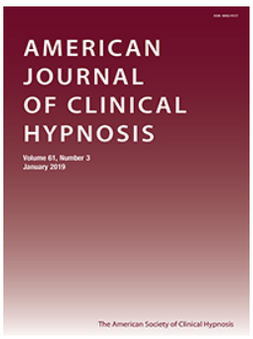

American Journal of Clinical Hypnosis

ISSN: 0002-9157 (Print) 2160-0562 (Online) Journal homepage: https://www.tandfonline.com/loi/ujhy20

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To cite this article: Leonard S. Milling, Keara E. Valentine, Hannah S. McCarley & Lindsey M. LoStimolo (2018) A Meta-Analysis of Hypnotic Interventions for Depression Symptoms: High Hopes for Hypnosis?, American Journal of Clinical Hypnosis, 61:3, 227-243, DOI: 10.1080/00029157.2018.1489777

To link to this article: https://doi.org/10.1080/00029157.2018.1489777

American Journal of Clinical Hypnosis, 61: 227–243, 2019

ISSN: 0002-9157 print / 2160-0562 online
DOI: https://doi.org/10.1080/00029157.2018.1489777

A Meta-Analysis of Hypnotic Interventions for Depression Symptoms: High Hopes for Hypnosis?

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This meta-analysis quantifies the effectiveness of hypnosis for treating the symptoms of depression. To be included in the meta-analysis, studies were required to use a between-subjects or mixed-model design in which a hypnotic intervention for depression was compared with a control condition in reducing depression symptoms. Of 197 records screened, 10 studies incorporating 13 trials of hypnosis met the inclusion criteria. The mean weighted effect size for 13 trials of hypnosis at the end of active treatment was 0.71 ($p \leq .001$), indicating the average participant receiving hypnosis showed more improvement than about 76% of control participants. The mean weighted effect size for four trials of hypnosis at the longest follow-up was 0.52 ($p \leq .01$), indicating the average participant treated with hypnosis showed more improvement than about 51% of control participants. These effect sizes are comparable to those associated with well-known psychological interventions for depression (e.g., Beck's cognitive therapy, interpersonal therapy) and suggest hypnosis is a very effective way of alleviating the symptoms of depression. Clinicians may wish to give serious consideration to hypnosis as a treatment option when working with clients and patients who are depressed.

Keywords: depression, hypnosis, meta-analysis, treatment effectiveness

Depression is a widespread and serious problem that can have severe impacts on affected individuals and those around them. Depression is typically characterized by sad affect, feelings of hopelessness, fatigue, lack of energy, anhedonia, trouble concentrating, as well changes in sleeping and eating habits (Kroenke, Spitzer, & Williams, 2001). Data from the National Health and Nutrition Examination Survey from 2013 to 2016 indicate that approximately 8.1% of U.S. adults age 20 and older have suffered from depression at some point in their lives (Brody, Pratt, & Hughes, 2018). This vast prevalence is not specific to the United States, as depression has been identified by the World Health Organization (WHO, 2017) as the leading cause of disability worldwide, affecting more than 300 million people.

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There are serious personal and social consequences related to depression, as well as major costs for society at large. An estimated 50.2% of adults with depression have reported some difficulty in work, home, or social functioning because of their depressive symptoms, and 30.0% have reported *extreme* difficulty (Brody et al., 2018). Depression is also related to higher rates of chronic disease and increased health care utilization (Pratt & Brody, 2014). In addition, depression is a contributing factor to suicide, which is ranked as one of the top 20 causes of death on a global scale (WHO, 2017). Finally, depression is a financial burden for the individual and society. For example, the estimated annual cost of care (including direct medical costs, suicide-related mortality costs, and indirect workplace costs) for patients with major depressive disorder was estimated to be approximately $210.5 billion in 2010 (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2015).

Psychological Interventions for Depression

A number of psychological interventions developed specifically for treating depression have proven to be very effective. For example, Beck's cognitive therapy for depression enables clients to identify patterns of distorted cognitions (i.e., arbitrary inference, selective abstraction, overgeneralization, magnification) and to replace those thoughts with more realistic ones (Beck, Rush, Shaw, & Emery, 1987). Behavioral activation therapy is grounded in the principles of operant conditioning and helps depressed individuals increase the amount of positive reinforcement they experience (Lejuez, Hopko, Acierno, Daughters, & Pagoto, 2011). Problem-solving therapy (Nezu, Nezu, & D'Zurilla, 2013) involves teaching clients the steps of solving problems and dealing with stressors: (1) clarifying the problem; (2) generating alternative solutions; (3) selecting the solution with the optimal anticipated outcome; (4) implementing the solution; and (5) evaluating the outcome. Finally, interpersonal therapy (Klerman, Weissman, Rounsaville, & Chevron, 1984) is a time-limited treatment concerned with the interpersonal issues which either cause a person to become depressed or which maintain depression. Many other forms of general psychotherapy have also been applied to the problem of depression, including psychodynamic psychotherapy and nondirective therapy.

