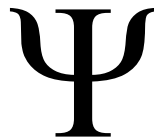




**DET PSYKOLOGISKE FAKULTET**



***Internet-Delivered Cognitive Behavioral Therapy for Social Anxiety  
Disorder: Predictors of Outcome***

**HOVEDOPPGAVE**

*profesjonsstudiet i psykologi*

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Høst 2013

Veiledere:  
Odd E. Havik  
Tine Nordgreen  
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## Forord

Denne oppgaven har artikkelformat i henhold til retningslinjer for publisering i Journal of Consulting and Clinical Psychology (retningslinjer i Appendix B). Kandidatene, Solveig H. Å. Berntsen og Anders Ø. Christensen, har bearbeidet data, foretatt statistiske analyser, og utformet teksten, med god hjelp og støtte fra veilederne, professor Odd E. Havik og førsteamanuensis Tine Nordgreen, under hele prosessen.

Dataene er hentet fra prosjektet «Kartlegging og behandling – angst hos barn og voksne. Voksendelen». Dette prosjektet har fått støtte fra Helse Vest RHF gjennom prosjekt nr. 911366 og nr. 911253.

Dokumentet består av fire deler:

1. Side I - IV: Forside, forord og norsk sammendrag (engelsk sammendrag inngår i manuskriptet)
2. Forside for Journal of Consulting and Clinical Psychology
3. Side 1 – 35: Manuskript i artikkelformat i henhold til retningslinjer i Journal of Consulting and Clinical Psychology.
4. Side a - g: Retningslinjer for artikkelformat for Journal of Consulting and Clinical Psychology.

Vi vil rette en stor takk til Odd og Tine for at vi fikk delta i deres spennende forskningsprosjekt, og for den kunnskapsrike undervisningen og de lærerike tilbakemeldingene de har gitt under veis i prosessen. Vi vil også takke psykologene som har samlet inn data. Sist men ikke minst vil vi takke deltagerne i studien, som har trosset sine komfortsoner og bidratt til videreutvikling av vitenskapelig kunnskap.

## Sammendrag

Studiens formål var utforskning av pasient-faktorer som kan predikere utfall av internettbasert kognitiv atferdsterapi (ICBT) for personer med sosial angst. Deltakernes ( $N = 37$ , kvinner 43 %) selvrapporterte nivå av sosial angst, depresjon, og interpersonlige problemer, samt klinikernes vurdering av symptomenes alvorlighetsgrad ble kartlagt før og etter behandling. Mulige prediktorer ble kartlagt ved utfylling av selvrapporтерings-skjema ved behandlingsstart, og omfattet sosiodemografi, sykdoms- og behandlingshistorie, hva en forventer vil hjelpe, komorbiditet, søvnvansker, nåværende funksjonsnivå, sosial støtte, livshendelser, og mestringstro/self-efficacy. Det ble funnet at høyere grad av sosial støtte predikerte økt symptomlette av sosial angst. I tillegg var et ønske om å lære nye ting om seg selv, og en mestringstro på at en kan utløse sosial støtte, prediktorer for bedre interpersonlig fungering. Dette indikerer at sosial støtte kan være en viktig prediktor, og at tiltak for å styrke denne støtten vil kunne øke behandlingseffekten av ICBT for sosial angst. Grunnet metodologiske begrensinger bør studien replikeres.

# **Internet-Delivered Cognitive Behavioral Therapy for Social Anxiety Disorder: Predictors of Outcome**

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## Abstract

### Objective

This study aimed at exploring patients' pre-treatment characteristics predicting the outcome of a guided Internet-based cognitive behavioral therapy (ICBT) program for social anxiety disorder (SAD).

### Method

The participants' ( $N=37$ , 37% female; Mean age = 25.62,  $SD = 5.83$ ) self-reported level of social anxiety, depression, and interpersonal problems, together with clinicians' ratings of symptom severity was obtained before and after treatment. Possible predictors were collected through pre-treatment surveys, and included socio-demographics, illness- and treatment history, expectations about what will help, comorbidity, sleeping problems, present level of functioning, social support, life events, and self-efficacy.

### Results

Higher levels of social support predicted better treatment outcome for the primary outcome measures of social anxiety disorder. We also found that preferring to learn new things about one-self, and self-efficacy related to social support to do the self-help tasks in the modules, predicted better interpersonal functioning after treatment. None of the predictors included in the present analyses could predict change in Beck Depression Inventory (BDI) scores.

### Conclusions

Social support appears to play a central role in predicting a positive outcome of ICBT for SAD.

*Keywords:* internet-delivered cognitive behavioral therapy; social anxiety disorder, predictors of outcome

### **Introduction**

Social anxiety disorder (SAD) is characterized by fear of humiliation in social performance and/or interactional situations (DSM-IV) (American Psychiatric Association, 2000), and is the most common anxiety disorder (Kessler et al., 2005; Stein & Stein, 2008). The estimated life-time prevalence of SAD is 7-13 % in Western countries (Furmark, 2002), but a substantial number of people with SAD never enter therapy, largely because most individuals with anxiety symptoms and disorders never seek treatment (Bijl, Ravelli, & van Zessen, 1998; Roness, Mykletun, & Dahl, 2005). Furthermore, those who seek treatment often have to wait several months before they receive treatment (Lovell & Richards, 2000) and often receive treatment that is not evidence-based (Andrews, Issakidis, Sanderson, Corry, & Lapsley, 2004). Hence, SAD is often left untreated, with accompanying chronically disabling consequences (Chartier, Hazen, & Stein, 1998; Reich, 2000; Roness et al., 2005), including social isolation, dysfunction in daily activities, dysfunctional interpersonal relationships, educational and occupational difficulties, and poor quality of well-being (Olfson et al., 2000; Safren, Heimberg, Brown, & Holle, 1996; Stein & Kean, 2000)

Cognitive behavioral therapy (CBT) (Clark, 2011; Clark & Wells, 1995; Heimberg, 2002) is the most firmly evidence-based treatment for SAD and the effect of CBT has been established in a large number of randomized controlled trials (RCT) and meta-analyses (Heimberg, 2002; Norton & Price, 2007). However, the availability of face-to-face CBT is still limited, often due to a low number of trained therapists unequally distributed across a country (Shapiro, Cavanagh, & Lomas, 2003). This underlines the need for improved access to effective treatment options.

Internet-based cognitive behavioral therapy (ICBT) fits the requirement for an effective and more readily accessible treatment of anxiety disorders (Spek et al., 2007). In the present study, guided ICBT is defined as a psychological therapy that comprises delivering text-based modules via web pages, guided by weekly scheduled telephone calls from an identified therapist who answers questions and provides feedback to the participant. Numerous RCTs have demonstrated that ICBT for SAD is effective (Andersson et al., 2006; Carlbring et al., 2007; Cuijpers et al., 2009; Haug, Nordgreen, Öst, & Havik, 2012; Spek et al., 2007). There are advantages of delivering



treatment over the Internet, such as anonymity, access to and obtainment of treatment at any time and place, self-paced progression and limited use of therapist involvement (Spek et al., 2007). Guided ICBT has been suggested to be the most effective form of ICBT treatment, and guidance contributes to lower dropout rates (Andersson, 2009; Titov, 2007). Several other forms of ICBT exist, including ICBT delivered without therapist contact, or with therapist support via e-mail (Andersson, 2009). However, the effectiveness of ICBT for SAD can potentially be increased, and the dropout rates can be decreased, by identifying and understanding factors that predict the outcome of ICBT for SAD. To date, this has received little attention, and so research aiming to identify predictors of treatment outcome is needed.

