months after the end of treatment would have been very useful.

The improvement of all these variables means that the MISA program not only works to drastically decrease social anxiety in the participants (Caballo et al., 2021), but also reduces a whole series of negative conditions that frequently have patients with social anxiety (such as excessive worries, depressive symptomatology, excessive personal sensitivity, and avoidant personality symptoms), while increasing other desirable aspects (such as social skills, self-esteem, and quality of life). The results obtained about the MISA program seem to gain even more support if we look at those obtained by the other two treatment groups used in this study. While it is true that the number of participants in the CBTG and PHARG is very small, the pre/post-treatment analyses within each group showed that their improvements in these

other variables related to social anxiety occur to a lesser degree. In the CBTG, patients improved their excessive worry, depressive symptoms, high personal sensitivity, the social skill of interacting with strangers, and the psychological domain of quality of life, with effect sizes indicating that the changes were large. These data would indicate that individual CBT works quite well in addressing psychopathological symptoms comorbid with SAD. However, in the GPHAR, post-treatment data indicate that the only improvement was in self-esteem (with a large effect size). It seems that pharmacological intervention would not be as effective in reducing other psychopathological conditions associated with SAD, which would be something to be expected given the symptomatological specificity of drugs.

When we make comparisons between groups, we found that the MISAG obtained significantly better results than the CBTG in reducing alcohol use, decreasing avoidance personality symptoms, and increasing self-esteem. In the rest of the variables the differences were not significant between the two groups, although the mean scores showed that the MISAG patients were in better psychological conditions than the CBTG patients, except in depressive symptoms. Regarding PHARG, MISAG results were significantly better in decreasing depressive symptoms, excessive personal sensitivity, avoidance personality symptoms, and in increasing patients' self-esteem and quality of life. We could say that, in general, patients who followed the MISA program had better results than patients who followed one of the other two treatments in a series of psychopathological symptoms usually associated with SAD. However, we should be cautious again with the results of the between-group comparison given the low number of participants in the CBTG and the PHARG. This would be one of the limitations of the study, which we hope to address in future publications. Continuing with the limitations of the study, we would also like to point out that we did not have a waiting list control group nor, due to circumstances beyond our control, did we obtain post-treatment data from all the countries that started the MISA program.

To conclude, we would like to emphasize the important impact of the MISA program on variables other than, but associated with, social anxiety. This program not only drastically reduces the latter problem in the participating subjects (see Caballo et al., 2021), but also has a significant effect on other aspects of the patients' lives, improving social skills, excessive personal sensitivity, depressive symptoms, alcohol consumption, excessive worries, self-esteem and, in general, their quality of life. In short, we could consider the MISA program as a broad-spectrum treatment program, focused on social anxiety, but with ramifications for the improvement of other problems associated with it.

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