Treating Depression With Hypnosis

Hypnosis has been shown to be a very effective intervention for pain (reviewed in Montgomery, DuHamel, & Redd, 2000; Patterson & Jensen, 2003), obesity (reviewed in Kirsch, 1996), smoking cessation (reviewed in Green, 2010; Green & Lynn, 2000); the nausea and emesis associated with chemotherapy (reviewed in Richardson, Smith, McCall, Richardson, & Kirsch, 2007), and psychosomatic disorders (reviewed in

Flammer & Alladin, 2007). Although there has been less empirical research on its other applications, hypnosis has been advanced as a promising intervention for depression (Kirsch & Low, 2013). Indeed, two prominent hypnosis scholars have developed hypnotic approaches specifically tailored to the treatment of depression.

Yapko (2010) has cogently articulated that hypnosis can be used in a variety of ways to treat depression, including (1) reducing symptoms; (2) accessing personal resources and building coping skills; (3) reframing; and (4) developing associational and dissociational strategies (e.g., shifting the focus from feelings to thoughts). According to this expert, the key tasks of the clinician are to help the depressed client develop positive expectations that things can change for the better, as well as to interrupt negative patterns of thinking, feeling, and behaving.

Alladin has developed a cognitive hypnotherapy for depression that utilizes a combination of Beck's cognitive therapy and hypnosis (Alladin, 2010; Alladin & Alibhai, 2007). The hypnotic elements of this intervention include (1) inducing relaxation; (2) offering ego-strengthening suggestions to increase self-esteem and self-efficacy; (3) expanding awareness of positive experience; (4) inducing positive mood; (5) countering problem thoughts, feelings, and behaviors through posthypnotic suggestions; and (6) training in self-hypnosis to augment what has been accomplished during treatment sessions.

To our knowledge, there has been only one empirical study of the effectiveness of either of these two hypnotic approaches for treating depression. Alladin and Alibhai (2007) demonstrated that their cognitive hypnotherapy was more effective than Beck's cognitive therapy alone in reducing the symptoms of depression and hopelessness. Indeed, the total number of empirical studies evaluating the use of hypnosis for treating depression has been limited. Approximately 10 years ago, Shih, Yang, and Koo (2009) identified six controlled studies in a meta-analysis of the effectiveness of hypnosis for treating depression symptoms. These investigators reported a mean effect size of 0.57 for the six studies, suggesting the average participant receiving hypnosis showed more improvement than about 72% of control participants.

The Current Study

In the 10 years since Shih and colleagues (2009) published their meta-analysis, a number of new studies of the use of hypnosis for treating depression symptoms have appeared. The purpose of the current investigation is to quantify the effectiveness of hypnosis for treating depression symptoms by conducting an updated meta-analysis of controlled studies of this intervention. Accordingly, we examined all studies in which hypnosis was compared with a control condition in treating the symptoms of depression. Because depression is such a serious and widespread condition, it is important to quantify the effectiveness of hypnosis for treating depression symptoms and to compare its benefits with well-known psychological interventions for this problem.

Method

Inclusion Criteria

To be included in this meta-analysis, studies were required to use a between-subjects or mixed-model design in which hypnosis was compared with a standard care, attention control, wait-list control, or no-treatment control condition in treating the symptoms of depression, and published in an English-language, peer-reviewed journal or appearing in Dissertation Abstracts International.

Search Strategy

The PsycINFO and PubMed (Medline) databases were searched by the third and fourth authors for abstracts meeting the inclusion criteria through the end of December 2017. For the PsycINFO database, the search terms were (hypnosis) AND (treatment or intervention or therapy) AND (effectiveness or efficacy or effective) AND (depression). For the PubMed (Medline) database, the MeSH terms were (hypnosis) AND (depression) AND (outcome studies). As seen in Figure 1, the two searches produced a total of 191 records. An additional six records were identified through other means (e.g., citations in key journal articles and dissertations). Of the 197 records, 10 were determined to be duplicates, leaving a total of 187 unique records. Of these, one record did not contain an abstract, leaving 186 records to be screened.

Screening

The abstracts of the 186 records were independently evaluated against the inclusion criteria by the third and fourth authors. Discrepancies in ratings were resolved by consensus. Of the 186 records, 179 were excluded. The reasons for exclusion were as follows: 37 abstracts were books or book chapters; 42 abstracts were case studies or a description of a treatment; 10 abstracts were editorials, commentaries, or book reviews; 24 abstracts were review articles; seven abstracts were not treatment studies; 10 abstracts utilized treatments that did not involve hypnosis; eight abstracts did not have depression symptoms as an outcome; 31 abstracts did not have a hypnosis treatment that focused on reducing depression; and four abstracts lacked a control condition. After eliminating these 179 records, 13 records remained for full-text evaluation.