Recent research literature identifies only a few consistent predictors of outcome of CBT for SAD (Eskildsen, Hougaard, & Rosenberg, 2010; Heimberg, 2002). Pre-treatment severity of symptoms has been found to predict higher levels of symptoms at the end of therapy, but not degree of improvement (Eskildsen et al., 2010). In addition, lower pre-treatment SAD symptom levels have been found to predict a diagnosis-free status after treatment, whereas higher symptom levels were associated with a reliable change in symptoms (Nordgreen et al., 2012). Adhering to homework, lower frequencies of negative thoughts during social interactions, and having higher expectations about treatment outcome have been found to predict better treatment outcome (Heimberg, 2002). For ICBT, predictors appear to be few and inconsistent (Andersson, 2009), but the presence of a therapist guiding the therapy process seems to predict a better outcome (Spek et al., 2007).

The main research question in the present study was to identify factors related to treatment outcome following an ICBT program for SAD. While the treatment outcome has been reported previously (Sinding, 2013), this study aimed at exploring a selection of potential predictors. The selection of predictors in the present study was based on a review of relevant literature, and each predictor is described below.

A number of studies have investigated the relationship between socio-demographic characteristics and treatment outcome for SAD (Furmark et al., 1999; Patel, Knapp, Henderson, & Baldwin, 2002; Turk et al., 1998), and we included gender, age, and marital/relationship status as potential predictors of outcome. However, given that decades of research on the relationship between demographic factors and treatment outcome for anxiety

disorders have shown generally inconsistent, or at best, weak, relationships (Bohart & Greaves Wade, 2013), we had no clear expectations about how the selected predictors would be related to outcome.

Patients' treatment preferences and expectations have been found to be related to treatment outcome (Boettcher, Renneberg, & Berger, 2013; Lin et al., 2005), and seem to be related to the patients' beliefs about the possibility of alleviating the disorder (Lauber, Nordt, Falcato, & Rossler, 2001), previous experience with medication (Churchill et al., 2000) and previous experience with, knowledge about, and attitudes towards psychotherapy (Churchill et al., 2000; Dwight-Johnson, Sherbourne, Liao, & Wells, 2000; MacNair-Semands, 2002; Priest, Vize, Roberts, Roberts, & Tylee, 1996). A study by Coles and Coleman (2010) found that nearly 66 % of the respondents attributed social anxiety to either "environmental factors" or "personal weakness". Several other studies have found that people blame mental illness on recent stressors, and these findings have been linked to the use of alternative and unsupported treatments such as "naturopaths" and "homeopathy" (Lauber et al., 2001; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Matschinger & Angermeyer, 1996; Priest et al., 1996). In contrast, people using medication and psychotherapy are more likely to attribute mental illness to biological and characterological causes (Khalsa, McCarthy, Sharpless, Barrett, & Barber, 2011), and hold a positive view of CBT and medication (Deacon & Abramowitz, 2005). Furthermore, studies have found that longer duration of symptoms predicts less successful treatment outcomes (Dow et al., 2007; Nordgreen et al., 2010; Sharp & Power, 1999). We hypothesize that individuals' illness- and help-seeking history reflects their beliefs about SAD, and expectations about treatment effect. More specifically, we expect that longer duration of illness, not having sought help previously, or having sought alternative, non-empirically supported treatment outside of the health service might reflect a belief that regular health services will not be effective, and so predicts less successful treatment outcome. On the other hand, we expect that current or previous experience with medication and psychotherapy to be associated with a positive view of CBT, and so predict a better outcome of treatment.

SAD is a highly comorbid condition (Beutel, Bleichner, von Heymann, Tritt, & Hardt, 2011), and a common assumption seen in the clinical literature is that comorbid conditions have important treatment implications and are related to worse outcome (Joormann, Kosfelder, & Schulte, 2005). However, the findings

regarding the effect of comorbidity on treatments for SAD have been inconclusive (Rapee, 2003), and examining the potential predictive role of comorbidity seems warranted.

Sleeping problems are common among individuals with SAD (Buckner, Bernert, Cromer, Joiner, & Schmidt, 2008; Stein, Kroft, & Walker, 1993). Sleeping problems can be seen as an indicator of worry and less capacity to cope with the anxiety symptoms. This may affect the outcome of treatment, and the question arises whether individuals with sleeping problems will experience less successful treatment outcomes.

Individuals with SAD are more likely to currently be unemployed, and have lower household incomes as a group (Patel et al., 2002). Furthermore, SAD symptoms significantly interfere with occupational functioning (Turner, Beidel, Dancu, & Keys, 1986). In sum, there appears to be a greater likelihood that individuals with SAD will have impaired work lives, yet the link between work activities and the outcome of SAD has received little attention to date. We suggest that being part-time employed, being a full time or part-time student, and/or not receiving welfare benefits reflects the level of an individual's current social functioning. We also assume that a lower level of current social functioning would predict a less successful outcome of treatment in our study.

Social support has been linked to adherence to treatment, and seems likely to affect outcome of treatment through this pathway (DiMatteo, 2004). As expected, studies have found that SAD is commonly associated with low levels of social support (Furmark et al., 1999; Ruscio et al., 2008), and impaired relationships with family, friends, and romantic partners (Turner et al., 1986; Whisman, Sheldon, & Goering, 2000). Given the low therapist support in ICBT, we argue that higher level of social support should be related to better outcome of ICBT for SAD.

Negative life events might be an important underpinning in the development and maintenance of SAD (Rapee & Spence, 2004), and also influence the course of the disorder over time (Chartier et al., 1998). A higher rate of a wide range of negative life events have been found among people with SAD, including separation from parents, marital problems, violence and sexual abuse in their family of origin (Bandelow et al., 2004). Other of findings include a lack of close relationships with adults, higher rates of mental disorders, physical illness or drug and alcohol addiction among close relatives, more frequent moving, failing a grade and being bullied (Chartier,

Walker, & Stein, 2001; Marteinsdottir, Svensson, Svedberg, Anderberg, & von Knorring, 2007). Among patients getting psychotherapy in public mental health services, having experienced a higher total number of life events (positive and negative combined) during the last year before therapy has been associated with a negative outcome of therapy in general, possibly reflecting a more chaotic life situation (Bergslien & Ottesen, 2006). Life events might thus contribute to less successful treatment and an examination of the potential predictive role of life events in the treatment of SAD seems warranted.

The concept of self-efficacy (Bandura, 1977) appears to be a consistent predictor of successful health behavior change (Holloway & Watson, 2002). More specifically, increasing self-efficacy has consistently been proved to positively affect initiation and maintenance of lifestyle change (Holloway & Watson, 2002). By enhancing the individuals' belief that they can perform actions necessary to successfully cope with their problem, positive treatment outcomes can presumably be achieved. Consequently, we hypothesize that a higher level of self-efficacy can predict a better outcome of treatment in our study.

