July-September 2019
volume 67 number 3
ISSN 0020-7144

THE INTERNATIONAL JOURNAL OF
Clinical and Experimental
HYPNOSIS

Official Publication of The Society for Clinical and Experimental Hypnosis
Official Journal of the Canadian Society of Clinical Hypnosis – Ontario Division
The Official Journal of the Society of Psychological Hypnosis (American Psychological Association Division 30)
The Official Journal of the International Society of Hypnosis

Routledge
Taylor & Francis Group

International Journal of Clinical and Experimental Hypnosis

ISSN: 0020-7144 (Print) 1744-5183 (Online) Journal homepage: https://www.tandfonline.com/loi/nhyp20

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To cite this article: Keara E. Valentine, Leonard S. Milling, Lauren J. Clark & Caitlin L. Moriarty (2019) The Efficacy of Hypnosis as a Treatment for Anxiety: *A Meta-Analysis*, International Journal of Clinical and Experimental Hypnosis, 67:3, 336-363, DOI: 10.1080/00207144.2019.1613863

To link to this article: https://doi.org/10.1080/00207144.2019.1613863

Intl. Journal of Clinical and Experimental Hypnosis, 67(3): 336–363, 2019

ISSN: 0020-7144 print / 1744-5183 online
DOI: https://doi.org/10.1080/00207144.2019.1613863

THE EFFICACY OF HYPNOSIS AS A TREATMENT FOR ANXIETY: *A META-ANALYSIS*

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Abstract: This meta-analysis quantifies the effectiveness of hypnosis in treating anxiety. Included studies were required to utilize a between-subjects or mixed-model design in which a hypnosis intervention was compared with a control condition in alleviating the symptoms of anxiety. Of 399 records screened, 15 studies incorporating 17 trials of hypnosis met the inclusion criteria. At the end of active treatment, 17 trials produced a mean weighted effect size of 0.79 ($p \leq .001$), indicating the average participant receiving hypnosis reduced anxiety more than about 79% of control participants. At the longest follow-up, seven trials yielded a mean weighted effect size of 0.99 ($p \leq .001$), demonstrating the average participant treated with hypnosis improved more than about 84% of control participants. Hypnosis was more effective in reducing anxiety when combined with other psychological interventions than when used as a stand-alone treatment.

Anxiety problems and anxiety disorders are some of the most impairing and costly mental health conditions in the United States. As a group, the anxiety disorders are also the most common of the mental disorders (American Psychiatric Association, 2013), with the lifetime prevalence in the US estimated to be approximately 29% of the population (Kessler, Chiu, Demler, & Walters, 2005). No doubt, there are many other individuals who suffer from significant anxiety symptoms but who do not qualify for a diagnosis of an anxiety disorder according to the criteria listed in the *Diagnostic and Statistical Manual* (American Psychiatric Association). According to the National Comorbidity Survey Replication (Kessler et al., 2005), among individuals with an anxiety disorder, an estimated 23% had serious impairment and 34% had

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Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/nhyp.

moderate impairment. The economic costs associated with the anxiety disorders are staggering. One study estimated the total costs associated with the anxiety disorders in the US to be $46.6 billion, with about three-quarters of those costs attributable to reduced productivity (DuPont et al., 1996). Fortunately, there are many effective psychological interventions for anxiety.

Psychological Interventions for Anxiety

A number of psychological interventions have been proven to be beneficial in the treatment of anxiety. *Cognitive-behavioral therapy* (CBT) is a structured, short-term psychotherapy that focuses on solving problems by producing cognitive and behavioral changes (Beck, 2011). *Exposure* is a key CBT technique aimed at changing behavior by confronting feared or avoided situations or stimuli (Wright, Brown, Thase, & Basco, 2017). Another key CBT technique is *cognitive restructuring*, in which individuals are assisted in understanding and identifying faults in their thinking and practicing more realistic and adaptive thoughts (Tolin, 2016). A newer intervention that has become increasingly popular in the treatment of anxiety is *mindfulness*, one of the core components found in Acceptance and Commitment therapy. In mindfulness, individuals are taught how to become fully engaged in their experiences and to handle painful thoughts and feelings (Harris, 2009). A more traditional intervention shown to be effective in treating anxiety is *progressive muscle relaxation*, in which clients are trained to relax their muscles one muscle group at a time in an attempt to quiet the nervous system and reduce anxiety (Takaishi, 2000). Finally, *psychodynamic psychotherapy* is a venerable form of treatment for anxiety that involves exploring aspects of self that may lie in the unconscious. Treatment may include discussion of emotions, avoidances and defenses, behavior patterns, past experiences, and interpersonal relations, with an emphasis on the therapeutic relationship (Shedler, 2010).

Hypnosis and Anxiety

Empirical research has demonstrated that hypnosis is a very effective intervention for a variety of problems and symptoms, including pain (reviewed in Montgomery, DuHamel, & Redd, 2000; Patterson & Jensen, 2003), the nausea and emesis associated with chemotherapy (reviewed in Richardson, Smith, McCall, Richardson, & Kirsch, 2007), psychosomatic disorders (reviewed in Flammer & Alladin, 2007), smoking cessation (reviewed in Green, 2010; Green, Lynn, & Montgomery, 2006), obesity (reviewed in Kirsch, 1996; Milling, Gover, & Moriarty, 2018), and depression (reviewed in Shih, Yang, & Koo, 2009). Meta-analyses of the

effectiveness of hypnosis as an intervention for these problems have produced effect sizes ranging from 0.31 for smoking cessation (Green et al., 2006) to as large as 1.58 for obesity (Milling et al., 2018). Through the years, a growing number of controlled studies of the use of hypnosis for alleviating anxiety have appeared. However, to our knowledge, there has never been a meta-analysis quantifying the overall effectiveness of hypnosis as a treatment for anxiety.

The Current Study

In view of this gap in the literature, the primary purpose of this study is to quantify the effectiveness of hypnosis for reducing anxiety by conducting a meta-analysis of all controlled studies of this intervention. As far as we know, this is the first meta-analysis of the overall efficacy of hypnosis as a treatment for anxiety.

Additionally, this meta-analysis aims to address three secondary issues. First, we wondered whether hypnosis interventions for anxiety are more effective when they include training in self-hypnosis. The impact of adding self-hypnosis training to hypnosis interventions has not been extensively studied. However, in a recent meta-analysis of the use of hypnosis for treating obesity, Milling et al. (2018) found that hypnosis interventions that incorporated self-hypnosis training produced significantly more weight loss than hypnosis interventions that did not include such training. Accordingly, we predicted that hypnosis treatments would be more effective in reducing anxiety when incorporating self-hypnosis training.

Second, we were interested in knowing whether hypnosis treatments for anxiety would produce larger effect sizes when compared with no-contact control conditions (i.e., wait list and no-treatment control conditions) than when compared with contact control conditions (i.e., standard care and attention control conditions). Previous meta-analyses have shown that both CBT (Cooper, Gregory, Walker, Lambe, & Salkovskis, 2017) and Acceptance and Commitment therapy (A-Tjak et al., 2015) yielded larger effect sizes when compared with wait list control conditions than with standard care control conditions. Presumably, the effect of hypnosis on anxiety would be more apparent when contrasted with no contact at all versus treatment as usual or minimal attention. Consequently, we anticipated that hypnosis would produce larger effect sizes when compared with no-contact control conditions than with contact control conditions.

