

Social Anxiety Disorder and Social Skills: A Critical Review of the Literature

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Abstract

The objective of this article is to present a critical analysis of the research outlines used in empirical studies published between the years 2000 and March of 2007 about social anxiety disorder and its associations with social skills. Seventeen papers were identified and grouped into two classes for analysis, namely: Characterization of Social Skills Repertoire (N = 10) and Therapeutical Modalities – Application and Comparison of Clinical Intervention (N = 7). The critical analysis of the research outlines pointed to the necessity of new studies with clinical and non-clinical samples, with random allocation of individuals, with the proposition of contextualized interaction tasks, in order to support the generalization as to the association of the social skills and social anxiety disorder, and to demonstrate the functionality and process by which anxiety interferes with social performance.

Keywords

social anxiety disorder, phobia, social anxiety, social skills.

Social skills are in general considered to be essential for the processes of social adjustment and functioning of individuals, whether they have psychiatric disorders or not (Angélico, 2004; Argyle, 1967/1994; Bandeira, 2003; Halford & Hayes, 1995; Morrison & Bellack, 1987; Turner, Beidel & Flood, 2003; Turner, Beidel & Townsley, 1992; Zigler & Phillips, 1962).

Social skills can be defined as “different classes of social behavior within the individuals repertoire to deal appropriately with demands of interpersonal situations” (Del Prette & Del Prette, 2001, p. 31), considering the situation in its wide meaning, including culture variables (Argyle, Furnham & Graham, 1981). Such concept comprehends the descriptive aspect of the verbal and non-verbal behavior displayed by the individual before different demands of the interpersonal situations. It is necessary to distinguish this concept from that of social performance, which refers to displaying a behavior or sequence of behaviors in a certain social situation. Del Prette and Del Prette (2001) add that both *cognitive abilities* of social perception and information processing which define, organize and guide social performance, and verbal and non-verbal *behavioral abilities* which implement the direction defined by the cognitive processes are grouped in the concept of social skills.

Social skills deficits are considered to hinder social functioning and the adaptative ability of individuals, with several implications and several impairments, especially for performance and social interactions. Impairment in social skills has been assumed as one of the paramount aspects of social anxiety disorder (SAD), which is considered a serious mental health problem because of its high prevalence and its resulting limitations on social interactions and performance. According to the diagnostic criteria from DSM-IV (APA, 1994), individuals with SAD or social phobia exhibit excessive, persistent and irrational fear of being seen behaving in a humiliating or embarrassing way – by the display of anxiety

or inappropriate performance – and of disapproval consequences or rejection by others.

One might hypothesize that individuals with SAD lack appropriate verbal or non-verbal abilities which are necessary to deal with social interactions or performance situations. However, according to the review by Furmark (2000), research data have been inconsistent. Consequently, such direct association is arguable, considering that people with SAD, notwithstanding appearing to have inadequate performance, this might be due to behavioral inhibition, as opposed to actual lack of abilities. It is possible that social skills are just withdrawn during states of high anxiety, like those associated with situations of performance and interaction for individuals with SAD. In this case, in particular, it would be desirable to develop and encourage coping abilities in the repertoire of these individuals, and in many cases the use of relaxation techniques or task concentration training would be indicated.

When evaluating the types of deficits that the individual may display in his or her repertoire of social skills, one can stress: a) *acquisition deficit*, characterized by the non-occurrence of social skills before the demands of the environment; b) *performance deficit*, characterized by the occurrence of a specific ability with lower frequency than the one expected for the demands of the environment; and c) *fluency deficit*, demonstrated by the occurrence of abilities with lower proficiency than the one expected for the social demands.

Objective

Considering the role of anxiety in the inhibition of socially competent performance and the inconsistency of data regarding the association between SAD and social skill, an examination was carried out to identify in the indexed literature, between the years 2000 and March of 2007, the empirical papers which cover this subject, aiming to realize a critical analysis of the research

outlines used in these study. The procedure of analysis is supported by a review of the outlines and of the research results which aimed at characterizing the social skills repertoire of individuals with SAD, or with high levels of social anxiety, as well as the evaluation of the effectiveness of Social Skills Training (SST) as a therapeutical approach for the treatment of SAD.

Procedure

Relevant empirical studies concerning the subject “SAD and Social Skills” were identified based on systematic search in the literature, using the databases Medline, PsycINFO, Lilacs and Scielo, by means of combination of words *social phobia*, *social anxiety*, *social skills* and *social skills training*.

For the present review work, studies with participants of both sexes, adults, from clinical, university and community samples, were included. The following exclusion criteria were used for the studies: (a) other ages (children, adolescents, and elderly); (b) other diagnosis (other disorders and syndromes); (c) other approaches applied to the subject, such as pharmacological, or exclusively psychometric studies; (d) reports on programs about modalities of intervention; (e) research questions approaching the association of social anxiety and/or social skills with face disfigurement, endocrinological problems, cerebral lesion, cochlear implant, enuresis, and social adversities; and (f) association of social anxiety and/or social skills with variables such as self-image, locus of control, internalizing/externalizing behaviors, stress, and defense mechanisms.