#### *Research question*

The main aim of this study is to explore patient's pre-treatment characteristics that may predict outcome of ICBT for SAD in line with the predictors reviewed above.

### **Method**

#### **Recruitment and Inclusion**

The participants were recruited from the Student Psychological Health Service (SPHS) at the University of Bergen, through the student newspaper ("Studvest"), the student radio ("Studentradioen i Bergen"), the SPHS's web page, and from ongoing therapies at the SPHS. Initially, those who confirmed at least two out of the three screening questions from the SAD-section in SCID I (First, Spitzer, Gibbon, & Williams, 2002), were invited and given more information about the study. Those who fulfilled the following criteria were included: a) aged between 18 and 65 years, b) met the Mini-International Neuropsychiatric Interview (M.I.N.I.) (Leiknes & Malt, 2009; Sheehan et al., 1997) criteria for SAD for a minimum duration of one month, c) SAD being the participant's primary diagnosis (comorbidity, both symptom diagnoses and personality disorders, was accepted), d) a score of 3

or higher on Clinician's Severity Rating (CSR) (Brown, DiNardo, & Barlow, 1994), e) agree to be randomized, f) have access to the Internet, g) and sign a written informed consent. The exclusion criteria were a) being in need of other treatment, b) substance abuse, c) unstable use of medicines for the last three months, d) regular use of benzodiazepines, f) major depressive disorder, g) suicidal ideation, h) psychosis, and i) major reading disability. Previous psychological treatment, including CBT and exposure, was not an exclusion criterion.

### **Procedure**

After the pre-treatment assessment, the participants ( $N = 37$ ) were randomized to either face-to-face psychoeducation before treatment, or no face-to-face psychoeducation before treatment. Participants filled out questionnaires at T1: before treatment, T2: after treatment, and T3: 6 months after treatment. In this study, only data from T1 and T2 will be analyzed. There was a dropout of 14 participants between T1 to T2, giving a study sample of 23.

**The guided self-help program.** The self-help program, developed by Professor Anderson and colleagues at the Linköping University, Sweden (Andersson et al., 2006; Carlbring, Furmark, Steczkó, Ekselius, & Andersson, 2006; Furmark et al., 2009), was built on Clark and Wells' (1995) CBT-treatment program for SAD. The modules were translated and adjusted to use in Norway by professional translators in collaboration with psychologists.

The self-help program comprised nine modules ranging from 9 to 13 pages. One new module was delivered each week. The participants accessed the modules with a unique username and password on the homepage on the project server. Every module ended with a multiple choice test that summed up the main points in the module. If the participants exceeded a certain number of wrong answers, they were asked to complete the test again, but they did not need to have any right answers to receive the next module.

**Therapist's guidance.** The participants had one prescheduled telephone call with their therapist each week, lasting for about ten minutes. There were guidelines for these weekly calls, emphasizing that the main themes during the calls were the participants' experiences when working with the latest received module, and encouragement to continue treatment. The participants could also bring up any other problems. If the participant

expressed severe additional problems, such as depression, crisis, or loss, that overshadowed the anxiety symptoms, the therapist would consider offering a face-to-face appointment. This option was not used in the present study.

**Therapist training.** All the therapists (N=6) were certified specialists in clinical psychology working in SPHS. The therapists attended a one-day workshop where they received information about the ICBT-program, were trained in how to use M.I.N.I, conducting psychoeducation, and carrying out the weekly telephone calls.

### **Outcome Measures**

**Primary outcome measures.** The severity of SAD symptoms and their consequences on the patient's life was scored using the Clinician's Severity Rating (CSR) from the Anxiety Disorder Interview Schedule (ADIS) (Brown et al., 1994), ranging from 0 (no symptoms) to 8 (very severe, all aspects of life affected). Participants with CSR-scores of 3 and above were included in this study.

The Social Phobia Scale (SPS) (Mattick & Clarke, 1998) is a questionnaire screening for the fear of being scrutinized by others during daily activities, such as eating, taking the bus, or standing in a line. The participants rated 20 items on a four-point scale from 0 (not at all true for me), to 4 (absolutely true for me). The internal consistency as measured with Cronbach's alpha was high: T1 = .91 and T2 = .95.

The Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998) is a questionnaire of anxiety related to interaction with others, like starting and maintaining conversations. The report consisted of 20 items, which were rated from 0 (not at all true for me) to 4 (absolutely true for me). The internal consistency as measured with Cronbach's alpha was high: T1 = .84 and T2 = .89.

A social anxiety disorder composite score of SPS and SIAS was generated by converting the scores from each questionnaire into z-scores ( $M = 0$ ,  $SD = 1$ ) and then combining them in to a sum-score called SAD-C (social anxiety disorder - composite), according to the recommendations from Rosenthal and Rosnow (1991), and Clark et al. (1994).

**Secondary outcome measures.** Inventory of Interpersonal Problems (IIP-64) (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988; Monsen, Hagtvet, Havik, & Eilertsen, 2006) is a self-report measure comprising 64 items measuring distress and problems arising from interpersonal sources. The items are rated from 0 (not at all

true) to 4 (very true). In this study the mean total score of interpersonal problems was used as an indicator of general interpersonal distress. Cronbach's alpha was high: T1 = .90 and T2 = .95.

Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report scale that measured depressive symptoms during the last week. Each item is rated from 0 (no depressive symptoms) to 4 (severe depressive symptoms). A score below 10 is considered to be an absence of depressive symptoms. Cronbach's alpha was high: T1 = .86 and T2 = .94.

### **Predictors: Measures and Coding**

Socio-demographic factors comprised: age ( $M = 25.62$ ,  $SD = 5.83$ , range = 19.00 – 39.00), gender (male = 0, female = 1, 43.2 %<sup>1</sup>), romantic relationship status/marital status (no romantic relationship = 0, in a romantic relationship/married = 1, 54.1 %).

Illness- and treatment history concerning SAD comprised: duration of symptoms ( $M = 10.46$  years,  $SD = 9.45$ , range = 0.42 - 40.0 %), previous medication (no = 0, yes = 1, 10.8 %), number of previous medicines ( $M = 0.21$ ,  $SD = 0.65$ , range = 0 – 2.78) sick leave (no = 0, yes = 1, 13.5 %), previous counseling/psychotherapy (no = 0, yes = 1, 29.7 %), not sought help before (no = 0, yes = 1, 54.10 %), and sought help outside of the health system, e.g. naturopathy/homeopathy, healer/wise woman, or other (no = 0, yes = 1, 8.1 %).

Comorbidity was assessed with Mini International Neuropsychiatric Interview (M.I.N.I) (Sheehan et al., 1997), a diagnostic interview based on the diagnostic criteria in DSM-IV (American Psychiatric Association, 2000) and ICD-10 (World Health Organization, 2004), and translated into Norwegian by Leiknes and Malt (2009). At the baseline assessment, patients were screened for panic disorder, agoraphobia, obsessive compulsive disorder, post-traumatic stress disorder, and generalized anxiety, represented by number of comorbid conditions ( $M = 0.78$ ,  $SD = 1.00$ , range = 0 - 3).