Finally, we conjectured that hypnosis might be more effective in alleviating anxiety when combined with other psychological interventions for this problem than when used as a stand-alone intervention.

Combining hypnosis with other psychological interventions potentially offers a broader range of clinical tools to address the symptoms of anxiety. Of note, Milling et al. (2018) demonstrated that hypnosis was significantly more effective in treating obesity when combined with CBT than when used as a stand-alone intervention. Accordingly, we hypothesized that hypnosis would be more effective in reducing anxiety when combined with other interventions for this problem than when employed as a stand-alone treatment.

In sum, this is the first meta-analysis quantifying the overall efficacy of hypnosis as a treatment for anxiety. It is important to ascertain how effective hypnosis is in treating this widespread and debilitating problem as well as to identify the circumstances in which it may be most beneficial.

Method

Inclusion Criteria

To be included in the meta-analysis, studies were required to use a between-subjects or mixed-model design in which hypnosis was compared with a no-treatment, wait list, attention, or standard care control condition in reducing anxiety symptoms and published in an English-language, peer-reviewed journal or appear in *Dissertation Abstracts International*. Only studies in which the primary focus was the use of hypnosis to reduce anxiety were included in this meta-analysis. Studies in which the primary goal of treatment was the use of hypnosis to reduce other symptoms (and anxiety was a secondary focus) were not eligible for inclusion (e.g., Liossi & Hatira, 1999). Similarly, studies in which anxiety was not an outcome were not included. For example, Schnur et al. (2009) assessed negative affectivity, which includes both anxiety and depression, but did not measure them separately.

Search Strategy

The PsycINFO and PubMed (Medline) databases were searched for articles containing abstracts satisfying the inclusion criteria through the end of July 2017. For PsycINFO, the search terms were (hypnosis) AND (anxiety) AND (effectiveness or efficacy or effective) AND (treatment or intervention or therapy). For PubMed, the MeSH Terms were (hypnosis) AND (anxiety) AND (outcome studies). As shown in Figure 1, the two searches yielded a total of 397 records. An additional two records were included from Kirsch, Montgomery, and Sapirstein (1995). The 399 records were examined to identify duplicates. Six duplicate records were eliminated, leaving a total of 393 unique records to be screened.

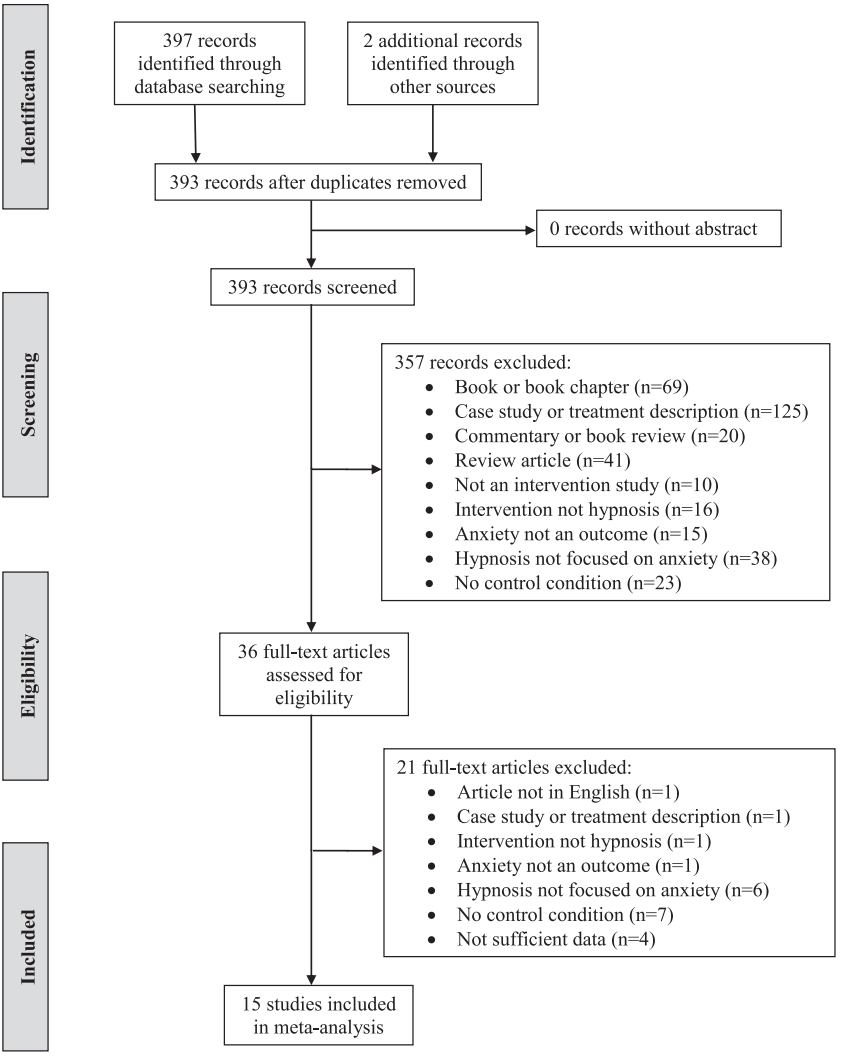

Figure 1. **PRISMA flow chart.**

Screening

Each of the 393 abstracts were screened separately by the first author and either the third or fourth author using the stated inclusion criteria. Differences between raters were resolved by consensus. Of the 393 abstracts screened, 357 abstracts were eliminated. The reasons for exclusion were: 69 abstracts were books or book chapters, 125 abstracts were

case studies or a description of treatment, 20 abstracts were commentaries or book reviews, 41 abstracts were review articles, 10 abstracts were not an intervention study, 16 abstracts used interventions that did not involve hypnosis, 15 abstracts did not have anxiety as an outcome, 38 abstracts did not utilize hypnosis as an intervention focused on reducing anxiety, and 23 abstracts did not have a control condition. After removing the 357 abstracts that did not satisfy the inclusion criteria, 36 records remained for further evaluation.

Selection of Studies

The remaining 36 records were examined by reading in full each of the articles or dissertations and evaluating them using the stated inclusion criteria. Each article and dissertation was read and classified separately by the first author, second author, and either the third or fourth author. Differences in classification were resolved by consensus. Of the 36 articles and dissertations, 21 were excluded for the following reasons: one article was not in English, one article was a case study or a description of treatment, one article had an intervention that was not hypnosis, one article did not have anxiety as an outcome, six articles did not utilize hypnosis as an intervention focused on reducing anxiety, seven articles had no control condition, and four articles did not contain sufficient data for analysis. This left a total of 15 articles and dissertations to be included in the meta-analysis.

Two of the 15 studies contained two hypnosis interventions that were compared to a control condition of some kind (i.e., Boutin & Tosi, 1983; Katcher, Segal, & Beck, 1984). Following Kirsch et al. (1995), it was decided to utilize treatment rather than study as the unit of analysis. This produced 17 trials for inclusion in the meta-analysis. Table 1 shows the main characteristics of the 17 trials, including the type of anxiety, type of control condition, dependent measures of anxiety, and a brief description of the hypnotic intervention.