A collection of 17 papers was selected by means of systematic search procedure, and the inclusion/exclusion criteria.

Results

The 17 papers included in this review were grouped into two classes: Characterization of the Social Skills Repertoire (N = 10), and Therapeutical Modalities – Application and comparison of clinical intervention (N = 7), which are analyzed below.

Characterization of the Social Skills Repertoire

As to the research methods used in the papers that were included in this class, a predominance of cross-sectional studies was observed (Baker & Edelmann, 2002; Bögels, Rijsemus & De Jong, 2002; Thompson & Rapee, 2002; Wenzel, Graff-Dolezal, Macho & Brendle, 2005; Alden & Mellings, 2004; Christensen, Stein & Means-Christensen, 2003; Stopa & Clark, 2000; Horley, Williams, Gonsalvez & Gordon, 2003; Sheffer, Penn & Cassisi, 2001), and only one longitudinal study (Strahan, 2003).

These studies had in common the description of profiles of social skills displayed by individuals with SAD or with high levels of social anxiety in self-re-

Table 1. Characterization of the outlines adopted in the studies of description of profiles

OUTLINES	STUDIES									
	1	2	3	4	5	6	7	8	9	10
Number of participants										
with generalized SAD	18	-	-	-	-	25	-	15	20	-
with other anxiety disorders	18	-	-	-	-	-	-	-	20	-
socially anxious	-	36	26	-	13	-	62	-	-	55
non-clinical	18	36	24	29	14	26	62	15	20	198
Origin of the samples										
university	-	+	+	+	+	-	+	-	-	+
clinic	-	-	-	-	-	+	-	+	+	-
community	+	-	-	-	-	+	-	-	+	-
SS Indicators										
social performance	+	+	+	+	+	-	-	-	-	-
interpersonal perceptions	-	-	-	-	-	+	+	+	+	-
academic performance	-	-	-	-	-	-	-	-	-	+
communication skills	-	-	-	-	+	-	-	-	-	-
social competence	+	-	-	+	+	-	-	-	-	+
Collecting context										
a) social interaction tasks	+	+	+	+	+	+	+	-	-	-
use of verbal prompts by confederate	+	-	+	+	-	+	-	-	-	-
duration of social interaction (min.)	9	5	10	6	30	5	15	-	-	-
b) presentation of face pictures	-	-	-	-	-	-	-	+	-	-
c) filling of questionnaires and scales	+	+	+	+	+	+	+	+	+	+
d) use of physiological measures	-	+	-	+	-	-	-	-	-	-
Interlocutor in the social interaction										
confederate	+	+	+	+	-	+	-	-	-	+
romantic partner	-	-	-	-	+	-	-	-	-	-
other participant	-	-	-	-	-	-	+	-	-	-

1: Baker and Edelmann (2002); 2: Bögels et al. (2002); 3: Thompson and Rapee (2002); 4: Sheffer et al. (2001); 5: Wenzel et al. (2005); 6: Alden and Mellings (2004); 7: Christensen and cols (2003); 8: Horley et al. (2003); 9: Stopa and Clark (2000); 10: Strahan (2003).

SS: Social skills; (+) present in the study; (-) absent in the study.

ported measures. A characterization of specific aspects about the outlines adopted in these studies is presented in Table 1.

The samples of the studies ranged between 27 and 253 participants (median = 52), which included patients diagnosed with generalized subtype of SAD or other anxiety disorders, socially anxious individuals, and non-clinical ones, of both sexes, with ages varying between 18 and 64 years. The origin of the participants was predominantly from university environment, followed by the clinical environment and the community.

The objectives of the studies that were analyzed focused the role of anxiety on different indicators of social skills, pointing out that high levels of social anxiety affect negatively: (a) social performance, defined as molecular and molar behavioral performance displayed during social interaction; (b) academic performance, evaluated by the drop-out rate and academic success; (c) communication skills, defined by the verbal content and speaking

function displayed in the interaction with romantic partner; (d) interpersonal perceptions, defined as social judgments, self-perceptions, metaperceptions and perception of others, interpretation of social events, and processing of facial expressions; and (e) social competence, defined as the level of proficiency with which the verbal and non-verbal behavioral classes of an individual are articulated in successful social performance.

Amongst the several instruments and measures that were used in the studies, the *Beck Depression Inventory* (BDI) was used most frequently (Baker & Edelmann, 2002; Alden & Mellings, 2004; Christensen et al., 2003; Thompson & Rapee, 2002; Horley et al., 2003), followed by *Fear of Negative Evaluation Scale* (FNE) (Wenzel et al., 2005; Thompson & Rapee, 2002; Stopa & Clark, 2000; Horley et al., 2003).

Predominantly, the data of seven studies were collected in experimental situation of social interaction, i.e., of conversation with a confederate, with

romantic partner, or other participants (socially anxious and nonanxious individuals). All the research assistants were previously trained for the tasks of social interaction. Except in the study by Thompson and Rapee (2002), the assistants were regarded as other participants, whereas in the other ones, they were identified as confederates. Although the interactions of the participants with their interlocutor ranged between 5 and 30 minutes, in most studies it was less than 10 minutes.

