Hypnosis, Hypnotizability, and Placebo

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Abstract

Dr. Raz’ speculations about the relation between placebo responsivity and hypnotizability are critically examined. While there is no generally accepted theoretical definition of hypnosis, there is a general consensus that hypnotizability can be reliably measured. In contrast, there seems to be a general consensus about a theoretical definition of placebo (including placebo effect, placebo response and nocebo). There is no widely accepted measure of individual differences in placebo responsivity. Various methodological considerations about how to examine the relation between placebo responsivity and hypnotizability are identified. Studies are identified which indicate that response to treatments which utilize adjunctive hypnosis are superior to placebo treatments. The only study which examined whether placebo responsivity was correlated with hypnotizability seems to indicate that they are only slightly related at best. The possibility that there may be such thing as a “good placebo responder (GPR)” is questioned, while the known clinical value of hypnotizability assessment is reaffirmed. Future directions for empirical research on the relation between placebo responsivity and hypnotizability are identified.

Keywords: Hypnosis, placebo, hypnotizability.

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The hypothesis that hypnosis is somehow related to placebo response is not new; (Baker & Kirsch, 1993; Barber, 1960; Hilgard & Hilgard, 1975; Kirsch, 1994; 1997; 1999; McGlashan, Evans & Orne, 1969; Shapiro, 1964a; 1964b; Spanos, Perlini, & Robertson, 1989; Spanos, Stenstrom & Johnson, 1988; Spiegel & Spiegel, 1978; 2004) nor does it seem controversial that both response to a placebo and response to hypnosis are contextually influenced (Barber, 1969; Barber & Glass, 1962; Beecher, 1956; Benham, Bower, Nash, & Muenchen, 1998; 1959; Council, Kirsch & Grant, 1996; Kirsch, 1985; 2004; Shapiro, 1964a; 1964b; Shapiro & Morris, 1978; Spanos, 1986; Spiegel & Spiegel, 1978). But, do “hypnosis and placebo share in phenomenology” (Raz, 2007, p. 29)?

Neither hypnosis nor placebo are primary treatment procedures (although a placebo may seem so from the patient point of view). However, being exposed to a hypnotic induction or a placebo may be associated with a positive therapeutic response (Frischholz, 1997; 2005/2006; 2007; Frischholz & Spiegel, 1983; Shapiro, 1964a; 1964b; White, Tursky & Schwartz, 1985). Some of these beneficial responses can be quite profound (Kirsch & Sapirstein, 1998; Kirsch, Moore, Scoboria & Nicholls, 2002; Spiegel & Spiegel, 1978; 2004). But, the fact that mere exposure to either is associated with a positive treatment effect does not mean that these effects are both caused by such exposure or that they are produced by the same underlying mechanism.

While there is no generally agreed upon theoretical definition of hypnosis (Araoz, 2005/2006; Barabasz, 2005/2006; Daniel, 2005/2006; Frischholz, 2005, 2007; Green, Barabasz, Barrett & Montgomery, 2005/2006; Hammond, 2005/2006; Heap, 2005/2006; McConkey, 2005/2006; Rossi, 2005/2006; Spiegel and Greenleaf, 2005/2006; Woody & Sadler, 2005/2006; Yapko, 2005/2006), there seems to be a good consensual agreement that individual differences in hypnotizability can be reliably measured (Hilgard, 1965; Spiegel & Spiegel, 1978; 2004). Ironically, in contrast, while there seems to be good theoretical agreement about defining the nature of a placebo effect (Beecher, 1959, Ensik, 1999; Moerman, 2002; Raz, 2007; Shapiro, 1964a; 1964b; Spiegel, 1997; Spiro, 1986), there is no consensual agreement about how to reliably measure individual differences in response to a placebo or if there is such a thing as a “good placebo responder” (Raz, 2007, p. 31).