Data Abstraction

Articles and dissertations meeting the inclusion criteria were read independently by the first author, second author, and either the third or fourth author, and data were abstracted using a standardized coding sheet. Discrepancies in coding were discussed by the authors and resolved by consensus. Specific data abstracted included: a) results by condition on measures of anxiety at posttreatment and follow-up (e.g., means, standard deviations, condition sizes) needed to calculate effect sizes and drop-out rates; b) type of control condition; c) whether self-hypnosis was utilized as part of the intervention; d) whether hypnosis was used as stand-alone treatment or together with other psychological interventions; and e) the relevant Cochrane Risk of Bias dimensions.

Table 1
Characteristics of Trials of Hypnosis in Meta-Analysis

Trial	Type of Anxiety (Overall N)	Control Condition	Indicators of Anxiety	Description of Hypnosis Intervention
Akgul et al. (2016)	Coronary bypass surgery (44)	SC	STAI Pulse rate Systolic Dystolic	Suggestions for relaxation and fear reduction
Allen (1998)	General anxiety (10)	WL	STAI	Suggestions for relaxation, safety, self-control, and reduced anxiety, plus CBT and biofeedback
Boutin & Tosi (1983), #1[a]	Test anxiety (48)	WL	TAS MAACL STAI AD S-R Palmar	Suggestions for relaxation and reduced anxiety
Boutin & Tosi (1983), #2[b]	Test anxiety (48)	WL	TAS MAACL STAI AD S-R Palmar	Suggestions for positive self-talk and positive affect during tests, plus CBT
de Klerk et al. (2004)	Coronary bypass surgery (50)	SC	POMS-A	Suggestions for relaxation, going to special place, inner strength, and age progression, plus rehearsal of medical procedure
Glaesmer et al. (2015)	Dental anxiety (102)	SC	VAS	Suggestions for relaxation, recall of pleasant experience, dissociation, and reinterpretation of noises associated with dental procedure
Hart (1980)	Open heart surgery (40)	SC	STAI	Suggestions for relaxation, quick recovery, and visual imagery of successful postsurgical recovery
Katcher et al. (1984), #1[c]	Dental anxiety (42)	SC	PCI	Suggestions for relaxation and contemplation of aquarium; post-hypnotic suggestions for re-entering hypnosis during dental procedure

(*Continued*)

Table 1
(*Continued*)

Trial	Type of Anxiety (Overall N)	Control Condition	Indicators of Anxiety	Description of Hypnosis Intervention
Katcher et al. (1984), #2[d]	Dental anxiety (42)	SC	PCI	Suggestions for relaxation and contemplation of poster; post-hypnotic suggestions for re-entering hypnosis during dental procedure
Melnick & Russell (1976)	Test anxiety (36)	AC	TAQ Final exam	Suggestions for relaxation, happiness, and calmness
Schoenberger et al. (1997)	Public speaking anxiety (62)	WL	PRCS FNE SUDS Pulse rate TBCL	Hypnotic induction followed by CBT for social phobia, including cognitive restructuring, exposure, and progressive muscle relaxation
Stanton (1978)	General anxiety (40)	WL	Willoughby	Suggestions to rest in silence
Stanton (1984)	General anxiety (60)	WL	Willoughby	Suggestions for stress and anxiety reduction, and going to special place
Stanton (1994)	Performance anxiety (40)	AC	PAI	Suggestions for images associated with increased mental control, calmness, and confidence
Sullivan et al. (1974)	Test anxiety (24)	NC	Pic. Comp. Bender	Suggestions for relaxation and improved performance
Whitehouse et al. (1996)	General anxiety (102)	WL	BSI-A	Training in self-hypnosis for relaxation
Wojcikiewicz & Orlick (1987)	Performance anxiety (42)	NC	S-R Hit	Suggestions for relaxation and confidence

Note. [a]Hypnosis only; [b]Rational Stage Directed Hypnotherapy; [c]Hypnosis with aquarium; [d]Hypnosis with poster; SC = standard care control; WL = wait list control; AC = attention control; NC = no treatment control; STAI = State-Trait Anxiety Inventory; Systolic = systolic blood pressure; Dystolic = dystolic blood pressure; TAS = Test Anxiety Scale; MAACL = Multiple Affect Adjective Checklist; AD = Anxiety Differential; S-R = S-R Inventory of Anxiousness; POMS-A = Profile of Mood States–Anxiety Scale; VAS = Visual Analog Scale; PCI = Patient Comfort Index; TAQ = Test Anxiety Questionnaire; FNE = Fear of Negative Evaluation; SUDS = Subjective Units of Distress; TBC = Timed Behavior Checklist; Willoughby = Willoughby Questionnaire; PAI = Performance Anxiety Inventory; Pic. Comp. = Picture Completion; BSI-A = Brief Symptom Anxiety Scale; Hit = Hit indicator.

Risk of Bias Assessment

The methodological quality of each of the 17 trials was assessed using the Cochrane Risk of Bias Tool (Higgins & Green, 2011). The following five domains were assessed: a) sequence generation; b) allocation concealment; c) incomplete outcome data at posttreatment; d) incomplete outcome data at follow-up; and e) selective outcome reporting. Each trial was rated as having a high risk, low risk, or unclear risk in each of the five domains using the criteria suggested by Higgins and Green.

Results

Data Synthesis

Effect sizes were calculated for each of the 17 trials utilizing the method of Lipsey and Wilson (2001). An effect size was generated for each dependent measure of anxiety within each trial separately at posttreatment (i.e., at the conclusion of active treatment) and at follow-up. Each dependent measure of anxiety was classified as falling into one of four channels of measurement (i.e., self-report, behavioral, performance, or physiological). Within each trial, an average effect size was calculated for each channel of measurement and then averaged across all available channels of measurement, thereby producing a single effect size at posttreatment for each of the 17 trials. This was done to avoid over-weighting any particular channel of measure in calculating overall effect sizes for each trial.

Seven of the 17 trials included a follow-up assessment after the conclusion of active treatment. An effect size for each of seven follow-up trials was produced using the same method employed with the posttreatment measures. Where trials had more than one follow-up assessment, data from the longest follow-up period were used. Effect sizes for data at posttreatment and follow-up were handled separately because it was anticipated the impact of particular interventions might vary over time.

Effect size was calculated as the mean difference in anxiety score at posttreatment (or follow-up) between a hypnosis condition and a control condition divided by the pooled standard deviation (Cohen's d). Each effect size was then corrected for small sample bias (Hedges' g; see Hedges & Olkin, 1985).

For a number of trials, effect sizes were calculated by extrapolating from the reported results. Two studies presented the standard error of estimate but not the standard deviation of each dependent measure of anxiety (Allen, 1998; Katcher et al., 1984). For these studies, the standard error of the estimate was used to estimate the standard deviation. Whitehouse et al. (1996) reported means and standard deviations

collapsed across all treatment conditions for the dependent measure of anxiety. A figure was used to estimate means for each condition and the standard deviation collapsed across conditions was used in place of standard deviations by condition in our effect size calculations. Wojcikiewicz and Orlick (1987) reported *n*s, as well as pre- and posttreatment levels of anxiety by condition, but not standard deviations. The authors performed an analysis of variance (ANOVA) on difference scores between pre- and posttreatment levels of anxiety. The *F* value for the ANOVA was used to calculate the pooled standard deviation for the entire sample, which in turn was used to calculate effect sizes, standard errors of the estimate, and inverse variance weights for changes in anxiety from pre- to posttreatment.