Bergen Insomnia Scale (BIS) (Pallesen et al., 2008) is a self-rated measure of day-time and night-time symptoms of sleeping problems and tiredness, comprising 6 items, rated from 0 (no days per week) to 7 (every day

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<sup>1</sup> Percentage coded as 1

per week). Cronbach's alpha was .82 (T1) and .90 (T2). The sum score BIS were used as an indication of sleeping problems ( $M = 14.88$ ,  $SD = 9.58$ , range = 0 – 42).

Current level of social functioning concerned paid work (no = 0, yes = 1, 56.8 %), and functioning as a student: receiving sickness allowance, (no = 0, yes = 1, 11.1 %), part time student, (no = 0, yes = 1, 11.1 %), and full time student, (no = 0, yes = 1, 77.8 %). Paid work was not correlated with receiving sickness allowance ( $r(34) = -.22$ ,  $p > .05$ ), being part time student ( $r(34) = -.04$ ,  $p > .05$ ) or full time student ( $r(34) = .19$ ,  $p > .05$ ), and were therefore suitable as an additional measure of social functioning.

A shortened version (15 items) of The Interpersonal Social Evaluation List (ISEL-S) (S. Cohen & Hoberman, 1983) was used to measure the perceived availability of potential social support. The items were rated on a 4-point scale ranging from 1 (definitely false) to 4 (definitely true). Mean, standard deviation, and range for ISEL-S at baseline were  $M = 43.85$ ,  $SD = 8.25$ , range = 26 – 60. The Cronbach's alpha was high: T1 = .85. The ISEL-S comprises five subscales each with 3 items: available help (alpha .68) ( $M = 9.26$ ,  $SD = 2.15$ , range = 3 – 12), self-esteem (alpha .52) ( $M = 9.26$ ,  $SD = 1.69$ , range = 6 – 12), appraisal (alpha .63) ( $M = 8.59$ ,  $SD = 2.38$ , range = 3 – 12), closeness (alpha .74) ( $M = 8.71$ ,  $SD = 2.41$ , range = 3 – 12), and group belonging (alpha .64) ( $M = 8.03$ ,  $SD = 2.43$ , range = 3 – 12).

A social support index (SSI) was made for this study, comprising three questions concerning a) number of close friends, scored as 1 (no friends, 0.0 %), 2 (1-2 friends, 27.8 %), 3 (3-5 friends, 50.0 %), and 4 (6 or more friends, 22.0 %) ( $M = 2.94$ ,  $SD = 0.71$ , range = 2.00 – 4.00), b) perceived interest from others, scored as 1 (no interest, 2.8 %), 2 (little interest, 5.6 %), 3 (not sure, 33.3 %), 4 (some interest, 44.4 %), and 5 (great interest, 13.9 %) ( $M = 3.61$ ,  $SD = 0.90$ , range = 1 – 5), and c) access to practical help, scored as 1 (very difficult to get practical help, 11.1 %), 2 (difficult to get practical help, 13.9 %), 3 (possible to get practical help, 55.6 %), 4 (easy to get practical help, 16.7 %) and (very easy to get practical help, 2.8 %) ( $M = 2.86$ ,  $SD = 0.93$ , range = 1 - 5). The Cronbach's alpha for the SSI was low: T1 = .58. Kline (2000) recommends a Cronbach's alpha of .70. Cortina (1993) however, argues that it is possible to have a scale with correlated items, and still get a low alpha because of



a low number of items. Despite a low alpha, we chose to use the sum of SSI because it covers important aspects of social support ( $M = 9.42$ ,  $SD = 1.89$ , range = 4.00 – 13.00).

Life-events (Havik et al., 1995) screens for 35 specific life-events ( $M = 3.59$ ,  $SD = 2.41$ , range = 0.00 – 9.00), and asks for the participant's subjective impact-ratings of each event. The subjective impact of an event was rated from -3 (very negative) to 3 (very positive). We made a sum-score for the total impact of life-events by merging the impact of negative (inverted to positive scores) and positive events, and dividing it by the total number of events ( $M = 1.78$ ,  $SD = 0.93$ , range = 0 – 3).

At T1, the patients were asked what they expected, out of six alternatives, to be of help for them: understanding childhood (do not expect it to help = 0, expect it to help = 1, 21.6 %), receive medication that can take away ones suffering (do not expect it to help = 0, expect it to help = 1, 24.3 %), receive counseling and guidance about what one can do to get better (do not expect it to help = 0, expect it to help = 1, 37.8 %), learn new ways to do things so that one can master ones problems better (do not expect it to help = 0, expect it to help = 1, 48.6 %), learn new things about oneself (do not expect it to help = 0, expect it to help = 1, 51.4 %), and understanding why things that happen in one's life now causes problems for oneself (do not expect it to help = 0, expect it to help = 1, 56.8 %).

The Self-Efficacy Scale (SE scale), modulated from Bergen Genetic Counseling Self-Efficacy Scale (BGCSES) (Bjorvatn, Eide, Hanestad, & Havik, 2008), is constructed in accordance with Bandura's guidelines for SE scales (Bjorvatn et al., 2008), and measures the patient's belief that he or she can perform the specific actions required to accomplish the self-help-modules. The scale comprised 15 items, rated from 1 (can absolutely not manage), to 10 (can absolutely manage). Cronbach's alpha was T1 = .91. The subscales of the SE scale were identified using a principal factor analysis with oblimin rotation, resulting in four sub-scales: SE attitude, SE support, SE motivation, and a fourth subscale called SE rest. All the self-efficacy sub-scales were correlated, except from attitude and support ( $r(34) = .32$ ,  $p > .05$ ). Despite this, the subscales were kept separate in order to investigate the contribution of each individual scale. In addition, a sum-variable, "Total Self-Efficacy", was used.

### **Statistical Analyses**

The data were analyzed using SPSS, Version 20.0.

Outcome measures were converted into z-scores for T1 (pre-treatment) and T2 (post-treatment), and the z-scores were used to calculate residual gain scores. The residual gain scores (RGS) are the sum of each individual's deviation from expected change, when controlling for variation at T1 (Chambless, Tran, & Glass, 1997). RGS was computed according to the formula  $RGS = ZT2 - (ZT1 * r)$ . The  $r$  in the formula is the correlation between T1 and T2 for a given outcome measure: CSR ( $r(17) = .48, p < .05$ ), SAD-C ( $r(23) = .57, p < .01$ ), IIP ( $r(23) = .38, p > .05$ ), BDI ( $r(23) = .85, p < .01$ ).

Before conducting the multiple regression analyses, predictors were organized into categories: Category I: socio-demographic factors, Category II: illness- and help-seeking history concerning SAD, Category III: comorbidity, Category IV: current level of social functioning, Category V: social support, Category VI: life events, Category VII: what one expects to help, and Category VIII: self-efficacy. Within each category, bivariate associations between predictors were investigated with Pearson correlation, and predictors that were inter-correlated more than 0.40 were merged. In the case of the ISEL-S-, SSI-, and the self-efficacy scales, we included the subscales, in addition to the total sum of each scale. This was because we also were interested in investigating the predictive value of each of the subscales.

The selection of predictors to be included in multivariate regression analyses was based on the predictor's bivariate correlation with the RGS for outcome measures. Predictors correlating at the level of  $p < .05$  were included. Among the social support scales, there were, however, many scales that correlated with the RGS at a  $p < .05$  level, and we therefore chose to only let SSI sum represent the social support scales in the multivariate regression analyses, because this scale was correlated with three out of the four outcome measures, and because it had high correlations with the RGS for outcome measures.