Selection of Studies

All four authors conducted an in-depth review of the remaining 13 records by independently reading in full each of the articles and dissertations and evaluating them relative to the inclusion criteria. Discrepancies between raters were resolved by consensus. Three of the 13 articles and

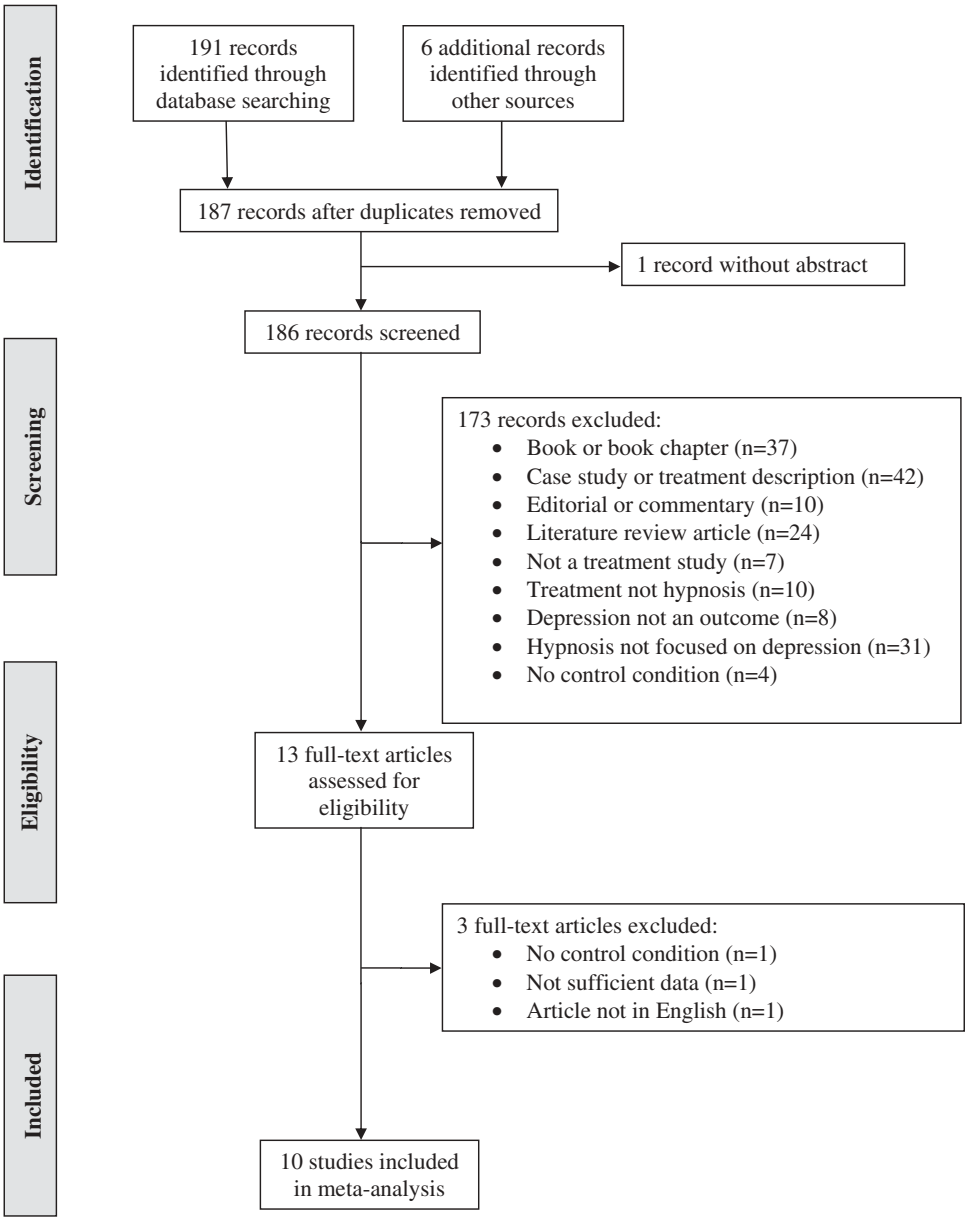

FIGURE 1 PRISMA flowchart.

dissertations were eliminated for the following reasons: one article lacked a control condition; one article did not have sufficient data to calculate an effect size; and one article was not in English. This left 10 articles and dissertations to be included in the meta-analysis.