A number of trials failed to report complete information on the *n*s of each condition at pre, post, and follow-up. Boutin and Tosi (1983) reported only the overall number of participants in their study. Because a total of 36 participants enrolled and there were three conditions, we assumed there were 12 participants in each condition at pre, post, and follow-up. Likewise, Glaesmer, Geupel, and Haak (2015) reported only that 102 participants took part in the study. Because there were two treatment conditions, we assumed there were 51 participants in each condition at pre, post, and follow-up. Similarly, Melnick and Russell (1976) indicated 27 participants were randomly assigned to three treatment groups, leading us to assume there were 9 participants in each condition at pre- and posttreatment. Schoenberger, Kirsch, Gearan, Montgomery, and Pastyrnak (1997) reported there were 41 participants pretreatment and 25 participants posttreatment. The authors indicated that 11 people in the control condition and 5 people in the hypnosis condition did not complete the posttreatment assessment. Thus, it was assumed there were 21 participants in the control condition and 20 participants in the hypnosis condition at pretreatment, as well as 10 participants in the control condition and 15 participants in hypnosis condition at posttreatment. Sullivan, Johnson, and Bratkovitch (1974) reported that 10 participants completed the hypnosis condition, 6 completed the systematic relaxation condition, and 6 completed the control condition. Because 2 individuals dropped out of the study, it was assumed there were 11 participants in the hypnosis condition and 7 participants in the control condition at pretreatment. Finally, Wojcikiewicz and Orlick (1987) reported a total of 42 participants at pretreatment and 11 participants in each condition at posttreatment. Given there were three conditions, we assumed each condition had 14 participants at pretreatment.

Table 2 presents the combined *n* of the hypnosis and control conditions, corrected effect size, standard error of the effect size, confidence intervals (CIs), and significance test for each of the 17 trials at posttreatment. To facilitate interpretation, effect sizes are positive if hypnosis produced more improvement in anxiety symptoms than the

Table 2
Corrected Effect Sizes (ES) of Trials of Hypnosis at Posttreatment

Study	N	Corrected ES	Standard Error of ES	Lower Limit	Upper Limit	*Z*-Value	*p*-Value
Akgul et al. (2016)	44	1.11	0.33	0.46	1.76	3.36	.001
Allen (1998)	10	1.53	0.72	0.12	2.94	2.13	.033
Boutin & Tosi (1983), #1	48	1.66	0.48	0.72	2.60	3.46	.001
Boutin & Tosi (1983), #2	48	4.73	0.74	3.28	6.18	6.39	.000
de Klerk et al. (2004)	50	0.91	0.29	0.34	1.48	3.14	.002
Glaesmer et al. (2015)	102	0.38	0.20	−0.01	0.77	1.90	.057
Hart (1980)	40	0.42	0.32	−0.21	1.05	1.31	.190
Katcher et al. (1984), #1	42	0.93	0.49	−0.03	1.89	1.89	.059
Katcher et al. (1984), #2	42	0.86	0.49	−0.10	1.82	1.76	.078
Melnick & Russell (1976)	36	0.43	0.47	−0.49	1.35	0.91	.363
Schoenberger et al. (1997)	62	0.71	0.43	−0.13	1.55	1.65	.099
Stanton (1978)	40	0.44	0.32	−0.19	1.07	1.38	.168
Stanton (1984)	60	1.66	0.37	0.93	2.39	4.49	.000
Stanton (1994)	40	0.31	0.32	−0.32	0.94	0.97	.332
Sullivan et al. (1974)	24	0.94	0.56	−0.16	2.04	1.68	.093
Whitehouse et al. (1996)	35	0.71	0.36	0.00	1.42	1.97	.049
Wojcikiewicz & Orlick (1987)	42	0.89	0.45	0.01	1.77	1.98	.048

Note. Corrected effect size (ES) is Hedges' *g*.

control condition and negative if the hypnosis condition produced less improvement than the control condition. The table shows a range of effect sizes for the 17 trials. Cohen (1988) classifies effect sizes of 0.20 as small, 0.50 as medium, and 0.80 as large. Accordingly, five positive effect sizes fell in the small range, two positive effect sizes fell in the medium range, and 10 positive effect sizes fell in the large range.

Table 3
Corrected Effect Sizes (ES) of Trials of Hypnosis at Follow-Up

Study	N	Corrected ES	Standard Error of ES	Lower Limit	Upper Limit	Z-Value	p-Value
Boutin & Tosi (1983), #1	48	1.32	0.45	0.44	2.20	2.93	.004
Boutin & Tosi (1983), #2	48	4.57	0.71	3.18	5.96	6.44	.000
de Klerk et al. (2004)	50	1.09	0.30	0.50	1.68	3.63	.000
Glaesmer et al. (2015)	102	0.40	0.20	0.01	0.79	2.00	.046
Stanton (1984)	60	2.14	0.40	1.36	2.92	5.35	.000
Stanton (1994)	40	1.92	0.39	1.16	2.68	4.92	.000
Whitehouse et al. (1996)	35	−0.02	0.35	−0.71	0.67	−0.06	.952

Note. Corrected effect size (ES) is Hedges' *g*.

Table 3 presents the combined *n* of the hypnosis and control conditions, corrected effect size, confidence intervals (CIs), and significance test for each of the seven trials at follow-up. According to Cohen's (1988) guideline, one positive effect size fell in the small range and five positive effect sizes fell in the large range. Additionally, there was one negative effect size that was negligible in magnitude.

Corrected effect sizes were weighted by the associated inverse variance weight for each trial. The mean weighted effect size for 17 trials of hypnosis at posttreatment was 0.79 (SE = 0.09, 95% CI = 0.61 to 0.97), which was significant (z = 8.78, $p \leq .001$, two-tailed). A mean effect size of 0.79 suggests the average participant receiving some form of hypnosis for anxiety showed more improvement than about 79% of control participants. The mean weighted effect size for seven trials of hypnosis at follow-up was 0.99 (SE = 0.13, 95% CI = 0.74 to 1.24), which was significant (z = 7.62, $p \leq .001$, two-tailed). A mean effect size of 0.99 suggests the average participant receiving hypnosis for anxiety showed more improvement than about 84% of control participants.

Channels of Measurement. As mentioned, each of the dependent measures of anxiety in the 17 trials was classified as falling into one of four channels of measurement (i.e., self-report, behavioral, performance, or physiological). An average effect size was calculated for each channel of measurement. For self-report measures, the mean weighted effect size

for 16 trials at posttreatment was 0.88 (SE = 0.09, 95% CI = 0.70 to 1.06), which was significant (z = 9.78, $p \leq .001$, two-tailed). For self-report measures at follow-up, the mean weighted effect size for seven trials was 1.01 (SE = 0.12, 95% CI = 0.77 to 1.25), which was significant (z = 8.42, $p \leq .001$, two-tailed). For physiological measures, the mean weighted effect size for four trials at posttreatment was 0.74 (SE = 0.21, 95% CI = 0.33 to 1.15), which was significant (z = 3.52, $p \leq .001$, two-tailed). For physiological measures at follow-up, the mean weighted effect size for two trials was 2.08 (SE = 0.28, 95% CI = 1.53 to 2.63), which was significant (z = 7.43, $p \leq .001$, two-tailed). A mean weighted effect size was not calculated for the behavioral and performance channels of measurement because there were too few trials using these channels to make calculating an average meaningful.