A stepwise multiple regression analysis was conducted in order to identify predictors having an independent contribution to the explained variance in the outcome variables. The predictors were controlled to see if the assumptions of multiple regressions were satisfied: outliers, linearity between predictors and outcome measure, multicollinearity, and normality, homoscedasticity and linearity of the residuals. Outliers, defined as -/+

3.30 SD from the mean (Tabachnick & Fidell, 2012), were identified, and changed into a score two SD from the mean. The outliers were one in the age-variable (48), and one in number of medications (7), and they were changed into 38.76 and 2.78 respectively. There was no linear relationship between the predictors and the outcome measures: SAD-C, IIP, and BDI. There was, however, a tendency toward linearity among the predictors and CSR, but not perfect linearity. A VIF-score less than 10 (1.01), and tolerance-score greater than .10 (.99), indicates no multicollinearity among the predictors in the model (Pallant, 2007). The residuals from the model of SAD-C, CSR and IIP showed a normal distribution, indicating that the residuals for the outcome measures are fairly constant at each level of the predictors (homoscedasticity) (Field, 2005; Yockey, 2007). The residuals also showed a linear relationship with the predicted value of the outcome measures, indicating a good model fit. This means that the assumptions of linearity, normality and homoscedasticity among the residual scores are met, strengthening the validity of the models. It is however important to be aware of the limitations of this analysis.

### **Ethics**

In order to participate in the study, each subject was required to give a written informed consent. The study was approved by the Western Norwegian Regional Committee for Medical and Health Ethics.

### **Results**

#### **Outcome**

In the outcome study (Sinding, 2013), change was measured with a general linear model with repeated measures (at T1 and T2). The effect size, calculated with Cohen's  $d$ , were classified as small (.20), moderate (.50) or large (.80) (Cohen, 1988). A pre- to post treatment change of clinically significant reduction in symptoms of SAD, and a statistical significant reduction of interpersonal problems and depression was found ( $p < .05$ , effect sizes within ranging from  $d = .44$  to 1.54). For the specific outcome measures the effect sizes were minimal to large: CSR ( $d = 1.54$ ), BID ( $d = .44$ ), IIP ( $d = .73$ ), SIAS ( $d = .79$ ), SPS ( $d = .99$ ). There were no main effect of psychoeducation before treatment or no psychoeducation before treatment, and there were no interaction effects of time.

In addition, the individuals' change was measured in two ways. One measure for the individuals change was reliable change index (RCI) (Lambert, Christensen, & DeJulio, 1983), indicating the least difference between pre- and post-treatment to be considered reliable, when controlling for the standard error. The other measure of individuals' change was Clinical Significance (CS) (Jacobson & Truax, 1991), based on a midpoint between the mean in the study population and the mean in a random sample from a normal population (Carlbring, 2005). A change was considered clinically significant if a person crossed the midpoint from the SAD-population to the non-SAD-population during treatment (Lambert & Ogles, 2009). The percentages of participants changing from T1 to T2, measured with RCI and CS was 47.8 % for SPS, and 39.1% for SIAS. A CSR-score of three or more at T1 was necessary to be included in this study; at T2 41.2 % of the completers had a score of two or less, indicating an absence of symptoms of SAD. There was a reduction of 26.1 % from T1 (47.8 %) to T2 (73.9 %) of the participants having a BDI-score less than 10, indicating no depressive symptoms (Sinding, 2013).

### **Correlations between the Predictors and RGS for Outcome Measure**

The following predictors were significantly correlated with the RGS for the primary- and/or secondary outcome measures: sleeping problems, ISEL-S available help, ISEL-S closeness, SSI sum, SSI close friends, SSI interest from others, SSI easy access to practical help, the total impact of life-events, learn new things about oneself, and SE-social support. Having sleeping problems was related to a worse outcome on CSR. Higher scores on the ISEL-S "available help" sub-scale were related to a better outcome on the primary outcome measures both according to the clinician's severity rating (CSR) and self-reported SAD symptoms (SAD-C). The experience of a social network with more closeness (SSI closeness) was related to a better outcome on the secondary outcome measure of depression (BDI). Social function as measured by SSI (number of friends, interest from others, and access to practical help) and the sum-score of SSI was related to a better outcome on both the primary outcome measures (CSR and SAD-C), as well as the secondary outcome measure of general interpersonal problems (IIP). See Table 1 for specification. When reading Table 1, one should remember that due to the residual gain scores, a positive correlation indicates that the predictor is associated with less change on the outcome measures than expected, while a negative correlation indicates that the predictor is associated with more change on the outcome

measures than expected. Life events with a high, subjective impact of positive and negative events were related to better outcome as measured with CSR. Both wanting to learn new things about oneself, and having self-efficacy about one's capacity to get social support if needed, were related to a better outcome on general interpersonal problems (IIP). Among the predictors concerning social support, only the sum of Social Support Index (SSI sum) was included in the regression equation (more under "Statistical Analyses"), while all the other predictors correlating with the RGS for the primary- and secondary- outcome measures were included into further regression analyses. See Table 1.

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Insert Table 1 about here  
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For an overview of predictors who had no significant relationship with primary and secondary outcomes, see Appendix A.

### **Correlation between the Predictors Included in the Multiple Regression Analyses**

A bivariate analysis of correlation was conducted to investigate collinearity among the predictors which were included in the multiple regression analyses. None of the predictors were intercorrelated at a level that might result in collinearity (Pallant, 2007). See Table 2.

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Insert Table 2 about here  
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### **Multiple Regression Analyses**

Multiple regression analyses were conducted to investigate the independent contribution of the five predictors: sleeping problems, SSI sum, the total impact of life-events, wanting to learn about oneself, and SE

social support, to explain the variation in primary outcome: CSR and SAD-C, and secondary outcome: IIP and BDI.

Among the five predictors included in the multiple regression analyses, only the SSI sum had an independent contribution to the explained variance in the outcome on CSR. The SSI sum was also the only significant predictor of SAD-C. Two predictors were included in the model with residual gain score of IIP as the dependent variable: wanting to learn about oneself, and SE social support. These two predictors explained 42.0 % of the variance in the residual gain scores for IIP. None of the five predictors included in these analyses could predict outcome for BDI. See Table 3.

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Insert Table 3 about here  
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### **Discussion**

The main finding in the present study was that a higher level of social support predicted a better treatment outcome for the primary outcome measures of social anxiety disorder. We also found that preferring to learn new things about oneself and self-efficacy related to available social support to do the self-help tasks in the modules, predicted better interpersonal functioning after treatment. Thus, factors related to social support were involved as predictors in three out of four outcome measures. None of the predictors included in the present analyses could predict change in BDI scores. Each predictor included in the multiple regression analyses, and its possible implications, is discussed separately below.

Social support was a significant predictor of treatment outcome for the primary outcome measures. Our findings suggest that the number of close friends, perceived interest from friends and perceived availability of practical help from friends matter for the outcome of ICBT for SAD. A possible explanation for our finding is that a higher level of social support is associated with greater adherence to treatment. This hypothesis has received consistent support in the literature (DiMatteo, 2004). The ways in which social support exerts its effect on

adherence is likely to be complex, but some potential pathways include buffering stress, controlling behavior, providing sanctions for non-adherence, and increasing confidence (DiMatteo, 2004).