Placebo Definitions

Spiegel (1997) summarized that “placebo” became an epithet to identify drugs and ministrations that pleased but could not be considered the cause of a specific benefit nor could be scientifically measured to explain effect” (Spiegel, 1997, p. 616). Nevertheless, Raz (2007) has reminded us of the distinction between a “placebo response” and a “placebo effect” (Fisher, Lipman, Uhenhuth, Rickels & Park, 1965). A “placebo response” is the change that occurs following administration of a placebo” (Raz, 2007, p. 30). In contrast, a “placebo effect is the difference between the placebo response and the changes that occur without the administration of a placebo” (Kirsch, 1985; 1997; Raz, 2007, p. 30). However, Raz (2007) does not include “nocebo” in his discussion of placebos and hypnosis.

Spiegel (1997) has characterized “nocebo...as the absence of conditions that promote placebo as well as direct insult” (Spiegel, 1997, p. 619). He also identified at “least three different ways in which the nocebo effect is activated: (1) negative messages from the health care environment, (2) negative messages from the patient’s social and psychological milieu, and (3) secondary gain” (Spiegel, 1997, p. 619). Spiegel’s argument is that negative, rather than
positive, treatment responses can also occur based on context specific expectancies. The same can probably be said of the “placebo effect.”

Another difference between “placebo response” and response to psychotherapy concerns the types of expectancies generated by these two different procedures. When given a placebo, a patient passively expects some type of positive treatment response. In contrast, when a patient commits to treatment with psychotherapy, there is an active expectancy created by the commitment to be a part of the therapeutic process.

Methodological Considerations

Control Groups vs Comparison Groups:
Raz (2007) has reminded us of the difference between contrasting a treatment to a no-treatment control group and contrasting different treatments to one another (i.e., different types of treatment comparison groups). He also notes that “real drugs, unlike placebos, have real side effects (e.g., nausea and dizziness)” (Raz, 2007, p. 30) and that “the more side effects the better the drug performs (Greenberg, Bornestein, Zborowski, Fisher and Greenberg, 1994)” (Raz, 2007, p. 30). Based on this proposition, it would be interesting to see if one could induce a more powerful placebo response in subjects who are a part of a placebo comparison group by suggesting that they may experience side effects such as nausea and dizziness (in other words a nocebo suggestion). If Dr. Raz’s above speculations are true, this might enhance the placebo effect (and disconfirm Dr. Spiegel’s definition of nocebo) because subjects should be experiencing more negative side effects as a result of nocebo. This would be an interesting empirical approach to further our understanding of placebo/nocebo.

Heterogeneity of Clinical Samples
Dr. Raz has reminded us that meta-analytic studies and single studies may be plagued by the heterogeneity of the clinical samples assigned to either the treatment, control or comparison conditions. For example, the current DSM-IV (American Psychiatric Association, 1994) distinguishes between different sub-types of Mood and Anxiety Disorders. It would be interesting to see if different treatments (e.g., drugs, psychotherapy, placebo) produce differential effects which can be related to diagnostic sub-types within a general diagnostic category.

I respectfully disagree that psychopathology would be a better “domain” to study placebo (or nocebo) effects than pain. There are already well developed and objective methods for studying pain in “normal” subjects (e.g., cold-pressor test; Hilgard & Hilgard, 1975; pupillary reaction; Walter, Lesch, Störhr, Grünberger and Guiterrez-Lobos, 2005/2006; tourniquet exercise; McGlashan, Evans & Orne, 1969).

One of the most common methods for simulating pathological conditions for study in an experimental setting (e.g., in a university setting using college students as subjects) has been to hypnotically induce negative/pathological conditions such as asthma (Anderson, Frischholz & Trentalange, 1988), happy and sad moods (Bower, 1981) and anxiety/guilt (Kihlstrom, 1979). Unfortunately, hypnotically induced pathological conditions do not seem to be the same type of pathology observed in actual patient samples (e.g., asthma; Anderson, Frischholz & Trentalange, 1988). In contrast, there does seem to be a good, but not perfect, correspondence between experimentally stimulated pain and actual clinical pain (Hilgard & Hilgard, 1975).
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“Hypnotic Effects” vs. “Placebo Effects”

A number of studies have examined whether treatments for medical problems (e.g., headaches and warts) which employed adjunctive hypnosis produced better treatment outcomes when compared to other treatments including a comparison group and/or control group.