Type of Anxiety. Four different types of anxiety were investigated in the 17 trials. Three of the 17 trials examined dental anxiety, three evaluated surgery and medical anxiety, four explored general anxiety, and seven appraised test and performance anxiety. The mean weighted effect size for the three posttreatment trials that treated dental anxiety was 0.51 (SE = 0.17, 95% CI = 0.18 to 0.84), which was significant (z = 3.00, $p \leq .01$, two-tailed). The mean weighted effect size for the three posttreatment trials involving surgery and medical anxiety was 0.82 (SE = 0.18, 95% CI = 0.47 to 1.17), which was significant (z = 4.56, $p \leq .001$, two-tailed). For the four posttreatment trials focusing on general anxiety, the mean weighted effect size was 0.93 (SE = 0.19, 95% CI = 0.56 to 1.30), which was significant (z = 4.89, $p \leq .001$, two-tailed). Lastly, the mean weighted effect size for the seven posttreatment trials treating test and performance anxiety was 0.95 (SE = 0.17, 95% CI = 0.62 to 1.28), and was significant (z = 5.59, $p \leq .001$, two-tailed).

Homogeneity tests were performed on effect sizes at posttreatment and follow-up. The sample of 17 overall effect sizes at posttreatment was heterogeneous (Q = 49.32, df = 16, $p \leq .001$). Similarly, the sample of seven overall effect sizes at follow-up was heterogeneous (Q = 57.01, df = 6, $p \leq .001$). This shows the variability of effect sizes in the 17 trials at posttreatment and the seven trials at follow-up was larger than expected from sampling error alone. Because of the amount of heterogeneity in the sample of effect sizes, it was decided to test the hypothesized moderator variables. Moderator analyses were performed on the 17 trials at posttreatment but not on the seven trials at follow up, because it was judged seven trials were not enough to provide a meaningful moderator analysis.

Moderator Analysis

Moderator analyses were conducted utilizing the meta-analysis analog to the analysis of variance of Lipsey and Wilson (2001). Trials were sorted into categories based on an independent variable (e.g.,

random assignment vs. nonrandom assignment) and the homogeneity of effect sizes (Q) was calculated within categories and between categories. If the Q reflecting between-category variance is significant, the difference between subgroups of trials on mean effect size is the result of more than chance. In other words, the difference between subgroups on effect size is statistically significant.

Self-Hypnosis versus No Self-Hypnosis. Of the 17 trials, three employed training in self-hypnosis whereas 14 trials did not. The mean weighted effect size of the trials that provided self-hypnosis training was 0.82 (SE = 0.26, 95% CI = 0.31 to 1.33), which was significant (z = 3.15, $p \leq .01$, two-tailed). The mean weighted effect size of the trials that did not use self-hypnosis was 0.79 (SE = 0.09, 95% CI = 0.61 to 0.97) and was significant (z = 8.78, $p \leq .001$, two-tailed). Contrary to prediction, the test of subgroup differences showed the mean weighted effect size for trials utilizing self-hypnosis was not significantly different from the effect size for trials not using self-hypnosis (Q = 0.00, df = 1, *ns*).

Contact Controls versus No-Contact Controls. Of the 17 trials, seven trials utilized a wait list control group and two trials employed a no-treatment control group. Six of the 17 trials had a standard care control group that received standard medical attention and two trials used an attention control group. It was predicted that trials in which the control group was given no contact (i.e., wait list and no-treatment control) would differ in effect size from trials where control participants received some contact (i.e., standard care and attention control). The mean weighted effect size of trials with no-contact control groups was 1.12 (SE = 0.15, 95% CI = 0.83 to 1.41), which was significant (z = 7.47, $p \leq .001$, two-tailed). The mean weighted effect size of trials with contact control groups was 0.60 (SE = 0.11, 95% CI = 0.38 to 0.82), which was significant (z = 5.45, $p \leq .001$, two-tailed). The test of subgroup differences showed larger effects of hypnosis on anxiety for trials that used no-contact control groups than trials using contact control groups (Q= 7.88, df = 1, $p \leq .01$).

Combined Treatment versus Stand-Alone Hypnosis. Of the 17 trials, four combined hypnosis with other methods of treatment (e.g., cognitive-behavioral therapy) and 13 used hypnosis as a stand-alone intervention. The mean weighted effect size for trials using combined treatment was 1.25 (SE = 0.22, 95% CI = 0.82 to 1.68) which was significant (z = 5.68, $p \leq .001$, two-tailed). The mean weighted effect size for trials using stand-alone hypnosis was 0.70 (SE = 0.09, 95% CI = 0.52 to 0.88) which was significant (z = 7.78, $p \leq .001$, two-tailed). The test of subgroup differences showed that receiving a combination of

treatment was significantly more effective than stand-alone hypnosis in reducing anxiety (Q= 5.23, df= 1, p≤ .025).

Evaluation of Risk of Bias

On the dimension of sequence generation bias, one trial was evaluated as having a low risk of bias, two trials as having high risk, and 14 trials as having unclear risk. Similarly, for allocation concealment bias, two trials were judged as having high risk and 15 trials as having unclear risk. The large number of trials with unclear risk in sequence generation and allocation concealment was due to a lack of detail in the description of the method of random assignment in the articles and dissertation. Of the 17 trials, 15 were assessed as having a low risk of incomplete outcome data bias at posttreatment, whereas two trials had a high risk of bias. All seven trials that had follow-up assessment were evaluated as having a low risk of incomplete outcome data bias. Lastly, of the 17 trials in this meta-analysis, 14 were deemed to have a low risk of bias in selective outcome reporting, whereas one trial had unclear risk, and two trials had high risk. Figure 2 presents a Risk of Bias summary for the 17 trials included in the meta-analysis.

If bias affected our results, trials classified as the low risk would be expected to produce significantly smaller effect sizes than a combination of trials classified as high risk and unclear risk on a particular Risk of Bias dimension. However, there was very little variability in classifications within each of the five Risk of Bias dimensions. Specifically, only one of the 17 trials was classified as low risk on sequence generation and none as low risk on allocation concealment. Fifteen of 17 posttreatment trials and all seven follow-up trials were classified as low risk on incomplete outcome data. Finally, 14 of 17 trials were classified as low risk on selective outcome reporting. As a result of a lack of variability in classifications within each of the five Risk of Bias dimensions, it was not possible to perform a meaningful moderator analysis on them. The risk of bias on selective outcome reporting and incomplete outcome data appears to be low. In contrast, the effect of sequence generation bias and allocation concealment bias on our results is unknown.

