MEDICAL APPLICATIONS OF HYPNOTHERAPY WITH CHILDREN

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Introduction

A brief historical account of clinical hypnosis

The use of hypnotic-like techniques with children goes back to ancient times. Both the Old and New Testaments contain accounts of ill children responding to healing methods based on suggestion and faith (I Kings XVII: 17-24; Mark IX: 17-27). Children in primitive cultures have employed trance phenomena initiation rites and other ceremonies (Olness and Kohen, 1996).

The modern history of hypnosis begins with Franz Anton Mesmer (1734-1815), and Austrian physician whose interest in the healing power of magnetic influence was a logical extension of attention to magnetic forces among astronomers and physicists of that time. In 1766, Mesmer wrote a dissertation entitled *The Influences of the Planest on the Human Body* (cited in Tinterow, 1970). During the next decade, Mesmer developed his theory of animal magnetism. Briefly, the theory held that all objects in the universe are connected by and filled with a physical fluid having magnetic properties. When the fluid is out of balance in the human body, disease occurs. Certain techniques can be employed to restore the fluid to proper equilibrium and thus heal the patient. Mesmer's techniques included staring into patient's eyes and making various "hand movements" over their bodies, using his own "magnetic influence" to promote a cure. While living in Vienna, Mesmer (Tinterow, 1970) reported his use of animal magnetism to cure several patients, including children and adolescents. Through details of this methods with specific patients are sketchy, verbal instructions and suggestions seem to have been minimized in favor of the "hand movements" that supposedly restored the patient's own magnetic fluid to proper balance.

With time Mesmer became discouraged by his colleagues' repeated charges that animal magnetism was no more than quackery. In 1778, he moved to Paris and in 1779 published his famous *Dissertations on the Discovery of Animal Magnestim* but the charges of quackery will continue and he eventually left Paris. "Mesmerism" continued to flourish in the hands of his disciples, especially Charles d'Eslon.

The Franklin Commission

In 1784, King Louis XVI appointed a commission to investigate mesmerism and, particularly, the claims of the disciple d'Eslon (Tinterow, 1970). The president of the commission was Benjamin Franklin, then the American Ambasssador to France. After several investigations, the commission rejected the theory of animal magnetism and concluded that the results of these and other experiments "are uniform in their nature, and contribute alike to the same decision. They authorize us to conclude that the imagination is the true cause of the effects attributed to the magnetism".

Much later James Braid, a Scottish surgeon will coin the term "hypnotism" to the techniques of eye fixation and suggestion (from the Greek Hipnos, meaning sleep), making reference to a sleep like state in which a subject was responding to a series of external stimuli (Lankton and Lankton, 1983).

The beginning of child hypnotherapy in North America

The first known publication concerning child hypnosis in a major American journal was a paper in Science entitled "Suggestion on Infancy" (Baldwin, 1891, cited in Olness and Kohen, 1996). The author discussed the idea that the rise of interest in hypnosis had

opened the way for increased understanding of infant behavior beyond mere physiological or reflex reactions. Such behavior could now be understood in terms of environmental influences, especially what he called *ideomotor suggestions.* For example, he described his use of reward and punishment to extinguish scratching behavior in a 3-month-old infant. He also discussed the child's development of imitative behavior, beginning at about 8 months. Baldwin did not use hypnosis per se but, rather, understood the possibility of understanding hypnotic phenomena as a point of departure for the study of consciousness (E.R. Hilgard, 1977).

Later on, in 1933 Clark Hull will publish his book on hypnosis and suggestibility in which he presented the work of Milton H. Erickson, M.D. Erickson himself, would later become the most prominent figure in clinical hypnosis both in the United States and internationally as well. His work in pediatric hypnosis, although not extensive, was an exceptional departure from the traditional main stream in hypnosis application.

In summary, early reports of hypnotherapy with children were primarily anecdotal, often in the context of emotional appeals to support or refute current theories and speculations about various aspects of human behavior. Nevertheless, by the end of the 19th century, those who had studied the field carefully already knew that children were suitable hypnotic subjects, that the peak of hypnotizability occurred in middle childhood, and that hypnotic techniques were applicable to a wide variety of childhood medical and psychological problems.

Applications of hypnotherapy with children

Contrary to the common belief of the general public, hypnotherapy has been widely used as an important intervention or an adjunct treatment modality regarding a wide variety of problems in children (Olness and Kohen, 1996) and even in toddlers(Gardner, 1977). Most of its applications so far has been in the area of medical problems. Some of the most salient ones found in the research literature are: recalcitrant abdominal pain (Sokel, Devane & Bentovin, 1991), treatment of warts (Tasini & Hackett, 1977; Spanos, Stenstrom & Johnston, 1988), psychogenic seizures (Gardner, 1973; Glenn & Simondsn 1977), stress management (Smith & Womack, 1987; Smith, Barabasz & Barabasz, 1996), pain in children with cancer (Hilgard & Lebaron, 1984) and pediatric surgery and emergency (Olness and Kohen, 1996). Also, hypnosis has been proved to be an effective intervention with some learning problems (Russell, 1984), school phobia (Lawlor, 1976) and learning dissabilities (Illovsky & Fredman, 1976).

The purpose of this paper is to demonstrate the value of clinical hypnotherapy applications for several pediatric medical problems or conditions. To this end, a review of several research studies regarding medical problems in children where hypnosis has been used as an intervention (an adjunction to) will be presented. Hypnotherapy with children has been a serious area of study (mostly in the medical field) and its effectiveness has been consistently documented over the years, and it deserves more serious attention that has historically received from the child health field in general.