The confederates of four studies were instructed to initiate conversation or to give verbal prompts for its continuation every time a silence period occurred.

The measures used in the procedures of these studies were: (a) subjective; (b) objective; and (c) physiological. The objective measures were video recordings of the interactions; the subjective ones were the application of questionnaires, scales or inventories; and the physiological measures were the examination of skin conductance, level of cheek

Table 2. Moments of registration of the measures during the experimental sessions of the studies

Studies	Measures		
	Before	During	After
Bögels et al. (2002)	<ul style="list-style-type: none"> • skin conductance; • cheek coloration; • Visual Analogue Scales (VAS). 	<ul style="list-style-type: none"> • skin conductance; • cheek coloration. 	<ul style="list-style-type: none"> • skin conductance; • cheek coloration; • VAS; • causal attributions of success and failure; • social skills rating scale.
Sheffer et al. (2001)	<ul style="list-style-type: none"> • Subjective Units of Distress (SUDS); • heart rate. 	<ul style="list-style-type: none"> • heart rate. 	<ul style="list-style-type: none"> • SUDS; • heart rate; • scale of impression.
Wenzel et al.(2005)	<ul style="list-style-type: none"> • Fear of Negative Evaluation Scale (FNE); • Social Avoidance and Distress Scale (SAD); • Dyadic Adjustment Scale (DAS); • Couples' Problem Inventory (CPI). 	<ul style="list-style-type: none"> • video recordings of interactions 	-
Baker and Edelman (2002)	-	<ul style="list-style-type: none"> • video recordings of interactions 	<ul style="list-style-type: none"> • rating scales relating to perceived bodily sensation
Alden and Mellings (2004)	-	-	<ul style="list-style-type: none"> • Social Judgment Questionnaire; • Focus of Attention Questionnaire (FAQ)
Christensen et al. (2003)	-	-	<ul style="list-style-type: none"> • Traits ratings.
Thompson and Rapee (2002)	-	<ul style="list-style-type: none"> • video recordings of interactions 	<ul style="list-style-type: none"> • levels of anxiety during the structured and unstructured situations.

coloration and heart rate. Table 2 shows when such measures were taken during the experimental session.

For better understanding the research outlines that were used, considering their specificities, the procedures for data collection will be detailed.

In four of these studies, the participants were given general instructions to act as if they were being introduced to another person with whom they would be interacting (Baker & Edelman, 2002; Christensen *et al.*, 2003; Thompson & Rapee, 2002; Alden & Mellings, 2004). The participants of two other studies were given specific instructions to initiate and to keep conversation with the research assistants (Sheffer *et al.*, 2001; Bögels *et al.*, 2002).

In the procedure by Bögels *et al.* (2002), the participants interacted with the research assistants, one male and another female, and were informed that these assistants would judge their skill to initiate and to keep conversation, and also that this situation would be recorded in order to evaluate their behavior. During the interactions, the research assistants uncovered three large mirrors in which half of the participants could see their reflection during the conversation, favoring the condition of self-awareness.

In Wenzel *et al.* (2005), the couples were instructed to discuss three topics: neutral (an event of their day), negative (a problem), and positive, with a duration of ten minutes for each topic.

After each interaction, in turns, with other three individuals, the participants in the study by Christensen *et al.* (2003) were requested to rate themselves, their interaction partners, and their meta-perceptions, that is, to evaluate how they thought they had been seen by their interaction partners, based on a variety of personality traits represented by adjectives such as sociable, friendly, nervous, and quiet, in 9-point ranking scales, anchored with 1 (*not at all*) and 9 (*very much*).

In Thompson and Rapee (2002), both participants and confederates were left by the researcher in the experimental room with the excuse that he or she would go and get some cassettes in order to record their role-playing interaction. A video camera would be visible to the participant, showing it was turned on, although there was no cassette in it. The resulting interactions were considered as unstructured task. After the researcher had returned, both participants and confederates were instructed to imagine they were in a party and that they were supposed to get to know one another as well as possible, and were informed that they were being recorded. This interaction was the structured task of the study. Both types of tasks were subjected to comparison.

In the study by Alden and Mellings (2004), after greeting the participants, the experimenter told she would be behind a one-way mirror. The confederate was introduced into the room and should start conversation with the participant. They were instructed to interact as if they had just been introduced. After that, the participants and confederates would independently fill in post-interaction questionnaires.

In Sheffer *et al.* (2001), the participants took part in two conversational probe role-play tasks corresponding to conditions of high and low image management demand. Each probe task was carried out with a different confederate. In the low demand condition, the participants were told that the confederates would be evaluated, and that they had been instructed to make the best impression possible on the participants and that they should evaluate them using the Impression Scale. In the high demand condition, the participants were told they would be evaluated and that they should make the best image possible on the confederate, and that both the confederate and a research assistant would evaluate them using the Impression Scale.