Evaluation of Publication Bias

Of the 17 trials in this meta-analysis, 16 were drawn from peer-reviewed journals (and one was an unpublished doctoral dissertation), which may introduce the possibility of publication bias or the file-drawer effect. In the file-drawer effect, studies with negative or inconclusive results tend to not be published. To address this concern, the fail-safe N was calculated according to the method of Orwin (1983). The fail-safe N is the number of studies with an effect size of 0 needed to reduce a large mean weighted effect size to a medium or small effect size. To reduce the medium effect size of 0.79 found at

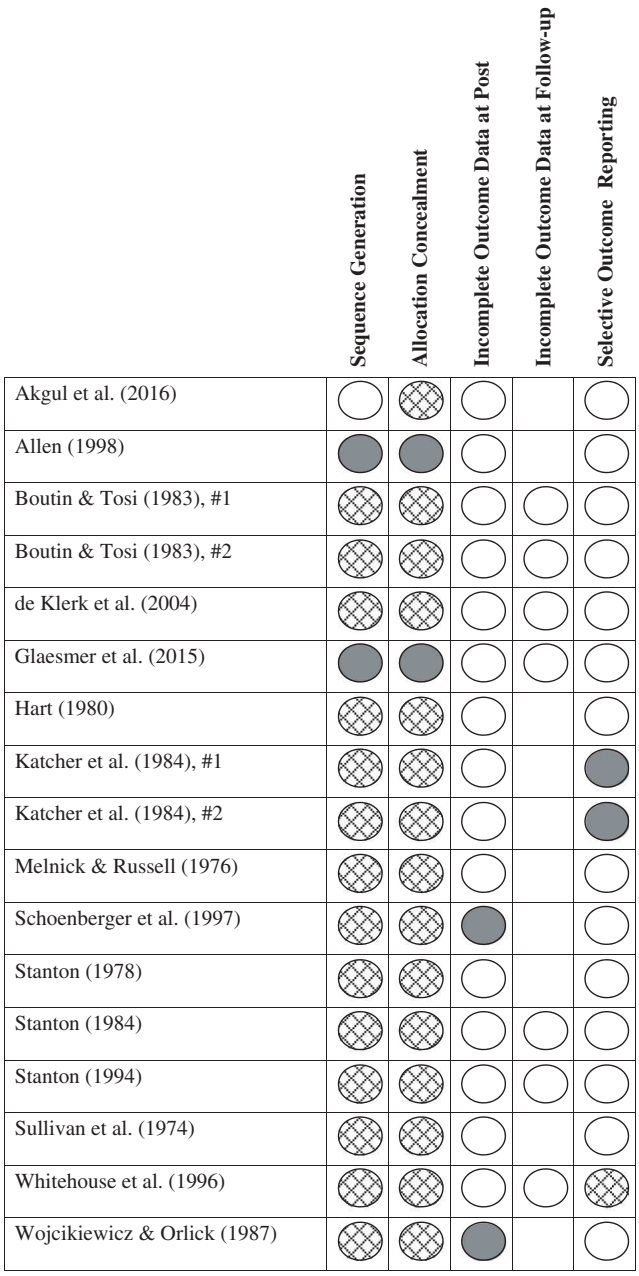

Figure 2. **Risk of bias summary for 17 trials of hypnosis.**
Note. **◯= low risk; ●= high risk; ⊗= unclear risk.**

posttreatment to a small effect size of 0.20, an additional 50 trials with an effect size of 0 would be needed. To reduce the large effect size of 0.99 found at the follow-up to a small effect size of 0.20, an additional 28 trials with an effect size of 0 would be needed. It is unlikely that 50 posttreatment trials or 28 follow-up trials with an effect size of 0 exist.

Discussion

This meta-analysis demonstrates that hypnosis is a highly effective intervention for anxiety. A mean weighted effect size of 0.79 for 17 trials at the conclusion of active treatment falls in the medium range according to Cohen's (1988) guideline and suggests the average participant receiving hypnosis showed more improvement than about 79% of control participants. Additionally, a mean weighted effect size of 0.99 at the end of follow-up falls in the large range and suggests the average participant treated with hypnosis achieved more anxiety reduction than about 84% of control participants. There was no difference in effectiveness between hypnosis interventions that incorporated training in self-hypnosis and those that did not. Hypnosis produced larger effect sizes when compared with no-contact control conditions (i.e., no-treatment and wait list controls) than with contact control conditions (i.e., standard care and attention controls). Finally, hypnosis was more effective in reducing anxiety symptoms when combined with other psychological interventions for this problem (e.g., cognitive-behavioral therapy) than when used as a stand-alone treatment.

The findings of our meta-analysis suggest hypnosis may be as effective, or possibly more effective, than other common interventions for anxiety. At the end of active treatment, we obtained an overall mean weighted effect size of 0.79 (95% CI = 0.61 to 0.97) when hypnosis was compared with contact and no-contact control conditions, as well as a mean weighted effect size of 1.12 (95% CI = 0.83 to 1.41) when hypnosis was compared with only no-contact control conditions. Cognitive-behavior therapy (CBT), progressive muscle relaxation (PMR), mindfulness, and psychodynamic psychotherapy are some of the most popular psychological treatments for anxiety. If the confidence intervals reported in meta-analyses of CBT, PMR, mindfulness, and psychodynamic psychotherapy overlap with those obtained in the current meta-analysis, it suggests there may be no difference in effectiveness between hypnosis and these other interventions. However, if the confidence intervals do not overlap, it introduces the possibility there may be a significant difference between hypnosis and these other anxiety treatments.

CBT is one of the most well-established interventions for anxiety and comprises a range of techniques that include exposure and

cognitive restructuring. A number of meta-analyses report effect sizes comparing CBT with a combination of contact and no-contact control conditions. For example, Wersebe, Sijbrandij, and Cuijpers (2013) obtained an effect size of 0.54 (95% CI = 0.36 to 0.73) when CBT group therapy with exposure was used to ameliorate the symptoms of social anxiety disorder. Similarly, Acarturk, Cuijpers, van Straten, and de Graff (2009) noted an effect size of 0.71 (95% CI = 0.56 to 0.85) in a meta-analysis evaluating a variety of CBT interventions in reducing social anxiety symptoms.

Many meta-analyses report effect sizes comparing CBT with only no-contact control conditions, producing effect sizes in the 0.82 to 1.45 range. Specifically, Mitte (2005) observed an effect size of 0.82 (95% CI = 0.63 to 1.00) when CBT, behavior therapy, and cognitive therapy were used to alleviate the symptoms of generalized anxiety disorder. In a meta-analysis of the effectiveness of exposure for reducing the distress associated with specific phobias, Wolitzky-Taylor, Horowitz, Powers, and Telch (2008) found an effect size of 1.05 (95% CI = 0.91 to 1.20). Additionally, Schwartze et al. (2017) obtained an effect size of 1.08 (95% CI = 0.82 to 1.34) in evaluating CBT group therapy with exposure for panic disorder. One investigative team reported an effect size of 1.12 (95% CI = 1.01 to 1.36) when a variety of CBT techniques including exposure and cognitive therapy were used to treat the symptoms of obsessive-compulsive disorder (Rosa-Alcázar, Sánchez-Meca, Gómez-Conesa, & Marín-Martínez, 2008), and the same effect size of 1.12 (95% CI = 0.77 to 1.45) when these techniques were employed to ameliorate panic disorder (Sánchez-Meca, Rosa-Alcázar, Marín-Martínez, & Gómez-Conesa, 2010). Finally, Cooper et al. (2017) noted an effect size of 1.45 (95% CI = 1.13 to 1.77) when CBT was utilized to treat health anxiety.