Headaches

Spanos, Liddy, Garrard, Tirabasso & Hayword (1993) compared the effect of imagery based hypnotic treatment, a placebo treatment (subliminal reconditioning) and a “no treatment” control for severity of headaches among chronic headache sufferers. The two treatment groups (hypnosis vs. placebo) each received four treatment sessions while the controls did not. All subjects self-monitored their headache activity during baseline and follow up periods. Control subjects reported no significant changes in headache activity from baseline to eight week follow up. In contrast, both the hypnotic and placebo subjects reported significant and similar decrements in headache pain from baseline to follow up. The experimenters also found that the magnitude of headache reduction was unrelated to positive treatment outcome. Unfortunately, hypnotizability was not assessed in the Spanos et al (1993) study. This made it impossible to detect any correlation between hypnotizability and placebo responsivity in either of the two treatment groups.

Warts

Spanos, Stenstrom & Johnston (1988) reported two studies wherein they compared treatments for warts with adjunctive hypnosis and various placebo and control groups. In study 1, subjects administered an imagery-based treatment with adjunctive hypnosis exhibited significantly more wart regression than either the placebo comparison treatment or the no treatment control condition. This finding indicates an significantly better treatment response for subjects exposed to a hypnotic condition than those given a placebo condition.

In study 2, (Spanos, Stenstrom & Johnston, 1988) subjects were given the same suggestion with hypnosis and without hypnosis for wart regression. A no-treatment control group was also utilized. The two treatment groups (hypnotic vs. non-hypnotic) showed significantly more wart regression than the no-treatment control group. This indicates a suggestion-specific effect regardless of whether or not subjects received or did not receive hypnosis. Hypnotizability was measured, and did not correlate significantly with wart regression. Because no placebo comparison group was included in the experimental design in study 2, it was impossible to determine if there would have been any significant correlation between hypnotizability and placebo responsivity.

Spanos, Williams and Gwynn (1990) studied subjects with warts on their hands and/or feet. Subjects were randomly assigned to one of four conditions: 1) a hypnotic suggestion treatment; 2) a topical salicylic acid treatment; 3) placebo treatment; and 4) a no-treatment control group. At 6 week follow up, only subjects in the hypnotic suggestion treatment evidenced significant wart regression compared to the no-treatment controls. This replicates the finding of Spanos, Stenstrom & Johnston (1988), whose treatments with adjunctive hypnosis achieved significantly more wart regression than subjects in a placebo condition. Unfortunately, hypnotizability was not assessed in this study so it was impossible to detect any potential correlation between hypnotizability and placebo responsivity.
The Value of Hypnotizability Assessment

Raz stated that “identifying highly hypnotizable individual may be of limited interest” (Raz, 2007, p. 29). Again, I respectfully disagree for several reasons. The importance of assessing hypnotizability is paramount to understanding the nature of hypnosis (Hilgard, 1965). There is general consensus about this fact as almost all empirical studies that evaluate competing theories of hypnosis utilize some type of hypnotizability measure in their experimental design (Frischholz, 2005; 2007).

In addition, the Spiegels have summarized the clinical relevance of hypnotizability assessment in making a differential clinical diagnosis, selecting a particular type of treatment intervention and predicting personality styles (Spiegel & Spiegel, 1978; 2004). For example, a recent study on the treatment of pain using a non-hypnotic intervention found that the amount of observed pain reduction correlated .55 with hypnotizability scores assessed after the treatment intervention had been administered (Appel & Bleiberg, 2005/2006; Frischholz, 2005/2006). A similar finding was observed in another non-hypnotic (i.e., acupuncture) treatment of pain (Katz, Kao, Spiegel & Katz, 1974). Again, a correlation of .50 was observed between amount of pain reduction and hypnotizability as assessed by the Spiegel Eye Roll sign (Hilgard & Hilgard, 1975; Spiegel & Spiegel, 1978; 2004). In other words, hypnotizability assessment significantly predicted the amount of pain reduction achieved using non-hypnotic treatment (Frischholz, 2005/2006; 2007). Other clinical studies have demonstrated that hypnotizability assessment predicts treatment outcome for smoking (Spiegel, Frischholz, Fleiss & Spiegel, 1993) and flying phobia (Spiegel, Frischholz, Maruffi & Spiegel, 1981) when using a cognitive restructuring intervention with adjunctive hypnosis.

