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Hypnosis: A brief review of current Research

Alexander J Shadikhan

Psychiatric Counselor, California Coast University, United States

***Corresponding Author:** Alexander J Shadikhan, Psychiatric Counselor, California Coast University, United States; Email: ashadikhan@hotmail.com

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Abstract

Hypnosis became of interest to the scientific community with a renewed interest in the mind-body connection and an attempt to find a way to curb rising drug costs [1]. Despite its many criticisms including stigma attached to its stage history [2] and lack of a structurally sound model [3] it has become a formidable tool for treating various psychological issues. To understand hypnosis or hypnotherapy we must explore how it functions and the changes in brain function that occur in the patient during the process. Furthermore, an understanding of inherent characteristics of the individual are present for these changes to occur. What is known is that there is greater focus on the internal environment as opposed to the external during induction [4]. The role of increased theta wave activity, oxytocin, Gaba, and increased activity in the dorsal anterior cingulate cortex [5] cannot be overlooked due to its ability to produce a relaxed and a calm state. Hypnosis is perhaps a more complex therapy than we realize, often incorporating steps used in other therapeutic processes and that can often be used independently. The problem then arises explaining and relating these factors to each-other within a single model. For the most part, we have a clear understanding that it gives desired results when used to treat various psychological issues, even if we are not completely sure of all of the mechanisms and pathways involved.

Keywords: Hypnosis; Hypnotherapy.

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Interest in hypnotherapy as an alternative mode of treatment began with an interest in the mind-body questions at the of the turn of the century. To say the least, it had become a consideration by the medical profession to curb the rising costs of drugs and often producing similar results [3]. Its use, none the less was limited and often minimized due a misunderstanding in the medical profession stemming from its stage past and an overwhelming consensus that public opinion was skeptical about its use in the

scientific community [2]. However, since then its use as a therapeutic tool has been found to be affective in dealing with many disorders ranging from PTSD to anxiety. Research in the last decade has found that brain function changes producing, at times very dramatic, changes in overt behavior and thought patterns. However, despite these advances not everything is known about the hypnotic process. The basic argument against hypnosis stem from the fact that it has no clear model to explain how it functions and no complete

understanding of specific pathways that are involved [3]. For the most part, hypnosis does not seem to be any easy process due to its incorporation of various steps such as deep breathing, visualization and focusing of attention to name a few. These steps can be considered a therapeutic tool unto itself and can function independently. In hypnotherapy these tools work together to result in a positive outcome. One thing is certain that in order to understand the wholistic effect of hypnotherapy we have to understand what takes place in the process with the individual.

To understand the process of hypnosis one begins by taking into consideration the specific characteristics of the individual. Most studies tend to suggest that the highly susceptible individual is prone to be more trusting and likely to be influenced by suggestion when compared to non-susceptible individuals [6]. Depending on the technique used, the process of induction begins with conscious relaxation and the use of visualization to allow the subject to focus on internal concepts. In a study by [4], it was suggested that as the trance becomes deeper, there is a decrease in influence of the external environment and increase in focus on self- concepts as exhibited by increased connectivity between the left dorsolateral prefrontal cortex also known as left DLPC (responsible for executive functions of the brain) and the left dorsal anterior cingulate cortex also known as dACC (responsible for the autonomic functions, emotions, empathy and decision making). This interaction creates both physiological and chemical changes in the brain as it continues during process of hypnosis. Previous PET studies have suggested that there is increased blood flow to these areas and an increase in both the oxytocin and GABA levels, as surmised by [5]. This increase can be responsible for decreased anxiety, changes in perception and an overall feeling of well-being. Due to the nature of this interact, this relaxed atmosphere allows for learning and dissemination of issues that had become a hindrance to the individual. Induction and process of verbal direction by the therapist

during this process seems to guide the subject to the desired goals.

Most studies indicate that in the process of induction and visualization is important in deep meditative states. [4], noted that there are indications that induction is a key component during hypnosis and likely inhibits the mind from wandering. Furthermore, it has been found that the mind is also capable of modifying a given stimuli in response to suggestive words by a therapist [7]. Studies also note that there was an increase in beta waves activity indicating direct involvement of the frontal and occipital lobes suggests an increase alertness during induction [6]. Even though theta waves become more prominent the deeper one goes in these trance states [2] beta waves are conversely more common during waking states. There is an indication that learning and acquisition do occur during this process. [8]. Noted that hypnosis had a profound effect in procedural based learning by decreasing reliance on the frontal lobe and increasing stratum-based learning. Taken together, verbal suggestion during induction seems to be necessary to inwardly direct the brain activity during trance states and presence of beta waves makes it clear that the mind is alert even though it is at a different level of consciousness. Verbalizing events back to the therapist clarifies and consolidates information for the subject. The resulting changes that occur during trance states usually manifest themselves in overt behavior, emotional responses, and changes in thought patterns [3].

Hypnotherapy, in sum, does initiate increase chemical and physiological activity resulting in a great deal of effectiveness in restructuring of perceived emotional stressors, mitigating changes in behavior, improvement in problem solving capabilities to name just a few [2]. More pertinently, through the process of visualization through induction it creates a change in the individual's capacities, helps to achieve the desired goals and outcomes. However, the problem of trying to create a model is more complex due in part of the various intermediary steps involved in

hypnotherapy. In all, one must consider the role of all individual techniques employed in combination, as well as individual characteristics of the subject used and how they connect with each other. In addition, one must consider initial variations in the technique of induction upon a given subject. Seeking a model or framework would require a thorough understanding of both physiological and psychological mechanisms occurring before, during and after the process. Despite the many known factors, we will have to patiently wait for research to supply us with more answers to the allusive questions related to the specific pathways used during this process.. For now, we have to accept the fact that it produces change as stipulated by many studies over the course of decades.

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