Because the confidence intervals for the effect sizes obtained in our meta-analysis overlap with those reported in the aforementioned meta-analyses of CBT, it suggests there may be no significant difference in effectiveness between hypnosis and CBT in treating the symptoms of anxiety.

Progressive muscle relaxation (PMR) is a long-standing intervention for anxiety that has ties to behavior therapy. Manzoni, Pagnini, Castelnuovo, and Molinari (2008) reported an effect size of 0.51 (95% CI = 0.46 to 0.63) when all forms of relaxation were compared with contact and no-contact control conditions in treating the symptoms of anxiety experienced by student volunteers, medical patients, and individuals with anxiety disorders, as well as an effect size of 0.55 for PMR. Psychodynamic psychotherapy is a time-honored treatment for anxiety. Keefe, McCarthy, Dinger, Zilcha-Mano, and Barber (2014) obtained an effect size of 0.64 (CI = 0.35 to 0.94) when psychodynamic

psychotherapy was evaluated against contact and no-contact control conditions in alleviating the distress of patients diagnosed with a DSM anxiety disorder. The results of these meta-analyses suggest that hypnosis may be as effective as PMR and psychodynamic psychotherapy in reducing anxiety.

Mindfulness is an intervention for anxiety that has become increasingly fashionable in recent years. Blanck et al. (2018) reported an effect size of 0.39 (CI = 0.22 to 0.56) when mindfulness was compared with no-contact control conditions in reducing the anxiety experienced by student volunteers. Piet, Würtzen, and Zachariae (2012) obtained an effect size of 0.37 (CI = 0.24 to 0.50) when mindfulness was evaluated against contact and no-contact control conditions in ameliorating the anxiety suffered by cancer patients. Finally, Hofman, Sawyer, Witt, and Oh (2010) observed an effect size of 0.41 (CI = 0.23 to 0.59) when mindfulness was compared with contact and no-contact control conditions in treating individuals with a range of medical and psychological problems. The findings of these meta-analyses, in combination with our results, suggest the possibility that hypnosis may be more effective than mindfulness in alleviating a range of anxiety problems.

All in all, the results of the current meta-analysis suggest hypnosis may be comparable in effectiveness to CBT, PMR, and psychodynamic psychotherapy in treating various anxiety problems, and possibly more effective than mindfulness.

Contrary to prediction, our moderator analysis failed to show that hypnosis was more effective in reducing anxiety when it incorporated training in self-hypnosis than when it did not include such training. Previously, Milling et al. (2018) reported that hypnosis interventions that included training in self-hypnosis were more effective in treating obesity and reasoned that self-hypnosis may be especially useful in treating chronic or episodic problems where it may not always be feasible for a clinician to be present to deliver hypnosis when symptoms occur. However, only four of the 17 trials included in this meta-analysis addressed anxiety problems that could be described as chronic in nature (i.e., general anxiety) and only one of the four trials included training in self-hypnosis. The remaining 13 trials involved more acute anxiety problems such as dental anxiety, medical and surgical anxiety, as well as test and performance anxiety. Consequently, more research is needed to determine whether including training in self-hypnosis is beneficial when treating chronic anxiety.

We found that hypnosis produced larger effect sizes when compared with no-contact control conditions (i.e., wait list and no-treatment controls) than with contact control conditions (i.e., standard care and attention controls). Common sense argues that providing some treatment or contact, as would be the case with standard care

and attention control conditions, should offer more benefit than no contact at all. Consequently, the effect of hypnosis on anxiety would be more pronounced when contrasted with no-contact control conditions than contact control conditions. Moreover, it is possible that the kinds of problems ethically requiring a standard care control condition (e.g., surgical or dental anxiety) may be more difficult to treat than the kinds of anxiety (e.g., experimentally induced public speaking anxiety) allowing for a no-treatment control condition.

Generally, meta-analyses tend to produce larger effect sizes when the treatment under consideration is compared with no-contact control conditions than with contact controls. For example, Cooper et al. (2017) reported effect sizes of 1.45 when CBT was contrasted with wait list control conditions, but only 0.76 when compared with standard care in reducing health anxiety. Similarly, A-Tjak et al. (2015) obtained effect sizes of 0.82 when Acceptance and Commitment therapy was contrasted with wait list controls and 0.64 when compared with standard care in treating a range of clinically relevant mental health and physical problems. Consistent with past research, the results of our meta-analysis suggest that the type of control condition used in treatment outcome studies impacts the magnitude of effect sizes. As such, researchers may wish to take into consideration the type of control condition they use when designing studies and interpreting results.

Consistent with the prediction we found that hypnosis was more effective in reducing anxiety when combined with other interventions (e.g., CBT, biofeedback) than when used as a stand-alone treatment. Trials in which hypnosis was combined with other interventions produced an effect size of 1.25. However, trials in which hypnosis was utilized as a stand-alone treatment yielded an effect size of 0.70. Previously, Milling et al. (2018) reported effect sizes of 2.37 when hypnosis was combined with CBT in treating obesity and 1.36 when used as a stand-alone intervention for this problem. Conceivably, an intervention that combines hypnosis with other techniques offers a greater variety of tools and can address a wider range of symptoms than when hypnosis is employed as a stand-alone treatment.

Research Implications

The findings of this meta-analysis point to potential avenues of investigation on the use of hypnosis for reducing anxiety. We screened 399 records and were able to identify only 15 studies incorporating 17 controlled trials of hypnosis for treating anxiety. Of these 17 trials, only seven included a follow-up assessment. Seven of the 17 trials addressed performance anxiety, four trials involved general anxiety, three trials focused on medical and surgical anxiety, and three trials targeted dental anxiety. The small number of trials examining each type of anxiety makes it difficult to evaluate whether

hypnosis is more effective for treating some kinds of anxiety than others. More controlled studies containing both posttreatment and follow-up assessments of the effectiveness of hypnosis for treating a range of anxiety problems are needed.

More research is also needed on the role of self-hypnosis training in enhancing hypnosis interventions for anxiety. Self-hypnosis has been shown to be effective in treating chronic drug and alcohol use (Pekala et al., 2004), smoking cessation (Holroyd, 1980), depression (Dobbin, Maxwell, & Elton, 2009), and various forms of pain including HIV neuropathic pain (Dorfman et al., 2013), multiple sclerosis pain (Jensen et al., 2009), and chronic low back pain (Tan et al., 2015). Of note, in a meta-analysis of hypnosis for treating obesity, Milling et al. (2018) reported effect sizes of 1.90 for trials that incorporated self-hypnosis training and 1.13 for trials that did not include such training. Hypnosis interventions that offer self-hypnosis training might be especially effective for alleviating forms of anxiety where it would be difficult to arrange for a clinician to be present to deliver hypnosis whenever anxiety symptoms occur. On the other hand, self-hypnosis training might be less crucial when the triggers of anxiety can be anticipated, and a clinician could be scheduled to be present to provide hypnosis. Only three trials were identified in our meta-analysis that utilized training in self-hypnosis to reduce anxiety. More research on this topic would seem to be warranted.