Interpersonal problems are commonly associated with SAD (Alden & Taylor, 2004; Stangier, Esser, Leber, Risch, & Heidenreich, 2006). A treatment preference for learning new things about oneself was a significant predictor of improved interpersonal functioning. This suggests that an openness to, and preference for, learning more about oneself will improve relations with other people after treatment. This is consistent with research showing that expectations and beliefs about the efficacy of treatment are important for treatment outcome (Rodebaugh, Holaway, & Heimberg, 2004). In addition, the dysfunctional interpersonal behavior of socially anxious individuals is traditionally thought to stem from social skill deficits (Segrin & Flora, 2000). Thus, learning new social skills might be one of the links between treatment preferences and improved interpersonal functioning. However, it is not clear to us why the preference for learning new things about oneself was not a predictor for the primary outcomes.

A unique feature of our study is the inclusion of the variable self-efficacy of social support to do the self-help program, predicting improved interpersonal functioning. This variable concerns not only the presence of social support, but also a belief that one manages to ask for help from family, friends, or others when needed, particularly in relation to dreaded tasks and exercises in the ICBT program. Our data suggests that self-efficacy of social support has features that specifically predict improved interpersonal functioning. We are puzzled by why self-efficacy social support did not predict improvement on the primary outcome measures. A possible explanation could be that individuals with higher self-efficacy of social support believe that asking people they know for social support will be helpful and positive, and so are more motivated to improve these relations, while still retaining their basic fear of interactional situations with unknown people. This is supported by findings showing that expecting a positive response from people leads to behavior that tends to elicit favorable responses (Curtis & Miller, 1986). In other words, the self-efficacy of social support might constitute the starting point of a virtuous circle of positive exchanges leading to improved interpersonal functioning, an assumption supported by previous studies (Alden & Taylor, 2004).

None of the variables included in the present multiple regression analysis predicted change in BDI scores. As reported in Sinding (2013), the present ICBT program resulted in reduced scores on BDI. Our findings indicate that other variables than those included in the present study are related to this effect. ISEL-S closeness was associated with lower BDI-scores over time (Table 1), and so could prove to be a predictor of reduced BDI scores.

### **Clinical Implications**

This study shows that increasing social support before ICBT might affect outcome positively. However, to make use of these findings, future ICBT programs will have to overcome barriers to eliciting social support posed by the symptoms of SAD. In addition, the inherent minimal intervention features of the ICBT treatment format makes it less suited for involving supporting third parties in the therapy process. An alternate implication would be that ICBT for SAD seems to be better suited for individuals with a higher level of social support.

It also shows that a preference for learning new things about oneself, and self-efficacy related to eliciting social support predict improved interpersonal relations. If other studies support this, it might be possible to alter future ICBT programs to take advantage of these findings. Our study suggests that ICBT programs for SAD can benefit from addressing these issues, and doing so will likely increase the effectiveness of the treatment.

### **Limitations**

Given that this was an exploratory study, and little research to date has examined possible predictors of treatment effects for ICBT, it is necessary to replicate our results with larger sample sizes. Due to the small sample size, caution is required regarding generalizing the results of this study. Given the explorative nature of this study, we continued the analysis despite the fact that not all statistical criteria were met. Firstly, we included more predictors than recommended considering our small sample size (Pallant, 2007), and secondly, there was no linear relationship between the predictors and SAD, IIP, and BDI. A lack of linearity is serious, and can make distorted predictions. There was, however, a tendency toward more linearity among the predictors and CSR, but not perfect linearity.



The use of stepwise multiple regression is a controversial method (Pallant, 2007), and it has been criticized more than other forms of multiple regression (Aron & Aron, 1999; Cohen, 2001). The method is criticized for selecting predictors and the order of the predictors to be included in the analysis based on statistical criteria, rather than hypothesis (Pallant, 2007). A stepwise multiple regression analysis is however still considered appropriate for explorative studies (Aron & Aron, 1999; Cohen, 2001), and is therefore seen as suited for the present study. One should however acknowledge that the results of this study may be more unstable, and less generalizable due to the use of stepwise analysis of regression.

### **Further Research**

A replication of the present study will have to consider that increasing the sample size will allow integration of more predictor variables, and thereby aid the identification of additional predictors of outcome, e.g. including ISEL-S closeness as a possible predictor of a reduction in depressive symptoms. In addition, recruiting a more heterogeneous study sample could potentially reveal other predictors than the ones found in the present study, possibly including level of education. It would be useful to further investigate the reliability of the variable SSI sum. Furthermore, it would be interesting to look into which specific features of IIP change after the treatment, and thereby hopefully assist the understanding of how ICBT affects interpersonal functioning, and furthermore improve the understanding of interpersonal features of SAD.

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## Tables

Table 1.

*Predictors that are Correlated with the Residual Gain Score for Primary and/or Secondary Outcome Measures*

Predictors	Primary Outcome		Secondary Outcome	
	CSR	SAD-C	IIP	BDI
BIS	.56*	.36	.25	.12
ISEL-S Available Help	-.70*	-.48*	-.33	-.36
ISEL-S Closeness	-.18	-.10	-.13	-.54*
SSI sum	-.65**	-.56**	-.48*	-.25
SSI Close Friends	-.64**	-.29	-.29	.01
SSI Interest from Others	-.47	-.62**	-.42	-.26
SSI Easy Access to Practical Help	-.55*	-.43*	-.47*	-.32
The total impact of life-events	-.49*	-.15	-.20	-.01
Learn new things about oneself	-.04	-.41	-.55**	-.06
SE social support	.10	-.35	-.46*	-.06

\*\* $p < 0.01$  (2-tailed); \* $p < 0.05$  (2-tailed)

BIS: The sum of Bergen Insomnia Scale; ISEL-S: The Interpersonal Social Evaluation List, Short version; SSI: Social Support Index; SE-social support: Self-Efficacy social support.

Table 2.  
*Correlations Between Predictors Included in the Multiple Regression Analyses*

Predictors	Sleeping Problems	Social Support	Total Impact of Life Events	Learn About Oneself	Self-efficacy Social Support
Sleeping Problems	1				
SSI Sum	-.39*	1			
Total Impact of Life Events	.14	.36*	1		
Learn About Oneself	-.11	.22	.12	1	
Self-efficacy Social Support	.12	.38*	.20	.09	1

\*\* $: p < 0.01$  (2-tailed); \* $: p < 0.05$  (2-tailed)

Table 3  
Multiple Regression Analyses

CSR - Final Model		
Model Information	Beta	95 % CI
SSI sum	-.65	[.90, 4.80]
Adjusted R Square	.38	
F (df)	10.13 (14) **	
SAD-C - Final Model		
SSI Sum	-.56	[1.05, 7.41]
Adjusted R Squared	.27	
F (df)	8.10 (18) **	
IIP - Final Model		
Learn New Things About Oneself	-.52	[-1.62, -2.62]
SE Social Support	-.42	[-.24, -.01]
Adjusted R Square	.42	
F (df)	7.78 (17) **	

\*\* :  $p < 0.01$  (2-tailed); \* :  $p < 0.05$  (2-tailed).