Three of the 10 articles and dissertations contained two hypnosis treatments that were compared with a control condition (Gonzalez-Ramirez et al., 2017; Sudweeks, 1996; Van Sky, 1983). It is a common practice in hypnosis meta-analyses to utilize treatment rather than study as the unit of analysis (e.g., Kirsch, Montgomery, & Sapirstein, 1995; Montgomery et al., 2000). We elected to follow this practice, thereby producing 13 trials for inclusion in our meta-analysis. One dissertation contained two hypnosis interventions, but we determined that only one of the hypnosis treatments was focused on reducing depression (Swenson, 1985).

Data Abstraction

The 10 journal articles and dissertations meeting the inclusion criteria were read independently by the first and second author, and data were abstracted using a standardized coding sheet. Coding discrepancies were discussed and resolved by consensus. Abstracted data included (1) results by condition at pre, post, and follow-up (e.g., means, standard deviations, condition sizes) needed to calculate effect sizes and dropout rates; (2) whether participants were prescreened for depression; (3) type of control condition; (4) whether hypnosis was used as a stand-alone treatment or together with another psychological intervention; and (5) the relevant Cochrane Risk of Bias dimensions. Table 1 shows key characteristics of each of the 13 trials, including the dependent measure(s) of depression and a brief description of the hypnotic intervention.

Risk of Bias Assessment

The Cochrane Risk of Bias Tool was used to assess the methodological quality of each of the 13 trials (Higgins & Green, 2011). The following five domains were assessed: (1) sequence generation (i.e., the method of assignment to condition); (2) allocation concealment (i.e., potential influence of the researcher on assignment to condition); (3) incomplete outcome data at post (i.e., rate of attrition of participants at post); (4) incomplete outcome data at follow-up (i.e., rate of attrition of participants at follow-up); and (5) selective outcome reporting (i.e., reporting of all prespecified outcomes). Each trial was rated independently by the first and second authors as having a high risk, low risk, or unclear risk in each of the five domains using the Higgins and Green criteria. Discrepancies between the two raters were resolved by consensus.

Results

Data Synthesis

Using the method of Lipsey and Wilson (2001), an effect size was calculated for each of the 13 trials at post (i.e., at the end of active treatment). Four of these trials also

TABLE 1
Characteristics of Trials of Hypnosis in Meta-Analysis

Trial	*Prescreening for Depression*	*Control Condition*	*Measures of Depression*	*Description of Hypnotic Intervention*
Butler et al. (2008)	Yes	SC	Cornell, Hamilton	Practice positive affect and increase affect modulation
de Klerk et al. (2004)	No	SC	BDI, POMS-D	Suggestions for inner strength, relaxation, special place, and age progression
Gonzalez-Ramirez et al. (2017), #1[a]	Yes	AC	BDI	Hypnosis
Gonzalez-Ramirez et al. (2017), #2[b]	Yes	AC	BDI	Gestalt hypnosis
Guse et al. (2006)	No	WL	Edinburgh	Ericksonian and ego-state therapy, including seeding hope and optimism
Liossi and White (2001)	No	SC	HADS-D	Ego strengthening, including suggestions for self-efficacy
Lucas (1985)	Yes	WL	BDI	Cognitive therapy for depression plus suggestions for release of positive emotions
Sudweeks (1996), #1[a]	Yes	WL	BDI	Hypnosis targeting core depressive beliefs
Sudweeks (1996), #2[c]	Yes	WL	BDI	Cognitive therapy for depression plus adjunctive hypnosis
Swenson (1985)	Yes	WL	BDI	Ericksonian metaphors for mood elevation
Tracy (1986)	Yes	WL	BDI, VAS	Direct and indirect suggestions, metaphors, and stories for ego building
Van Sky (1983), #1[a]	Yes	AC	BDI	Suggestions to remove symptoms of depression
Van Sky (1983), #2[d]	Yes	AC	BDI	Hypnotic induction plus suggestions to counteract distortions in thinking

Note. SC = standard care control; AC = attention control; WL = wait-list control; Cornell = Cornell Dysthymia Rating Scale; Hamilton = Hamilton Rating Scale for Depression; BDI = Beck Depression Inventory; POMS-D = Profile of Mood States, depression subscale; Edinburgh = Edinburgh Postnatal Depression Scale; HADS-D = Hospital Anxiety and Depression Scale, depression subscale; VAS = Visual Analogue Scale.

[a]Hypnosis only; [b]Gestalt-hypnosis therapy; [c]cognitive therapy plus hypnosis; [d]hypnotic cognitive therapy.

incorporated a follow-up assessment after the end of active treatment, and an effect size was generated separately for each of these trials, utilizing the longest follow-up period. Effect sizes were calculated separately at post and follow-up because we thought the impact of hypnosis might be different at the end of active treatment compared with follow-up. Effect size was calculated as the mean difference at post (or follow-up) on depression between a hypnosis condition and a control condition divided by the pooled standard deviation (Cohen's *d*). Effect sizes were then corrected for small sample bias (Hedges' *g*; see Hedges & Olkin, 1985). Several trials utilized more than one measure of depression. For these trials, an effect size was calculated for each measure of depression and then averaged across all measures, thereby producing a single effect size for each of the 13 trials.