Our results showed that hypnosis is more effective in reducing anxiety when combined with other psychological interventions for this problem than when used a stand-alone treatment. More research is needed on the specific combinations of techniques that might be especially effective in alleviating anxiety. Combining hypnosis with highly similar techniques may be of limited value. For example, using hypnosis and PMR as side-by-side interventions might be redundant because most hypnotic inductions contain specific instructions for relaxation (e.g., Bowers, 1993; Spanos, Radtke, Hodgins, Stam, & Bertrand, 1983; Weitzenhoffer & Hilgard, 1962). Multicomponent treatment packages are common in psychotherapy (e.g., McCullough, 2000; Turk, Meichenbaum, & Genest, 1983). However, there is very little treatment outcome research evaluating multicomponent interventions that incorporate hypnosis. Future investigations could usefully identify the specific psychological procedures that are most effectively combined with hypnosis in treating anxiety.

Clinical Implications

The findings of our meta-analysis suggest that clinicians who work with patients and clients suffering from anxiety should consider utilizing hypnosis as part of treatment. Indeed, our findings indicate that hypnosis is more effective in relieving anxiety when it is combined with other

interventions such as CBT than when used as a stand-alone treatment. Therefore, we recommend that therapists integrate hypnosis and other interventions such as CBT in treating anxiety. There are at least two ways this could be done. First, hypnosis and CBT could be employed as side-by-side interventions. Second, CBT techniques could be delivered in a *hypnotic context* (Kirsch et al., 1995) by performing a hypnotic induction first and then relabeling the CBT techniques as hypnotic in nature. For example, the effect of imaginal exposure could be amplified by relabeling it as hypnotic exposure and presenting the anxiety-provoking images after an induction. Similarly, cognitive restructuring could be relabeled as cognitive self-suggestions and provided after an induction.

Limitations

An important limitation of this meta-analysis is that it was not always possible to code key aspects of the hypnosis interventions under evaluation because of a lack of detail in the journal articles under consideration. In some instances, hypnosis interventions were described very briefly and vaguely. We urge researchers to operationalize their hypnosis interventions in treatment manuals and to indicate the availability of a manual in an article footnote. Furthermore, we recommend that hypnosis researchers supply examples of key hypnotic suggestions as part of an appendix to the journal article. Barker and Jones (2006) offer an excellent example of how this could be done. Providing treatment manuals and examples of suggestions will facilitate meaningful moderator analyses in meta-analysis. Manualizing treatments also make it more likely that hypnosis interventions will be delivered consistently within or across research groups and is required for identifying treatments as empirically supported (Chambless & Hollon, 1998).

Conclusion

The findings of this meta-analysis show that hypnosis is a highly effective intervention for anxiety. Our results indicate the average participant treated with hypnosis achieved more anxiety reduction than about 79% of control participants at the end of active treatment and about 84% of controls at the longest follow-up. The hypnosis interventions evaluated in this meta-analysis appear to be about as effective in alleviating anxiety as CBT, PMR, and psychodynamic psychotherapy and were possibly more effective than mindfulness. Hypnosis produced more anxiety reduction when used in combination with other treatments such as CBT or biofeedback than when employed as a stand-alone intervention. Clinicians may wish to consider hypnosis for clients and patients suffering from anxiety whether as a stand-alone intervention or in conjunction with other treatment modalities.

Author Note

This article is based on a doctoral dissertation prepared by Keara Valentine under the direction of Leonard Milling. Lauren Clark and Caitlin Moriarty made equal contributions to this article. The order of their authorships was determined randomly.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Die Effizienz von Hypnose zur Behandlung von Angst: Eine Meta-Analyse

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Abstract: **Diese Metaanalyse quantifiziert die Wirksamkeit von Hypnose in der Behandlung von Angst. Die eingeschlossenen Studien sollten ein between-subjects oder ein mixed model-Design benutzen, in denen eine hypnotische Intervention mit einem Kontrollzustand zur Erleichterung von Angstsymptomen verglichen wird. Von 399 gesichteten Aufzeichnungen erfüllten 15 Studien mit 17 Untersuchungen mittels Hypnose die Inklusionskriterien. Am Ende der aktiven Behandlung brachten 17 Untersuchungen eine mittlere Effektstärke von 0.79 (p ≤ .,001), was zeigte, daß der durchschnittliche Teilnehmer, der Hypnose erhielt, eine größere Angstreduktion als 79% der Kontrollgruppe zeigte. Am Ende des längsten follow up, ergaben 7 Untersuchungen eine mittlere Effektstärke von 0.99 (p ≤ 0.001), was zeigte, daß der durchschnittliche mit Hypnose behandelte Teilnehmer eine Besserung erfuhr, die größer war als bei 84% der Kontroll-Teilnehmer. Hypnose war in der Angstreduktion effektiver, wenn sie mit anderen psychologischen Interventionen angewandt wurde als wenn sie als alleinstehendes Verfahren benutzt wurde.**

STEPHANIE RIEGEL, M.D.

L'efficacité de l'hypnose comme traitement de l'anxiété:

Une méta-analyse

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Résumé: **Cette méta-analyse mesure l'efficacité de l'hypnose dans le traitement de l'anxiété. Les études comprises dans cette analyse devaient suivre un modèle inter-sujets ou un modèle mixte dans lequel une intervention hypnotique était comparée à une intervention témoin visant à soulager les symptômes de l'anxiété. Des 399 dossiers examinés, 15 études comportant 17 essais utilisant l'hypnose répondaient aux critères retenus. À la fin du traitement actif, 17 essais ont produit un effet pondéré moyen de 0,79 ($p \leq 0.001$), indiquant que l'anxiété du participant hypnotisé moyen s'est trouvée réduite davantage que celle d'environ 79% des participants témoins. Au dernier suivi, 7 essais ont donné une valeur de l'effet moyen pondéré de 0,99 ($p \leq 0.001$), démontrant que l'état du participant moyen traité par l'hypnose s'était amélioré davantage que celui d'environ 84% des**

participants témoins. L'hypnose se révèle toutefois un traitement plus efficace pour réduire l'anxiété lorsqu'elle est combinée avec d'autres interventions psychologiques que lorsqu'elle est utilisée seule.

JOHANNE RAYNAULT

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La eficacia de la hipnosis como tratamiento para ansiedad.

KEARA E. VALENTINE, LEONARD S. MILLING, LAUREN J. CLARK Y CAITLIN L. MORIARTY

Resumen: Este metaanálisis cuantifica la eficacia de la hipnosis como tratamiento para la ansiedad. Los estudios incluidos requerían utilizar un diseño entre sujetos o un modelo mixto en donde la intervención hipnótica se comparaba con alguna condición control para el alivio de síntomas de ansiedad. De los 399 registros revisados, 15 estudios que incluían 17 ensayos de hipnosis cumplieron con los criterios de inclusión. Al finalizar el tratamiento activo, los 17 ensayos produjeron un tamaño de efecto medio ponderado de 0.79 ($p \leq .001$), indicando que el participante promedio que recibió hipnosis redujo su ansiedad más que aproximadamente el 79% de los pacientes control. En el seguimiento más largo, 7 ensayos mostraron un efecto medio promedio ponderado de 0.99 ($p \leq .001$), demostrando que el participante promedio tratado con hipnosis mejoró más que, aproximadamente el 84% de los participantes control. La hipnosis fue más eficaz en la reducción de ansiedad cuando se combinó con otras intervenciones psicológicas que cuando se utilizó como tratamiento único.

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