The procedures to collect data in the other three studies used objective measures (Horley *et al.*, 2003), subjective ones (Stopa & Clark, 2000), and both objective and subjective ones (Strahan, 2003).

In Horley *et al.* (2003), the objective measure was the monitoring, by means of a computer system, of the visual exploration of three pictures showing different facial expressions (neutral, happy, and sad) that were presented to the participants. They were instructed to fixate on the centre of the screen until the picture appeared, and then, to look at it in any manner they chose. Each stimulus was presented for 10s, with an interval of 15s between them.

In the research by Stopa and Clark (2000), a package was sent to the participants containing the questionnaires and scales, and they were requested to complete them independently.

In Strahan (2003), the university students participating completed inventories and questionnaires comprehending anxiety evaluation, social skills, social and academic adjustment, and educational success test, in small groups (with 4-5 students by session), carried out in the first 4-6 weeks of classes. The information related to academic performance of the students was provided by the Registrar's office for each semester for two years.

As to the results of the studies included in this category, an agreement was observed among five studies suggesting that individuals with SAD and with high levels of social anxiety have poorer social skills repertoires, as compared to the non-clinical control group (Baker & Edelman, 2002; Horley *et al.*, 2003; Strahan, 2003; Wenzel *et al.*, 2005; Thompson & Rapee, 2002), besides showing poorer social competence (Baker & Edelman, 2002; Strahan, 2003; Wenzel *et al.*, 2005).

In the study by Horley *et al.* (2003), individuals with SAD showed avoidance of more important areas of the face, particularly the eyes. This impairment may be attributed to the more self-focused

attention and negative self-perception shown by individuals with this disorder. The results of visual exploration in this study offered empirical evidence for the clinical observation that individuals with social phobia tend to avoid visual contact during social interaction.

In the study by Strahan (2003), social anxiety did not reach enough significance as a predictor for the academic performance and college persistence. However, as the author recognizes, it is possible that high levels of social anxiety exert indirect effects on academic performance and retention, considering that its negative correlation with academic adjustment was moderately significant, and academic adjustment had a clear effect on other academic success indicators.

Three studies checked the influence of the structure and demands of the situation on the social performance of individuals with social phobia, socially anxious and non-clinical. The results by Thompson and Rapee (2002) reveal that the structure of social interaction situations moderates differences between the social performance of socially anxious and non-anxious individuals, and that they show better social performance in structured situations as compared to unstructured situations. According to this conclusion, the results of the experiment by Sheffer *et al.* (2001) point out that high or low demands to produce a positive impression of oneself constitute an important mediating factor in the relationships between anxiety, heart rate and social competence in non-clinical individuals. In the condition of low demand to produce a good impression of oneself, higher social competence was consistently associated with lower heart rate and less self-reported anxiety. In the condition with high demands, higher social competence was only associated with higher heart rate.

The study by Stopa and Clark (2000), revealed that patients with SAD tend to interpret ambiguous social situations (e.g. "you have visitors round for a meal and they leave sooner than you expected") in a negative manner and show a specific tendency to interpret social events moderately negative (e.g. "you have been talking to someone for a while and it becomes clear that they are not really interested in what you are saying") in a more catastrophic way, as compared to control groups.

Three other studies focused on comparing self-evaluation of participants with an external evaluation. Two of the studies found agreement as to the negative self-perception of individuals with high levels of social anxiety. In Christensen *et al.* (2003), the participants with high levels of social anxiety saw themselves as less sociable, less likeable, more nervous, less intelligent and more distant in the interaction with other participants. Additionally, they were seen as less sociable, less relaxed, quieter, more nervous, more distant, and with a marginally significant trend to be seen as more shallow by their interaction partners. However, the results showed that although other people are able to detect some discomfort in socially anxious individuals in social situations, they do not think less of them as a result. This kind of information may be used by different treatment modalities to change some negative beliefs kept by individuals with SAD, as to how they are perceived by others and

the imagined consequences thereof. In the study by Bögels *et al.* (2002), the participants with high social anxiety evaluated their social skills, which they displayed during a conversation, as more deficient than those with low social anxiety. Nevertheless, the differences between people with high and low social anxiety with respect to the self-evaluated skills and evaluated by research assistants were due to differences in the display of anxiety symptoms (e.g. fidgeting), but not due to differences in social skillful behavior. In Alden and Mellings (2004), the participants with generalized SAD were evaluated by themselves and by confederates as less skillful and feeling or appearing to be more anxious than the participants in the control group.

The analysis of the results obtained by the studies reveal that high levels of social anxiety affect negatively the social performance, communication skills, interpersonal perceptions, and social competence of individuals with social phobia and socially non-anxious. The results of the study that aimed at verifying the association between social anxiety and academic performance were inconclusive about that, and are the only restriction to the confirmation of the initial hypothesis.