Several studies did not include complete information on the *n*s of each condition at pre, post, and follow-up. In Liossi and White (2001), 50 participants were randomly assigned to two conditions. We assumed that an equal number of participants were assigned to each condition. Lucas (1985) indicated that across three experimental conditions, 30 participants completed the study. It was therefore assumed that 10 participants in the hypnosis condition and 10 participants in the control condition took part in the study at post and follow-up.

Table 2 presents the combined *n* of the hypnosis and control conditions, corrected effect size, standard error of the effect size, confidence intervals, and significance test for each of the 13 trials at post. Effect sizes are positive if the hypnosis condition reduced depression more than the control condition and negative if hypnosis reduced

TABLE 2
Corrected Effect Sizes (ES) of Trials of Hypnosis at Post

Study	N	*Corrected ES*	*Standard Error of ES*	*Lower Limit*	*Upper Limit*	Z *Value*	p *Value*
Butler et al. (2008)	23	0.42	0.43	−0.42	1.26	0.98	.327
de Klerk et al. (2004)	50	0.78	0.30	0.19	1.37	2.60	.009
Gonzalez-Ramirez et al. (2017), #1	20	1.37	0.50	0.40	2.35	2.00	.046
Gonzalez-Ramirez et al. (2017), #2	20	1.03	0.48	0.10	1.97	2.15	.032
Guse et al. (2006)	45	0.28	0.30	−0.30	0.87	0.93	.352
Liossi and White (2001)	50	1.08	0.30	0.48	1.67	3.60	.000
Lucas (1985)	20	0.55	0.46	−0.34	1.44	1.20	.230
Sudweeks (1996), #1	30	0.93	0.38	0.17	1.68	2.45	.014
Sudweeks (1996), #2	30	1.40	0.41	0.60	2.20	3.41	.001
Swenson (1985)	20	0.52	0.45	−0.37	1.41	1.16	.246
Tracy (1986)	52	0.79	0.29	0.22	1.93	2.72	.007
Van Sky (1983), #1	30	0.16	0.37	−0.56	0.88	0.43	.667
Van Sky (1983), #2	30	0.30	0.37	−0.42	1.02	0.81	.418

Note. Corrected ES is Hedges' *g*.

depression less than the control condition. Cohen (1988) classifies effect sizes of .2 as small, .5 as medium, and .8 as large. According to this guideline, five effect sizes fell in the large range, four effect sizes in the medium range, and three in the small range.

Table 3 shows the combined *n* of the hypnosis and control conditions, corrected effect size, standard error of the effect size, confidence intervals, and significance test for each of the four trials at follow-up. Using Cohen's (1988) guideline, two of these effect sizes fell in the large range and one fell in the medium range.

Corrected effect sizes were weighted by the associated inverse variance weight for each trial separately at post and follow-up. The mean weighted effect size for 13 trials of hypnosis at post was 0.71 (SE = 0.10, 95% CI = 0.51 to 0.91), which was significant ($z = 7.10$, $p \leq .001$, two tailed). A mean effect size of 0.71 suggests that the average participant receiving hypnosis showed more improvement than about 76% of control participants at post. The mean weighted effect size for four trials of hypnosis at follow-up was 0.52 (SE = 0.18, 95% CI = 0.17 to 0.87), which was significant ($z = 2.88$, $p \leq .01$, two tailed). A mean effect size of 0.52 indicates the average participant receiving hypnosis showed more improvement than about 51% of control participants at follow-up.

A homogeneity test showed that the sample of 13 effect sizes at post was homogenous ($Q = 13.22$, $df = 12$, n.s.). Similarly, the sample of four effect sizes at follow-up was homogenous ($Q = 6.49$, $df = 3$, n.s.). These results suggest the variability of the effect sizes in the 13 trials at post and the four trials at follow-up was what would be expected from sampling error alone and that the effect sizes were not influenced by moderator variables.