Hypnotizability and Placebo Responsivity

While it seems likely that placebo responsivity variance can be theoretically explained by various expectancy theories of human responses (Kirsch, 1985; Lynn & Rhue, 1991), the same cannot always be said for hypnotizability. For example, when hypnotizability modification was attempted using different types of social learning hypnotic inductions compared to sleep-trance inductions (Katz, 1979), the majority of dependent variable variance was explained by baseline suggestibility scores compared to social learning hypnotic induction treatment conditions (Frischholz, Blumstein & Spiegel, 1982). In other words, trait variance predicted more dependent variable variance than expectancy-based social learning treatments.

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The classic study designed to detect whether there was a placebo factor in hypnosis was conducted by McGlashan, Evans and Orne (1969). They used a tourniquet exercise method to induce experimental pain. This involved having a tourniquet placed on subjects and having them squeeze a bulb to pump water to increase the pressure of the tourniquet. Both time and amount pumped were measured and subjective ratings of pain were obtained when subjects first reported experiencing pain (pain threshold) and then when it hurt so bad that they could not pump anymore (pain tolerance). The experimental conditions included a normal control group without hypnosis, hypnotic analgesia and a placebo condition. Hypnotizability was also assessed.

Hilgard and Hilgard (1975) summarized the results as follows: “1. For subjects insusceptible to hypnosis, some pain reduction may be achieved through hypnotically suggested analgesia, but it will correspond to a reduction by placebo. 2. For subjects highly
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susceptible to hypnosis, pain reduction through hypnotically suggested analgesia is far greater than by placebo. For these subject, the average placebo response is *negligible or even negative.*” (Hilgard & Hilgard, 1975; italics added). Thus, in the only study that directly addressed the issue of the relation between hypnotizability and placebo responsivity, no significant correlation was found. Perhaps other types of waking suggestibility (Evans, 1967) would be better predictors of placebo responsivity (Binet’s Progressive Weights; Evans, 1967; Hilgard & Hilgard, 1975).

**Conclusion**

In summary, while no generally accepted theoretical definition of hypnosis exists, there is broad agreement that individual differences in hypnotizability can be reliably measured. In contrast, there seems to be a general theoretical consensus about the definition of placebo effect, placebo responsivity and nocebo. Nevertheless, there is generally no accepted measure of individual differences in placebo responsivity or explanations for why they exist. Some empirical studies have demonstrated that responsivity to treatments which utilize adjunctive hypnosis are significantly better than responsivity to placebo treatments. The value of hypnotizability assessment in making a differential diagnosis, selecting an effective treatment intervention and predicting personality traits has been empirically established. The only study which directly assessed whether there was a significant correlation between placebo responsivity and hypnotizability indicated that they are tangentially related at best. Treatments for specific health problems which utilize adjunctive hypnosis are just becoming empirically validated (Alladin & Alibhai, 2007; Alladin, Sabatini & Amundson, 2007; Brown, 2007; Frederick, 2007; Golden, 2007; Hammond, 2007; Lynn & Cardena, 2007). Likewise, whether or not there is such a thing as a “good placebo responder” needs to be empirically verified and a consensually validated operational method for reliably measuring individual differences in placebo responsivity must be developed. Dr. Raz is leading the path towards this goal and I commend him for forcing the field of professional hypnosis to think seriously about the issues he has raised.

**References**


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