Although one can assume that the element that is evaluated in the behavioral repertoire of an individual with SAD or with high levels of social anxiety in a planned situation is, in a general manner, representative of their behavior, one could argue if this element really represents their behavioral repertoire. Such a question suggests the necessity for studies supported by ecological validity (degree with which the conditions of study are factual or applicable to real life) and with the possibility of wider generalization of the results, which could not be afforded by anyone of the studies included in this category. Besides, the gender characteristics of the samples were restricted, including predominantly female participants. It is inevitable to assume that, in the development of many of these studies, the size of the samples was influenced by the nature of the population that was investigated. In spite of this limitation, it would be desirable to rely on more comprehensive samples including individuals with clinically confirmed diagnosis of SAD.

It was also observed the lack of any standard test, inventory or scale to evaluate social skills to be used in different studies in order to provide more validity and reliability to the results of the studies that were included.

The conclusion was drawn that the profile of individuals with generalized SAD or with high levels of social anxiety is characterized by the presence of impairment in their social skills.

Therapeutical Modalities – Application and Comparison of Clinical Intervention

The studies that were included in this category used quasi-experimental outlines and aimed directly or indirectly at evaluating the effectiveness of Social Skills Training (SST) as a therapeutical approach to treat SAD.

The effectiveness of the use of SST was tested in diverse ways in the studies. In four of them, the effectiveness of treatment was compared with those of other therapeutical modalities, such as cognitive

behavioral therapy (CBT) (Van Dam-Baggen & Kraaimaat, 2000a; Herbert *et al.*, 2005), supportive therapy (Cottraux *et al.*, 2000), and behavioral therapy (Stravynski *et al.*, 2000), which were used as methodological control. In the study by Cottraux *et al.* (2000), SST constituted a module composing the CBT. In Herbert *et al.* (2005), the SST component was completely integrated to cognitive restructuring and simulated exposure exercises which were the bases of the standard protocol of group CBT.

In another study, Van Dam-Baggen and Kraaimaat (2000b) investigated the effectiveness of group SST for patients with generalized SAD grouped in "reticent" and "non-reticent" subtypes. The authors defined as "reticent" the participants who reported performing low frequency of social behaviors, and as "non reticent" those who reported performing high frequencies of social behaviors.

Based on a case study, Espada, Quiles and Méndez (2002) presented a multi-component intervention in which SST constituted one modulus of treatment along with other cognitive-behavioral techniques, namely, cognitive restructuring, self-instructing, imagination and live exposure, instructions in distractions, and training in relaxation.

And yet another study, Bishop (2003) tested the applicability of online SST distant learning system to help the participants to better cope with their social difficulties, converting phrases and sentences which they judged to be confusing and offensive in more concise and understandable definitions.

In the comparison studies (Van Dam-Baggen & Kraaimaat, 2000a; Cottraux *et al.*, 2000; Stravynski *et al.*, 2000), the authors formulated as a hypothesis the statement of the best effectiveness of SST over the other therapeutical modalities, such as CB, supportive and behavioral therapies. Herbert *et al.* (2005) hypothesized that the modified program of group CBT enriched by SST would produce greater treatment effects than the standard group CBT protocol.

Apart from the case study, the samples of the studies varied between 13 and 65 adult patients, of both sexes, with ages varying between 18 and 57, with primary or secondary diagnosis of SAD, according to DSM-IV criteria, with or without comorbidities. The participants were recruited, in its majority, in the clinical environment. In the study by Stravynski *et al.* (2000), the sample came chiefly from the community, following descriptions of the treatment program in different means of communication. In Herbert *et al.* (2005), the participants were recruited exclusively in the community by means of announcements, newspapers articles, posters in bookshops, and cafés. Only the study by Bishop (2003) did not report the origin of the samples. Four other studies (Van Dam-Baggen & Kraaimaat, 2000a; Van Dam-Baggen & Kraaimaat, 2000b; Cottraux *et al.*, 2000; Stravynski *et al.*, 2000) shared as exclusion criteria the presence of indications of psychotic disorder and addiction to substances.

Still related to the criteria for including participants, a diversity of conditions, which are highlighted in the studies, was observed. Van Dam-Baggen and Kraaimaat (2000a) used a matching procedure of participants, who came from two psychiatric

outpatient environments, for the two treatment conditions, in order to certify that both samples were relatively equivalent. In another study (Van Dam-Baggen & Kraaimaat, 2000b) including inpatients from a psychiatric clinic, the designation for the composition of the “reticent” and “non-reticent” samples had as a bases the scores in the *Frequency Scale of the Inventory of Interpersonal Situations* (IIS). In the studies by Cottraux *et al.* (2000), Stravynski *et al.* (2000) and Herbert *et al.* (2005), the participants were randomly allocated into the treatment groups. In the clinical case presented by Espada *et al.* (2002), the participant was a patient who spontaneously sought treatment. Bishop (2003) did not mention the selecting procedure of participants for the study. The participants identified in four other studies (Cottraux *et al.*, 2000; Stravynski *et al.*, 2000; Espada *et al.*, 2002; Herbert *et al.*, 2005) had in common the fact that they spontaneously sought treatment, and only in three studies the allocation into groups was random.