Evaluation of Risk of Bias

On the dimension of sequence generation, one trial was judged to have a low risk of bias, eight trials to have an unclear risk of bias, and four trials to have a high risk of bias. These latter four trials did not use random assignment to condition. Similarly, on the dimension of allocation concealment, eight trials were determined to have an unclear risk of bias and five trials to have a high risk of bias. At post, 10 trials were evaluated as having a low risk of incomplete outcome data bias, one trial as having an unclear risk of

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*
Butler et al. (2008)	27	0.55	0.40	−0.23	1.33	1.38	.168
de Klerk et al. (2004)	50	0.97	0.30	0.38	1.56	3.23	.001
Guse et al. (2006)	41	−0.10	0.31	−0.71	0.51	−0.32	.749
Lucas (1985)	20	0.83	0.47	0.09	1.75	1.77	.077

Note. Corrected ES is Hedges' *g*.

bias, and two trials as having a high risk of bias. Of the four trials that collected follow-up data, three trials were determined to have a high risk of incomplete outcome data bias and only one trial as having a low risk of bias. Finally, all 13 trials were evaluated as having a low risk of bias on the dimension of selective outcome reporting bias. Figure 2 presents a Risk of Bias summary for the 13 trials in the meta-analysis. Because the homogeneity analysis was not significant, we did not perform a moderator analysis on the risk of bias dimensions.

Evaluation of Publication Bias

The *file-drawer* effect refers to the tendency for negative findings to go unpublished. To address this source of publication bias, a *fail-safe N* was calculated separately for our post and follow-up results using the approach 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 to one that is medium or small. To reduce the medium effect size of 0.71 obtained at post to a small effect size of .20, an additional 34 trials with an effect size of 0 would be needed. To reduce the medium effect size of 0.52 observed at follow-up to a small effect size of .20, an additional six trials with an effect size of 0 would be needed. Although it is conceivable that an additional six trials with an effect size of 0 at follow-up exist, it seems unlikely there are an additional 34 trials with an effect size of 0 at the end of active treatment.

Discussion

The findings of our meta-analysis show that hypnosis is a very effective treatment for reducing the symptoms of depression. We obtained a mean weighted effect size of 0.71 for 13 trials at the end of active treatment, indicating the average participant receiving hypnosis demonstrated more improvement than about 76% of control participants. Furthermore, we observed a mean weighted effect size of 0.52 for four trials at the end of follow-up, suggesting the average participant treated with hypnosis reduced depression symptoms more than about 51% of control participants. According to Cohen's (1988) guideline, effect sizes of 0.71 at post and 0.52 at follow-up fall within the medium range of magnitude, with the former approaching the large range.

Our results suggest that the efficacy of hypnosis in treating depression symptoms is comparable to that of other psychological interventions for this problem. For example, Cuipers and his colleagues compiled a large database of more than 149 controlled and comparative outcome studies of common psychological treatments for depression based on a series of meta-analyses of these interventions (see Cuijpers, van Straten, Warmerdam, & Andersson, 2008). Across 215 trials comparing some form of psychotherapy with a control condition in treating the symptoms of depression, Cuipers,

