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## Intentions to use Hypnosis to Control the Side Effects of Cancer and its Treatment

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### Abstract

Evidence suggests that hypnosis is an effective intervention for reducing distress, pain and other side effects associated with cancer and its treatment. However, hypnosis has failed to be adopted into standard clinical practice. This study (n=115) investigated overall intentions to use hypnosis to control side effects of cancer and its treatment, as well as demographic predictors of such intentions among healthy volunteers. Results suggest that the vast majority of patients (89%) would be willing to use hypnosis to control side effects associated with cancer treatment. Mean intention levels did not differ by gender, ethnicity, education or age. These results indicate that in the general public, there is a willingness to consider the use of hypnosis, and that willingness is not determined by demographic factors. This broad acceptance of hypnosis argues for more widespread dissemination.

### Keywords

Hypnosis; cancer; side effects; intentions

### Introduction

The efficacy of hypnosis as a means to control the side effects associated with cancer and its treatment is supported by a wealth of empirical evidence (Montgomery et al., 2007; Montgomery, DuHamel, & Redd, 2000; Montgomery, Weltz, Seltz, & Bovbjerg, 2002; Richardson et al., 2007; Schnur, Kafer, Marcus, & Montgomery, 2008; Spiegel & Bloom, 1983). For example, hypnosis has been shown to significantly decrease pain, nausea, fatigue, discomfort, and emotional distress in breast cancer surgery patients (Montgomery et al., 2007) and the addition of hypnosis to group therapy significantly reduced pain in women with metastatic breast cancer as compared to group therapy alone (Spiegel & Bloom, 1983). Despite over 30 years of documented clinical application of hypnosis to those affected by cancer in the United States (Simonton, Matthews-Simonton, & Creighton, 1978) and a growing literature on the effectiveness of hypnosis to control side effects of cancer and its treatment, hypnosis has not entered into standard care for oncology patients. The use of hypnosis among the general United States population is only 1.8% (Barnes, Powell-Griner, McFann, & Nahin, 2004). Low use in cancer patients is also common. For example, in a sample of 968 cancer patients, not one patient indicated use of hypnosis for symptom control (Fouladbakhsh, Stommel, Given, & Given, 2005). In a second study of cancer patients, Zaza, Sellick and Hillier (2005) found that only 13 of 292 cancer patients used or were using hypnosis. Moreover, 26% of those patients were unaware of the potential use of hypnosis associated with cancer treatment, and 19% were skeptical about hypnosis.

Literature on complementary and alternative medicine (CAM) in general, and on hypnosis in particular, suggest that individual difference factors, such as gender, race/ethnic group, education level, and age may influence intentions to use hypnosis to control the side effects of cancer and its treatment. Each is discussed in turn below.

## **Gender**

Previous research has found that women were more likely to use CAM both in the general population (Bishop & Lewith, 2010; Goldstein et al., 2005; Graham et al., 2005) and in patients with cancer (Fouladbakhsh et al., 2005; Patterson et al., 2002; Verhoef, Balneaves, Boon, & Vroegindewey, 2005). With regard to hypnosis in particular, there is less research. However, women's attitudes towards hypnosis have been more positive than men's; women are less likely to view hypnosis as related to mental instability (Green, Page, Rasekhy, Johnson, & Bernhardt, 2006; Spanos, Brett, Menary, & Cross, 1987). Therefore, Hypothesis 1 was that women would not have higher levels of intentions to use hypnosis as a means to control the side effects of cancer and its treatment than men.

## **Race/ethnicity**

In healthy samples, Graham et al. (2005) found that both overall CAM (excluding prayer), and hypnosis, were used more frequently by Whites when compared to Hispanics and Blacks. In the context of cancer, studies have reported little or no association between race/ethnicity and CAM use (Verhoef et al., 2005). Thus, Hypothesis 2 was that race/ethnicity would not affect intention to use hypnosis, and in particular, that Whites would not have higher levels of intentions to use hypnosis than other groups.

## **Education**

CAM use has been positively associated with a higher level of education in the general population (Bishop et al., 2010; Green et al., 2006; Wolsko, Eisenberg, Davis, & Phillips, 2004). Verhoef (2005) also found that higher levels of education were associated with CAM use in cancer patients. Hypothesis 3 was that participants with higher levels of education would not have higher levels of intentions to use hypnosis than participants with lower levels of education.

## **Age**

There is no clear consensus on how age relates to CAM use (Bishop et al., 2010). Some studies find that there is a direct positive correlation (e.g., Bausell, Lee, & Berman, 2001), and others report a negative correlation (e.g., Shmueli & Shuval, 2004). In the context of cancer, younger cancer patients tended to use CAM more than older cancer patients (Patterson et al., 2002; Verhoef et al., 2005). Hypothesis 4 was that younger participants would not report higher levels of intentions to use hypnosis than older participants.

In summary, we planned to assess overall intentions to use hypnosis to control the side effects of cancer and its treatment, as well as to explore the influence of demographic factors on such intentions.

## **Method**

### **Participants**

One hundred and sixty adults (age 18 and older) from the general population in a large metropolitan area hospital agreed to take part in the anonymous study. Thirteen participants were excluded from the study because they had a previous history of cancer and 32 were excluded due to missing data. This resulted in 115 participants included in the final study.

Participants' age ranged from 18 to 79 years ( $M = 36.67$ ,  $SD = 12.37$ ) and 70% were female. Forty-eight percent of the sample described themselves as White, 17% as Asian, 15% as Black, 15% as Hispanic, and 5% as Other. Seven percent of the sample had partially completed or completed a high school education, 18% completed some college work, 31% were college graduates and 44% had partially completed or completed graduate/professional school.