The studies used a different set of instruments and measures. The only instruments that repeated throughout the studies were *Symptom Checklist-90* (SCL-90) (Van Dam-Baggen & Kraaimaat, 2000a; 2000b; Stravynski *et al.*, 2000), *Fear Questionnaire* (FQ) (Cottraux *et al.*, 2000; Stravynski *et al.*, 2000; Herbert *et al.*, 2005), and *Beck Depression Inventory* (BDI) (Cottraux *et al.*, 2000; Espada *et al.*, 2002; Herbert *et al.*, 2005).

Table 3 presents a detailed characterization of the outlines adopted in the studies about the effectiveness of SST.

As one can observe, SST was used in groups in five studies. In the multi-component intervention by Espada *et al.* (2002), and in the online system by Bishop (2003), SST was used individually. The predominance of the use of SST in groups, as opposed to individually, can be justified by the following advantages: (a) it saves time for the therapist; (b) it offers more diversity of behavior rehearsal with a larger number of individuals; (c) it allows for ready generalization of the gains and more quantity of effective feedback for the trained performances; (d) it provides experience with a wider range of problem-situations and more support to solve them; (e) it provides more multiple models, besides the ones offered by the therapist; and (f) it favors the learning of discrimination of the desired and undesired possible consequences for the emission of the new behaviors that are learnt.

The SST groups that are described were formed by four to ten participants, and in one of them, the number of participants that composed the treatment groups was not mentioned. As to the duration of sessions, they varied between 90 and 120 minutes. The total number of sessions varied between six and twenty. In the case study, the SST module included in the multi-component treatment took four sessions of fifty minutes.

The clinical interventions in Van Dam-Baggen and Kraaimaat (2000a; 2000b), Cottraux *et al.* (2000) and Stravynski *et al.* (2000) were carried out by experienced therapists in SST or CBT, counting on a co-therapist in two of these interventions. In the study by Herbert *et al.* (2005), the therapists received weekly individual and group supervision for

Table 3. Characterization of the outlines adopted in the studies of effectiveness of the SST

Outlines	Studies					
	1	2	3	4	5	6
Application						
group	+	+	+	+	+	-
individual	-	-	-	-	-	+
Duration of sessions	90 min	nr	120 min	120 min	120 min	50 min
NO of participants	5 to 8	8 to 10	4 to 6	nr	4 to 6	1
Therapist						
one	+	+	-	+	+	+
pair	-	-	+	-	-	-
co-therapist	+	-	-	+	-	-
Techniques						
behavioral rehearsal	+	+	+	+	+	+
modeling	+	+	+	+	+	+
homework assignment	+	+	+	+	+	+
feedback	-	-	+	+	+	+
reinforcement	-	-	+	+	+	+
self-monitoring	+	+	-	+	-	+
bibliotherapy	+	+	+	-	-	-
successive approximations	+	+	-	-	+	-
instructions	-	-	-	+	+	+
educational phase	-	-	-	-	+	+
functional analysis	-	-	-	+	-	+
imitative learning	-	-	-	+	-	+
problem solving strategies	-	+	-	-	-	-
NO of sessions	20	20	6	14	12	4
Follow-up	3 m	-	6 and 12 m	6 and 12 m	3 m	12 m

1: van Dam-Baggen and Kraaimaat (2000a); 2: van Dam-Baggen and Kraaimaat (2000b); 3: Cottraux *et al.* (2000); 4: Stravynski *et al.* (2000); 5: Herbert *et al.* (2005); 6: Espada *et al.* (2002).

m: months; (+): present in the study; (-): absent in the study; nr: no reference

quality assurance, and to ensure adherence to the treatment manuals.

Regarding the studies by Van Dam-Baggen and Kraaimaat (2000a; 2000b) and Espada *et al.* (2002), the following social skills were included in the SST program for patients with generalized SAD: observing; listening; initiating, keeping, and finishing conversation; giving and receiving feedback; eye contact; volume of speech and intonation; making and refusing requests; receiving refusals; expressing opinions; making complaints; greeting; stating positive self-assertions; receiving and making criticism; expressing opinions; and standing up for one's rights. In the study by Espada *et al.* (2002), the educative phase involved teaching the patient about the performance styles of social passive, assertive, aggressive; about the social performance components; and the definition of socially skilled behavior. In Herbert *et al.* (2005), the educative component of SST included teaching the participants about the three expressive domains: (a)

speech content, (b) paralinguistic characteristics of speech (volume and tone of voice, timing), and (c) non-verbal behavior (proximity, eye contact, facial expressions), using them in different social contexts. It was observed that assertiveness was explicitly present in five clinical interventions of SST (Van Dam-Baggen & Kraaimaat, 2000a; 2000b; Cottraux *et al.*, 2000; Espada *et al.*, 2002; Herbert *et al.*, 2005).

The techniques typically used in SST programs and common to all the clinical intervention studies were: behavioral rehearsal, modeling, and homework assignment. The feedback, positive reinforcement and self monitoring techniques were present in four studies and the use of bibliotherapy, successive approximation and instructions was present in three studies. The procedure of functional analysis was used in only two of the studies.