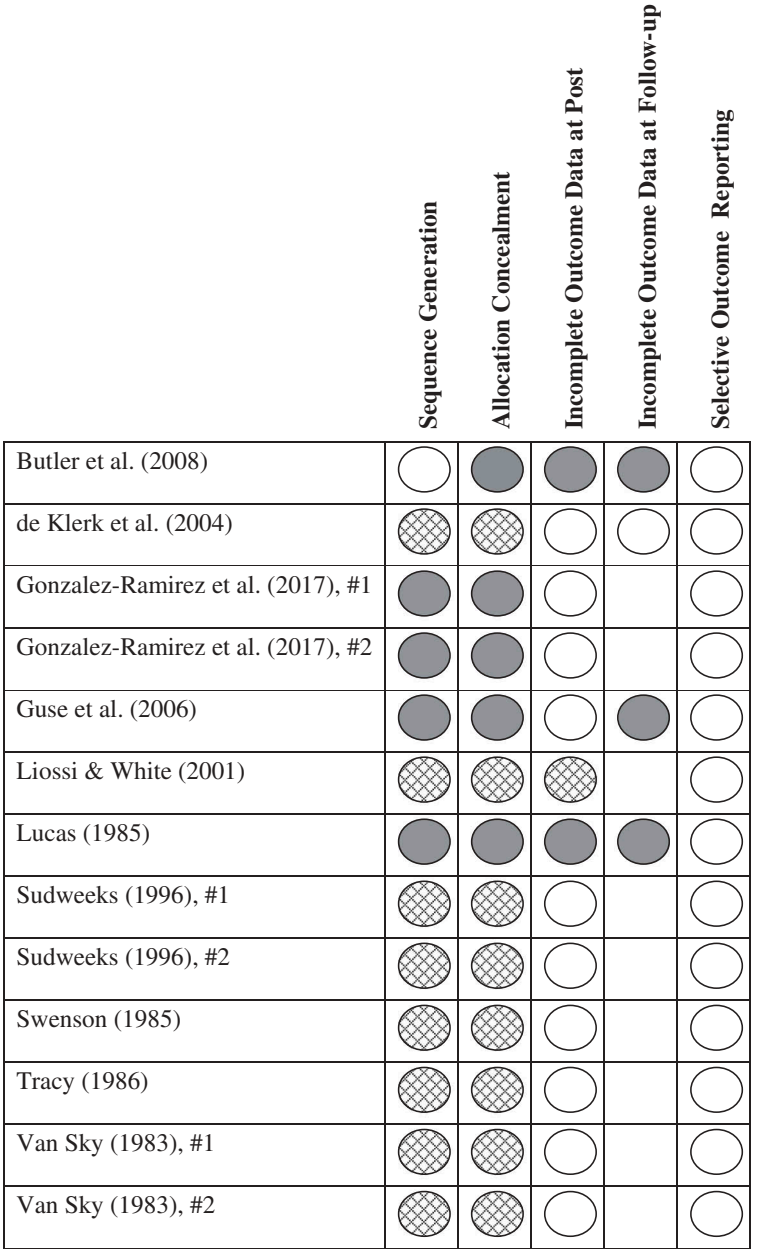

FIGURE 2 Risk of Bias summary for 13 trials of hypnosis.
Note. ◯ = low risk; ● = high risk; ⊘ = unclear risk.

Andersson, Donker, and van Straten (2011) observed an overall effect size of $d = 0.66$. Indeed, effect sizes of popular psychological interventions for depression consistently fell in the medium to large range, including cognitive behavioral therapy ($d = 0.67$), behavioral activation therapy ($d = 0.87$), problem-solving therapy ($d = 0.83$), interpersonal therapy ($d = 0.63$), nondirective supportive therapy ($d = 0.57$), and short-term psychodynamic psychotherapy ($d = 0.69$). Similarly, in a recent meta-analysis of the effectiveness of cognitive behavioral therapy for depression, Cristea et al. (2017) reported corrected effect sizes (i.e., Hedges' g) of 0.72 in 29 trials utilizing the Beck Depression Inventory and 0.79 in 19 trials using the Hamilton Depression Rating Scale as outcome measures.

Why utilize hypnosis as a treatment for depression in favor of other well-known psychological interventions for this problem? There are large individual differences in responding to hypnosis. These individual differences can be assessed with standardized measures of hypnotic suggestibility, consisting of a hypnotic induction and a series of test suggestions (e.g., Stanford Hypnotic Susceptibility Scale, Form C). On these measures, the majority of people respond to some but not most test suggestions and thereby fall in the medium range of suggestibility. A smaller number of individuals respond to most or all of the test suggestions, placing them in the high range of suggestibility. Likewise, a smaller number of individuals respond to few or none of the test suggestions and fall in the low suggestibility range.

In their seminal meta-analysis of hypnotically induced analgesia, Montgomery et al. (2000) reported an overall mean weighted effect size of 0.67. However, the impact of hypnosis on pain varied dramatically by level of hypnotic suggestibility. For individuals in the low suggestibility range, the effect of hypnosis on pain was negligible, with a mean weighted effect size of −0.01. For those in the medium suggestibility range, hypnosis yielded a mean weighted effect size of 0.64, which is classified as a medium effect according to Cohen's (1988) guideline. Finally, for those in the high suggestibility range, hypnosis produced a mean weighted effect size of 1.16, which is considered a large effect. In our meta-analysis, it was not possible to calculate effect sizes by level of suggestibility. However, based on the findings of Montgomery and his colleagues (2000), it seems reasonable to speculate that for individuals in the high range of suggestibility, the effect of hypnosis on depression symptoms may compare quite favorably with the effect of other popular psychological interventions for depression.

In our meta-analysis, we obtained an effect size of 0.71 for 13 trials at the end of active treatment, whereas Shih et al. (2009) previously reported an effect size of 0.57 for six trials of hypnosis in treating depression symptoms. Although these findings are fairly similar, there are at least three reasons that could account for discrepancies. First, in our meta-analysis, we incorporated seven journal articles and dissertations that did not appear in the earlier meta-analysis. Second, Shih et al. included one article appearing in a Japanese journal (Suzuki, 2003) and one article appearing in a Chinese journal (Wu, Lin, Wu, & Li, 2005) that we did not include in our meta-analysis because they

were not published in English-language journals. Of note, both of these studies appear to have produced individual effect sizes of less than 0.50. Finally, two of the dissertations included in Shih et al. (2009) each incorporated two hypnosis treatment conditions, but these investigators utilized only one hypnosis condition from each dissertation. In contrast, we elected to use trial rather than study as the unit of analysis. Despite these differences, our meta-analysis and the earlier meta-analysis by Shih et al. both argue that the overall effect of hypnosis on depression symptoms falls in the medium range of magnitude.