CSR: Clinician’s Severity Rating; SAD-C: Social Anxiety Disorder - Composite; IIP: Inventory of Interpersonal Problems; Beta: Standardized Coefficients; 95 % CI: Confidence Interval of 95 %; F: Levene’s test of equality of variance.

### Appendix A

The following predictors did not have significant associations with the RGS for the primary and secondary outcome measures: age, gender, romantic relationship status/marital status, years of symptoms, previous medication, number of previous medications, sick leave, counseling/psychotherapy, not sought help before, sought help outside of the help system, number of comorbid conditions, functioning as a student, paid work, ISEL-S sum, ISEL-S self-esteem, ISEL-S appraisal, ISEL-S group belonging, and expecting the following focus in therapy to be helpful: understanding childhood, understanding why things that happen in ones' life cause problems for oneself now, receive medication that can take away ones suffering, receive counseling and guidance about what one can do to get better, and learn new ways to do things so that one can master ones problems. Number of life events, SE attitude, SE motivation, and SE rest were neither significantly associated with RGS for the primary and secondary outcome measures. None of the above predictors were therefore included into the further multiple regression analyses.



## Guidelines for Articles – Journal of Consulting and Clinical Psychology

Retrieved from: <http://www.apa.org/pubs/journals/ccp/index.aspx>

Prior to submission, please carefully read and follow the submission guidelines detailed below. Manuscripts that do not conform to the submission guidelines may be returned without review.

### Submission

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Prior to submission, please review the submission guidelines detailed below. Starting in 2011, the completion of a Manuscript Submission Checklist (PDF, 35KB) that signifies that authors have read this material and agree to adhere to the guidelines is now required. The checklist should follow the cover letter as part of the submission.

Please submit manuscripts electronically, either using Microsoft Word (.doc) or Rich Text Format (.rtf) via the Manuscript Submission Portal.

If you encounter difficulties with submission, please email Katie Weinel or call 202-216-7622.

General correspondence may be directed to the Editorial Office via email.

### Masked Review

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This journal uses a masked reviewing system for all submissions. The first page of the manuscript should omit the authors' names and affiliations but should include the title of the manuscript and the date it is submitted.

Footnotes containing information pertaining to the authors' identities or affiliations should not be included in the manuscript, but may be provided after a manuscript is accepted.

Make every effort to see that the manuscript itself contains no clues to the authors' identities.

Please ensure that the final version for production includes a byline and full author note for typesetting.

Keep a copy of the manuscript to guard against loss.

### Cover Letter

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The cover letter accompanying the manuscript submission must include all authors' names and affiliations to avoid potential conflicts of interest in the review process. Addresses and phone numbers, as well as electronic mail addresses and fax numbers, if available, should be provided for all authors for possible use by the editorial office and later by the production office.

### Length and Style of Manuscripts

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Full-length manuscripts should not exceed 35 pages total (including cover page, abstract, text, references, tables, and figures), with margins of at least 1 inch on all sides and a standard font (e.g., Times New Roman) of 12 points (no smaller). The entire paper (text, references, tables, etc.) must be double spaced.

Instructions on preparing tables, figures, references, metrics, and abstracts appear in the *Publication Manual of the American Psychological Association* (6th edition).

Authors submitting manuscripts that report new data collection, especially randomized clinical trials (RCTs), should comply with the newly developed APA Journal Article Reporting Standards (PDF, 98KB) (JARS; see *American Psychologist*, 2008, 63, 839–851 or Appendix in the *APA Publication Manual*).

For papers that exceed 35 pages, authors must justify the extended length in their cover letter (e.g., reporting of multiple studies), and in no case should the paper exceed 45 pages total. Papers that do not conform to these guidelines may be returned without review.

The References section should immediately follow a page break.

## Brief Reports

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In addition to full-length manuscripts, the *JCCP* will consider Brief Reports of research studies in clinical psychology. The Brief Report format may be appropriate for empirically sound studies that are limited in scope, contain novel or provocative findings that need further replication, or represent replications and extensions of prior published work.

Brief Reports are intended to permit the publication of soundly designed studies of specialized interest that cannot be accepted as regular articles because of lack of space.

Brief Reports must be prepared according to the following specifications: Use 12-point Times New Roman type and 1-inch (2.54-cm) margins, and do not exceed 265 lines of text including references. These limits do not include the title page, abstract, author note, footnotes, tables, or figures.

An author who submits a Brief Report must agree not to submit the full report to another journal of general circulation. The Brief Report should give a clear, condensed summary of the procedure of the study and as full an account of the results as space permits.

## Commentaries

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*JCCP* now publishes papers that are commentaries of previously published articles in this journal. Two types of commentaries will be considered:

### Brief Comment

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A Brief Comment would be written in response to a single article previously published in *JCCP*. The primary purpose would be to provide a meaningful insight, concern, alternative interpretation, clarification, or critical analysis. It is not intended to be pedestrian in nature (e.g., simply highlighting that a given study is statistically underpowered). Rather, its publication would provide for a richer and more comprehensive understanding of a methodological, conceptual, or professional issue that significantly adds to the literature. Similar to a Brief Report, Brief Comments should not exceed 265 lines of text including references. This limit does not include the title page, abstract, or author notes. The title of a Brief Comment should include a subtitle reflecting the actual title and year of publication of the article that engendered the comment. For example — "The Importance of Focusing on External Validity: A Brief Comment on *Testing the Efficacy of Two Differing Types of Stress Management Interventions for the Treatment of Essential Hypertension* (Jones & Smith, 2012)."

Brief Comments should be submitted in a timely manner, no later than 9 months after publication of the original article. Upon acceptance of a Brief Comment, the author(s) of the original paper would be invited to submit a response, whereupon, if acceptable, both the Brief Comment and Response would be published together. Such Responses to a Brief Comment should also not exceed 265 lines of text including references.

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The purpose of this type of article is essentially similar to that of a Brief Comment (i.e., to provide a meaningful insight, concern, alternative interpretation, clarification, or critical analysis), but would be written in response to a series of articles previously published in *JCCP* or that involves a more extensive and far-reaching conceptual or methodological issue. An example might include describing and analyzing the limitations of a particular statistical or methodological procedure used in several studies previously published in *JCCP*, provided along with meaningful recommendations.

This type of article should not exceed approximately one half the length of the original paper (note that 1 journal page equals approximately 3–3.5 manuscript pages). Unless permission from the editor is received, no Extended Comment should exceed 20 manuscript pages inclusive of all references, tables, and figures. Similar to a Brief Comment, where and when appropriate, if such a paper is accepted, the author(s) of the original article(s) will be contacted to write a response, whereupon, if acceptable, both the Extended

Comment and Response would be published together. This Invited Response should not exceed approximately one half the length of the Extended Comment.

The title of this type of article need not include a subtitle representing the original article(s). One important review criteria involves the timeliness of the topic and its potential contribution to the scientific literature base relevant to the scope of *JCCP* content.

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Whereas the majority of papers published in *JCCP* will involve descriptions of quantitatively-based investigations, this journal also considers conceptual articles on topics of broad theoretical, methodological, or practical interest that advance the field of clinical psychology. Examples might include describing a new methodological or statistical procedure, delineating methods of enhancing dissemination of research findings from the lab to real-world settings, or advocating the need to increase the profession's research efforts regarding a traditionally underserved population.