## Measures

**Intentions to use hypnosis**—A questionnaire was developed for the purposes of this study to evaluate participants' intentions to use hypnosis. Hypnosis was explained as a means to “relax, imagine pleasant scenes, and take advantage of suggestions for positive health outcomes and well-being.” Participants were asked to rank on a scale of 0 (*not at all likely*) to 5 (*extremely likely*) how likely they would be to use hypnosis to control the side effects of cancer and its treatment if they were to be diagnosed with cancer.

**Demographics**—Demographic items assessed gender, age, race/ethnic group, education, and cancer history.

## Procedure

Participants were recruited from a public area in a large metropolitan hospital. Potential participants were told that the purpose of the research was to investigate people's perceptions of CAM interventions. Individuals were provided with a small token of appreciation for taking part in the study (i.e., candy). To be included, participants had to be able to speak and read English and had to be over age 18. Those participants who indicated a history of cancer on the questionnaire were later excluded from analysis. All measures and procedures for this study were approved by the Institutional Review Board.

## Results

First, intentions to use hypnosis were dichotomized into yes (greater than zero) or no (zero), in order to determine overall willingness to try hypnosis. Results indicated that 89% of all participants reported that they would be willing to use hypnosis to control side effects of cancer and its treatment. Chi-square tests revealed no significant differences due to gender ( $p = .50$ ), ethnicity ( $p = .21$ ), or education ( $p = .84$ ). Next, we examined mean levels of intentions as a potentially more sensitive method for detecting statistical differences (MacCallum, Zhang, Preacher, & Rucker, 2002; Royston, Altman, & Sauerbrei, 2006). Mean overall intention to use hypnosis was 3.16,  $SD = 1.68$ , which was significantly greater than zero [ $t(114) = 20.17$ ,  $p < .001$ ].

Hypothesis 1, that women would not have higher levels of intention to use hypnosis as a means to control the side effects of cancer and its treatment than men was not disconfirmed. An analysis of variance (ANOVA) found that gender was not associated with levels of intentions to use hypnosis [ $F(1, 113) = .18$ ,  $p = .67$ ];  $ES = 0.08$ ] (Table 1).

To evaluate Hypothesis 2, ethnicity was entered as a predictor of intentions to use hypnosis. In this ANOVA model, ethnicity did not significantly influence intentions to use hypnosis [ $F(4, 110) = 1.12$ ,  $p = .35$ ];  $ES = .40$ ]. Thus the null hypothesis, that ethnicity would not influence intentions to use hypnosis as a means to control the side effects of cancer and its treatment, was supported.

Hypothesis 3, that participants with higher levels of education would not have higher levels of intentions to use hypnosis than those with lower levels of education, was also not

rejected. Participants were divided into three groups. Group 1 included 29 participants who had some college education or less. Group 2 included 36 participants who had earned a college degree. Group 3 included 50 participants who had post graduate education. Education level failed to predict intention to use hypnosis using an ANOVA test [ $F(2, 112) = 0.28, p = .76; ES = .14$ ].

To evaluate Hypothesis 4, that younger participants would not report higher levels of intentions to use hypnosis than older participants, participants' age was entered as a predictor in an ANOVA model. Age was not associated intentions to use hypnosis to control side effects of cancer and its treatment [ $F(1, 113) = 1.26, p = .27; ES = .21$ ].

## Discussion

The vast majority of participants indicated a willingness to try hypnosis to control side effects of cancer and its treatment. Furthermore, intentions to use hypnosis were not related to gender, ethnicity, education, or age. These results support the position that hypnosis interventions in the cancer setting are likely to be acceptable to a broad spectrum of patients. Given the clinically beneficial effects of hypnosis to control side effects in the cancer setting (e.g., Lang et al., 2006; Montgomery et al., 2007), the stage appears to be set for broader application of hypnosis.

As with any study, the present study has its limitations. First, it is possible that a larger sample size may have revealed associations between intentions to use hypnosis and gender, ethnicity, education or age. While it is impossible to rule out this possibility, effect sizes for gender, education and age were all in the small range, and the effect size for ethnicity was in the small to medium range (Cohen, 1992). Although these results did not support that demographic factors would influence intentions to use hypnosis, future work may wish to replicate and extend these findings. However, given the present results, it would seem that demographic factors are unlikely to play a major role. Second, there is likely to be a gap between intentions and actual use of hypnosis, as there is with any behavior (Ajzen & Fishbein, 1980; Ajzen & Madden, 1986; Weinstein, 1993). Future longitudinal studies would be needed to fully establish the link from intentions to use of hypnosis. Third, further research should explore if the interest in hypnosis varies within individuals affected by cancer based on factors such as stage of disease or treatment.

In conclusion, the present study is consistent with the view that the general public is interested and open to use of hypnosis to control side effects associated with cancer and its treatment. The next step is to meet demand with better dissemination and implementation of empirically validated hypnosis interventions in the cancer setting.

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**Table 1**

## Intentions to Use Hypnosis for Cancer Control by Demographic Factors

	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>
Gender			
Male	35	3.26	1.77
Female	80	3.11	1.65
Race/Ethnicity			
White	55	3.40	1.44
Asian	20	2.50	2.01
Hispanic	17	3.00	1.84
Black	17	3.29	1.79
Other	6	3.17	1.72
Education			
< College education	29	2.97	1.72
Graduated College	36	3.17	1.75
> College education	50	3.26	1.63