Research Implications

Our results clearly show hypnosis is an effective treatment for depression. However, none of the controlled trials included in our meta-analysis examined the psychological mechanisms that might explain how hypnosis reduces the symptoms of depression. Yapko (2001) has contended that one of the most important factors contributing to the effectiveness of hypnosis, particularly when used as a treatment for depression, is *expectancy*, or a client's belief that a procedure implemented by a clinician will produce therapeutic results. Kirsch and Low (2013) have posited that because hypnosis and antidepressant medications both work, in part, via the mechanism of expectancy, depression might be especially responsive to hypnosis. These experts were perhaps the first to point to a link between hypnosis and the hopelessness theory of depression.

According to Abramson, Alloy, and Metalsky (1989), *hopelessness depression* is a subtype of depression in which hopelessness is the direct cause of the symptoms of depression. Abramson et al. define *hopelessness* as the "expectation that highly desired outcomes will not occur or that highly aversive outcomes will occur coupled with the expectation that no response in one's repertoire will change the likelihood of occurrence of these outcomes" (p. 359). These scholars theorize any intervention that either reduces hopelessness or promotes hopefulness should be effective in treating hopelessness depression. Because hopelessness is an expectancy and hypnosis has been shown to reduce other problems via expectancy change, hypnosis may be an especially effective treatment for the kinds of depression caused by hopelessness. As such, expectancy may play an important role in explaining how hypnosis reduces the symptoms of depression, or at least the kinds of depression in which hopelessness plays a causal role.

To our knowledge, there have not been any studies evaluating whether expectancy is a mechanism that can explain how hypnosis reduces depression. Expectancy has consistently been shown to mediate the effect of hypnosis on both clinical pain (Montgomery et al., 2010; Montgomery, Weltz, Seltz, & Bovbjerg, 2002) and experimental pain (e.g., Milling, Reardon, & Carosella, 2006). In these studies, expectations for pain reduction generated by hypnosis partially accounted for the actual pain reduction that participants later experienced. A potentially fruitful line of future research

would appear to involve investigating the role of expectancy as a mechanism that can explain how hypnosis reduces the symptoms of depression.

Clinical Implications

The findings of our meta-analysis suggest hypnosis is a very effective intervention for alleviating the symptoms of depression. Therefore, clinicians should give serious consideration to hypnosis as a treatment option when working with depressed clients and patients. Our homogeneity analysis failed to show the presence of moderator variables in the effect of hypnosis on depression symptoms. Consequently, we cannot recommend particular modes of delivering hypnosis over other modes. Some clinicians may wish to utilize hypnosis as a stand-alone treatment for depression symptoms. Others may prefer to use hypnotic techniques in combination with established nonhypnotic interventions, such as Beck's cognitive therapy or interpersonal therapy. A third way that hypnosis could be used would involve providing an established nonhypnotic interventions in a hypnotic context by first administering a hypnotic induction and then relabeling the nonhypnotic intervention as hypnotic in nature. For example, problem-solving therapy could be relabeled "hypnotic problem solving" and the steps of the problem-solving process (e.g., identifying alternative solutions) could be relabeled as self-suggestions.

Limitations

The results of our homogeneity tests were nonsignificant and consequently we did not perform moderator analyses. Under a fixed-effects model, a nonsignificant homogeneity test indicates the dispersion of the 13 effect sizes at post around the mean weighted effect size of 0.71 was no greater than what would be expected by sampling error alone. That is, the individual effect sizes for the 13 trials of hypnosis all appear to have been estimating the same population effect size. However, the homogeneity test has limited statistical power when there are a relatively small number of effect sizes (Lipsey & Wilson, 2001). It is possible there was variability among the effect sizes in our meta-analysis from sources other than chance that could not be detected. Consequently, more controlled trials are needed to definitively ascertain whether moderator variables play a role in the effect of hypnosis on depression symptoms.

Conclusions

Hypnosis was once thought to be contraindicated in the treatment of depression (for a discussion of this issue, see Yapko, 1992, 2006). However, the findings of our meta-analysis suggest that hypnosis is a very effective intervention for reducing the symptoms of depression. Our results showed that the average participant receiving hypnosis

demonstrated more improvement than about 76% of control participants at the end of active treatment and about 51% of control participants at the longest follow-up. Our findings reveal that hypnosis is approximately as effective in treating depression symptoms as popular and well-established treatments, such as Beck's cognitive therapy, behavioral activation therapy, problem-solving therapy, and interpersonal therapy. More research is now needed on the psychological mechanisms that can explain how hypnosis reduces depression. Clinicians may wish to consider the variety of ways that hypnosis can be incorporated into the treatment process when working with clients and patients who are depressed. Hypnosis does indeed appear to offer some hope in treating the symptoms of depression.

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