Homework assignment has been one of the resources to check generalization of the effects of SST programs (Del Prette & Del Prette, 2005). In an-

alytical-conceptual terms, homework assignment functions as a tool to identify problems of stimulus control which may be hindering the effectiveness of the intervention over social functioning of individuals in their natural environment. Consequently, this effectiveness is found to be implicated in the social validity of the acquisitions predicted by the SST programs.

In all the interventions of SST used in clinical environment, evaluations were carried out before and after treatment. Follow-up evaluations were used in five of the studies, presenting a variability of follow-up plans amongst them.

A disadvantage of the fact that the majority of participants of the studies were recruited in the clinical environment is the possibility that this context represents the most serious cases of SAD, which, ultimately, would have implications as to generalization of the results. Corroborating this limitation, it was observed that the participants recruited in this context received, predominantly, the primary or secondary diagnosis of generalized SAD, with and without comorbidities.

Regarding the results that were obtained, the effectiveness of SST was proved by most of the studies, including the comparison with the other treatment modalities, such as CBT and supportive therapy, confirming the initial hypothesis. In the study by Stravynski *et al.* (2000), although SST had produced better results sooner, this tendency was leveled with behavioral therapy, and both treatments resulted in the same degree of improvement in the 12-month follow-up assessment. In the multi component intervention by Espada *et al.* (2002), the patient presented notable improvement in their social relationships, especially in conversations and social events. In the study by Bishop (2003), the participants with generalized SAD reported they perceived themselves more capable of understanding stories, but they considered that the online learning system did not make them feel any better, besides demonstrating a slightly negative attitude towards its functionality.

In methodological terms, the internal validity of SST could benefit greatly if it were contrasted with a convincing control condition (placebo), that is, a planned condition to resemble a therapy without being one. This supposition gains consistency when one considers that to spend a period in a waiting list is not likely to be the best control for the effects of treatment, in addition to the lack of a precise definition of what constitutes the best control condition for psychosocial interventions.

In six of the studies, the effectiveness of both SST and the other therapeutical modalities was proved by the results of self-report measures. Only the studies by Stravynski *et al.* (2000) and the one by Espada *et al.* (2002) used clinical interviews to evaluate the effectiveness of the treatments that were offered, besides the self-report measures. Herbert *et al.* (2005) also used behavioral evaluations before and after the interventions, constituted of two interaction tasks in role-play and an impromptu speech.

However, a restraint must be made about the attested "effectiveness" of these studies. When one analyses the methodologies that were used, only

the studies by Cottraux *et al.* (2000), Stravynski *et al.* (2000) and Herbert *et al.* (2005) can be characterized as effectiveness studies, since they adopted randomized intervention groups in the composition of their research outlines. The other studies (Van Dam-Baggen & Kraaimaat, 2000a; 2000b; Espada *et al.*, 2002) intended to test efficacy but they did not, and therefore are better characterized as efficiency studies, which do not require randomized allocation of the participants into the groups. Considering that the treatments of the study by Van Dam-Baggen and Kraaimaat (2000a) were carried out in two psychiatric environments in two different parts of The Netherlands, the randomized distribution was not possible, and thereby, a matching procedure of the participants into two treatment conditions was adopted.

Some considerations must be made regarding the results of the three studies carried out in the clinical contexts. In the study by Cottraux *et al.* (2000), any conclusion about the effectiveness of the phases of cognitive therapy, which occurred firstly, and SST would be inaccurate, although most of the changes were seen after the SST module. Supposedly, cognitive therapy paved the way for SST, since the patients were able to continue using cognitive techniques during the rest of the intervention. In this context, one can consider that a synergic action of the cognitive therapy and SST may have influenced the results. This can also have been present in the case study by Espada *et al.* (2002), since many cognitive and behavioral techniques preceded the SST module. Even though these are not cross-over clinical studies, an alternate use of the procedures to different samples (groups) would be desirable in order to guarantee the best methodological control of the proposed outlines, which would not avoid the problem of first intervention effects continuing throughout the period of the second phase. Additionally, in Herbert *et al.* (2005), the synergic action is very clear, since the SST component was fully integrated to the standard protocol of the group CBT, resulting in a joint therapeutical effect of these two treatment approaches.

Herbert *et al.* (2005) advocate that the explicit exclusion of any reference to the behavioral skills in the condition of only group CBT may have worked to weaken the treatment to some extent, when compared to the way it is normally given, in which the behavioral skills are sometimes approached even if it is in an informal and somewhat quick way. In contrast, the authors add that even in the modified protocol of group CBT, more time continued to be dedicated to cognitive restructuring than to SST, both in the stages of psychoeducation of the program and in each simulated exposure exercise, making it clear that there was not a strong or exclusive focus on SST in this condition.