Similar formatting guidelines for submitting a full length research article would apply for these types of papers.

#### Title of Manuscript

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The title of a manuscript should be accurate, fully explanatory, and preferably no longer than 12 words. The title should reflect the content and population studied (e.g., "treatment of generalized anxiety disorders in adults").

If the paper reports a randomized clinical trial (RCT), this should be indicated in the title. Note that JARS criteria must be used for reporting purposes.

#### Abstract and Keywords

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Starting in 2010, all manuscripts published in the *Journal of Consulting and Clinical Psychology* will include a structured abstract of up to 250 words.

For studies that report randomized clinical trials or meta-analyses, the abstract also must be consistent with the guidelines set forth by JARS or MARS (Meta-Analysis Reporting Standards) guidelines, respectively. Thus, in preparing a manuscript, please ensure that it is consistent with the guidelines stated below.

Please include an Abstract of up to 250 words, presented in paragraph form. The Abstract should be typed on a separate page (page 2 of the manuscript), and must include each of the following sections:

- **Objective:** A brief statement of the purpose of the study
- **Method:** A detailed summary of the participants (*N*, age, gender, ethnicity) as well as descriptions of the study design, measures (including names of measures), and procedures
- **Results:** A detailed summary of the primary findings that clearly articulate comparison groups (if relevant), and that indicate significance or confidence intervals for the main findings
- **Conclusions:** A description of the research and clinical implications of the findings

After the abstract, please supply up to five keywords or short phrases.

#### Participants: Description and Informed Consent

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The Method section of each empirical report must contain a detailed description of the study participants, including (but not limited to) the following: age, gender, ethnicity, SES, clinical diagnoses and comorbidities (as appropriate), and any other relevant demographics.

In the Discussion section of the manuscript, authors should discuss the diversity of their study samples and the generalizability of their findings.

The Method section also must include a statement describing how informed consent was obtained from the participants (or their parents/guardians) and indicate that the study was conducted in compliance with an appropriate Internal Review Board.

### Measures

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The Method section of empirical reports must contain a sufficiently detailed description of the measures used so that the reader understands the item content, scoring procedures, and total scores or subscales. Evidence of reliability and validity with similar populations should be provided.

### Statistical Reporting of Clinical Significance

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*JCCP* requires the statistical reporting of measures that convey clinical significance. Authors should report means and standard deviations for all continuous study variables and the effect sizes for the primary study findings. (If effect sizes are not available for a particular test, authors should convey this in their cover letter at the time of submission.)

*JCCP* also requires authors to report confidence intervals for any effect sizes involving principal outcomes (see Fidler et al., *Journal of Consulting and Clinical Psychology*, 2005, pp. 136–143 and Odgaard & Fowler, *Journal of Consulting and Clinical Psychology*, 2010, pp.287–297).

In addition, when reporting the results of interventions, authors should include indicators of clinically significant change. Authors may use one of several approaches that have been recommended for capturing clinical significance, including (but not limited to) the reliable change index (i.e., whether the amount of change displayed by a treated individual is large enough to be meaningful; see Jacobson et al., *Journal of Consulting and Clinical Psychology*, 1999), the extent to which dysfunctional individuals show movement into the functional distribution (see Jacobson & Truax, *Journal of Consulting and Clinical Psychology*, 1991), or other normative comparisons (see Kendall et al., *Journal of Consulting and Clinical Psychology*, 1999).

The special section of *JCCP* on "Clinical Significance" (*Journal of Consulting and Clinical Psychology*, 1999, pp. 283–339) contains detailed discussions of clinical significance and its measurement and should be a useful resource (see also Atkins et al., *Journal of Consulting and Clinical Psychology*, 2005, pp. 982–989).

### Discussion of Clinical Implications

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Articles must include a discussion of the clinical implications of the study findings or analytic review. The Discussion section should contain a clear statement of the extent of clinical application of the current assessment, prevention, or treatment methods. The extent of application to clinical practice may range from suggestions that the data are too preliminary to support widespread dissemination to descriptions of existing manuals available from the authors or archived materials that would allow full implementation at present.

### Randomized Clinical Trials: Use of JARS Guidelines

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*JCCP* requires the use of JARS guidelines for randomized clinical trials, consistent with the recommendations and policies established by the Publications and Communications Board of the American Psychological Association. JARS offers a standard way to improve the quality of such reports, and to ensure that readers have the information necessary to evaluate the quality of a clinical trial.

Manuscripts that report randomized clinical trials are required to include a flow diagram of the progress through the phases of the trial. When a study is not fully consistent with JARS guidelines, the limitations should be acknowledged and discussed in the text of the manuscript.

For follow-up studies of previously published clinical trials, authors should submit a flow diagram of the progress through the phases of the trial and follow-up. The above checklist information should be completed to the extent possible, especially for the Results and Discussion sections of the manuscript.

Authors of RCTs should also describe procedures to assess for treatment fidelity (also known as treatment integrity), including both therapist adherence and competence. Where possible, results should be reported regarding the relationship between fidelity and outcome found in the investigation.

- [View the JARS guidelines \(PDF, 98KB\)](#)

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#### Meta-Analyses of Randomized Clinical Trials: Use of MARS Guidelines

*JCCP* requires the use of the APA MARS guidelines for meta-analyses of randomized clinical trials. MARS offers a standard way to improve the quality of such reports, and to ensure that readers have the information necessary to evaluate the quality of a meta-analysis.

Manuscripts that report meta-analyses of randomized clinical trials are required to include a flow diagram of the progress through the stages of the meta-analysis. When a study is not fully consistent with MARS, the limitations should be acknowledged and discussed in the text of the manuscript.

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#### Manuscript Preparation

Prepare manuscripts according to the *Publication Manual of the American Psychological Association* (6<sup>th</sup> edition). Manuscripts may be copyedited for bias-free language (see Chapter 3 of the *Publication Manual*).

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Double-space all copy. Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the *Manual*.

Below are additional instructions regarding the preparation of display equations and tables.

#### Display Equations

We strongly encourage you to use MathType (third-party software) or Equation Editor 3.0 (built into pre-2007 versions of Word) to construct your equations, rather than the equation support that is built into Word 2007 and Word 2010. Equations composed with the built-in Word 2007/Word 2010 equation support are converted to low-resolution graphics when they enter the production process and must be rekeyed by the typesetter, which may introduce errors.

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Verify that your equation is correct, click File, and then click Update. Your equation has now been inserted into your Word file as a MathType Equation.

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Use Word's Insert Table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

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List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the References section.

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Rogers, T. T., & McClelland, J. L. (2004). *Semantic cognition: A parallel distributed processing approach*. Cambridge, MA: MIT Press.
- **Chapter in an Edited Book:**  
Gill, M. J., & Sypher, B. D. (2009). Workplace incivility and organizational trust. In P. Lutgen-Sandvik & B. D. Sypher (Eds.), *Destructive organizational communication: Processes, consequences, and constructive ways of organizing* (pp. 53–73). New York, NY: Taylor & Francis.

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The minimum line weight for line art is 0.5 point for optimal printing.

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