In Stravynski *et al.* (2000), behavioral therapy was planned to adopt the format of SST, aiming at improving how the patient performed spontaneously the target behavior chosen, with the only restraint of not using certain techniques which are typical of training programs, such as modeling, behavioral rehearsal, and feedback. According to the description by the authors, there was convergence between behavioral therapy and SST in the following points: it was based on a strong interpersonal focus and

aimed at teaching the patient to both create new social circumstances and to engage in all the social situations in a different way. These proposals in common suggest that the behavioral therapy proposed by the authors showed to be an interface of SST, without the use of all the techniques that are used in typical training programs.

The functionality of the online learning system proposed by Bishop (2003) presented some limitations and implications as for its use in actual social situations. Firstly, the system would have to be adapted to fulfill the needs of individuals with generalized SAD, since they have no problems to interpret the literal meanings of what is said to them in social situations, but because they do interpret comments in a negative way. Secondly, the practical use of this system would demand an additional cognitive processing of information from the individuals in order to participate in an actual social situation, besides making them lose visual contact with an interlocutor, which would amplify their symptoms of social impairment.

Based on the results of the studies, the applicability of SST in clinical context was verified as one of the best treatments of choice for psychiatric patients with primary or secondary diagnosis of generalized SAD.

Taking into account the descriptions and the results of the studies, it is possible to conclude that the best outline in order to test the effectiveness of SST in patient diagnosed with SAD would be one that included this therapeutical modality constituted the sole treatment approach, being used in groups, with random allocation of participants in the groups of training and for comparison, and also using contextualized interaction tasks based on previous evaluation of the resources and deficits of skills presented by the participants in different contexts. It seems that the outlines of SST with best results were those used in the studies by Van Dam-Baggen and Kraaimaat (2000a; 2000b), although they can not be characterized strictly as efficacy study.

Analyzing the results that attest the "effectiveness" of SST amongst the studies, it is possible to conclude that the reach of this therapeutical modality has as a limiting factor the inferential character of the scales in the evaluation of the acquisition of social skills and other therapeutical gains by the patients, leaving open some questions of ecological validity.

■ Final Comments

Examining the 17 studies grouped into two classes of proposed analysis, the absence was verified of a standard instrument or measure to evaluate the social skills that would provide more validity and reliability to the data that are collected, taking into account the diversity of instruments that were used with this objective. In the collection of articles that were analyzed, the necessity was observed of recognition of an instrument systematically studied as a "Gold Standard" in order to evaluate the social skills and/or social competences of individuals, which would favor the comparison among the studies.

It is considered that the excess of interpersonal anxiety and the difficulties in the processing, in cognitive-affective terms, as interpretative biases, negative self and meta perceptions, and self-focused attention of individuals with SAD may be implicated in the performance or fluency deficits presented by them, inhibiting, thus, the display of socially competent performances in social interactions, in case they do not present acquisition deficit. Del Prette and Del Prette (2001) define socially competent performance as the one which expresses an appropriate reading of the social environment, which correctly decodes the expected performances, valued and effective to the individual in his or her relationships with others, contributing to the maximization of gains and minimization of losses for oneself and for the ones with whom they interact.

In the article by Thompson and Rapee (2002), it seems that the term "social skills training" is used as a synonym to "add social skill to the repertoire of a person". In this point, apparently, the authors do not consider that SST does not aim at solely adding new social skills to the behavioral repertoire of individuals that have deficits in this repertoire, but also to improve their social skill before specific demands of the interpersonal situations, as well as to promote the social competence before distinct audiences. Additionally, SST also comprehends the reduction of anxiety as an attainable objective, by means of appropriate and specific techniques for such, not only for individuals with SAD.

For those patients who already have relatively strong skills in their repertoire, for example, SST may facilitate the increase of their self-efficacy with respect to social situations, thus improving their skills to deal with anxiety and consequently decreasing social avoidance (Gaudiano & Herbert, 2003).

The data of the study by Christensen et al. (2003) evidenced that the negative metaperceptions of socially anxious individuals were mostly due to their own negative self-perceptions than to the negative perceptions of others, in consonance with the statement by Furmark (2000) that self-perception of individuals with social phobia generates negative impression of themselves, which, for them, reflects what others really notice and think about them. In agreement with this result, and with the arguments by Wells and Clark (1997), the results of the studies by Alden and Mellings (2004) showed that socially phobic individuals typically build a negative image of themselves from the perspective of an outer observer.

Future studies need to be carried out in order to verify more accurately the possible associations between social anxiety and academic performance, with better methodological control.

It was concluded that the prior characterization of the social skills repertoire of individuals in general is paramount, and especially of patients with SAD and individuals with high levels of social anxiety, in order to propose effective treatment programs that fulfill more directly and objectively their interpersonal demands.

The analysis of the reach of the results attesting the effectiveness of both SST and the other indicators

of social skills that were evaluated evidenced the necessity of new studies with clinical and non-clinical samples, with random allocation of participants, with the proposition of contextualized interaction tasks, supported by ecological validity which grants generalization of the results obtained about the association between social skills and SAD, evidencing thus the functionality and the process by which anxiety interferes in the social performance of individuals.

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