Hypnotherapy for Pain Control

Historical accounts of hypnotherapy include many reports of its use for pain control. For instance, James Braid, an English surgeon, in the mid-19th century, applied hypnotic training techniques to alleviate the pain of major surgery (Olness & Kohen, 1996). Given that children generally have been found to respond hypnotically better than adults, and that their ability to control pain with hypnotic suggestion is positively correlated with hypnotizability (E.R. Hilgard & Hilgard, 1975), it should come as no surprise that children have been found to be more adept than adults in using hypnotherapy for control of pain (Olness & Kohen, 1996).

Although these findings are true in terms of group comparisons, of course there are individual differences. Advantages to children who learn these methods of self-regulating pain include enhancement of self-confidence, personal participation in the therapeutic process, reduction of side effects, and increased ability to participate in normal daily activities. There are various reports of successful uses of self-hypnosis techniques by children with a variety of chronic illnesses; including malignancies, hemophilia, diabetes, sickle-cell disease, migraines, and juvenile rheumatoid arthritis (C.J. Erickson, 1991; Olness, 1985a: Olness & Kohen, 1996: Olness & MacDonald, 1987; Varni & Gilvert, 1982;).

Hypnotherapeutic interventions may be helpful as an adjunct therapy in the management of childhood pain (Olness & Kohen, 1996). Because pain is a complex psychophysiological phenomenon that is subjective by definition, hypnosis has been identified as an ideal intervention that can effectively block or reinterpret the psychological component of the experience (Hilgard & Hilgard, 1975).

Hypnosis has been used as a behavioral approach to help children tolerate aversive medical procedures more effectively toward the management of pain resulting from these procedures (Katz et. al, 1987). Olness and Kohen (1996) mentioned the importance of the clinician in knowing the variations in the experience of pain in children as a cornerstone for doing good hypnotherapeutic work. Variables such as; age, individual differences in tolerance to pain, emotional significance (as might be attributed to the pain experience) and the context of pain (and its expectancy value) are extremely important to deal with when considering using any kind of hypnotic approach for pain management in children (Olness and Kohen, 1996).

Olness (1981) reported the use of self-hypnosis (or imagery exercise) as adjunct therapy for children with cancer in 25 pediatric cases ranging from 3 to 18 years old. The subjects were children consecutively referred by oncologists for imagery exercises (self-hypnosis) at a Children's Medical Health Center. Although Olness's (1981) accounts are derived from clinical experience and not controlled research, she concluded that the use of self-hypnosis is a valuable adjunct therapy for symptom relief, such as reduction of pain and nausea, especially among those who begin these exercises at the time of their initial diagnosis.

Olness, MacDonald and Uden (1986) conducted a controlled study comparing the effects of self-hypnosis techniques, Propranolol and placebo in the treatment of juvenile classic migraine. The authors used a double blind, placebo-controlled, single crossover comparison of propranolol to self- hypnosis in the management of juvenile migraine of 28 children from both sexes, ages 6 to 12. The children had an IQ of 85 or above, normal findings on CT brain scan, normal findings in neurological examination, no prior

experience with self-hypnosis or biofeedback. Subjects with a history of asthma, diabetes mellitus or hypoglycemia were excluded from the study.

The study included a 4-week baseline period, a 1-week period to begin placebo or propranolol, a 10-week placebo or drug treatment period (period 1), a 1-week washout period followed by a similar 12-week treatment period (period 2). At the end of period 2, all children were taught self-hypnosis and were followed for 12 weeks (period 3). During periods 1 and 2, subjects were randomly assigned to one of three groups: placebo-placebo-self-hypnosis (group 1), propranolol-placebo-self-hypnosis (group 2) or placebo-propranolol-self-hypnosis (group 3). The Propranolol and placebo were provided by the manufacturer in a blinded fashion. The children were asked to rate each headache subjectively as mild (1 point), moderate (2 points) or severe (3 points).

After completing the drug component of the study, the authors taught self-hypnosis techniques to the children, consisting of a standard progressive relaxation exercised followed by focusing on something pleasant of his or her choosing. Each child was asked to practice the exercise twice a day. On a second visit (one week later) each child was offered exercises on self-regulation of pain to be incorporated into the review of the self-hypnosis exercise (and also asked to practice twice a day at home). On a third visit (2 weeks later), children practiced in pain control by development of hand anesthesia. Later on, two review visits (at a 1-month interval) were conducted. Age, sex, IQ, hand-warming ability, EEG, placebo intervention, propranolol intervention, training in self-hypnosis, and season during which training took place were all used as independent variables. The dependent variables included number of headaches

(documented in a daily log), subjective headache severity, and objective headache intensity (duration in time).

Olness et al. (1986) found no effects on number of headaches or severity due to age, sex, IQ, EEG, hand-warming changes, or season during which training took place. They did find a statistical difference in the effect of self-hypnosis for reduction in number of headaches, when compared to placebo and propranolol treatment (P = .045). The mean number of headaches per child for the 3 months during the placebo period was 13.3 compared with 14.9 during the propranolol period and 5.8 during the self-hypnosis period. The authors concluded that regardless of the etiology, children can use self-hypnosis (as a self-regulating process) to reduce the frequency of these headaches.

Another study involving hypnosis and pain management with children was conducted by Katz, Kellerman and Ellenberg (1987), with a sample of 36 children (24 males and 12 females) of 6 –12 years of age, with acute lymphoblastic leukemia, undergoing repeated bone marrow aspirations (BMAs). In this study, subjects (from an outpatient hematologic-oncologic clinic) were randomized to hypnosis or play comparison groups. The hypnotic intervention consisted of training in hypnosis and self-hypnosis by one of the two psychologists from the study. Hypnotic induction was obtained with the technique of eye fixation, and included active imagery tailored to the interest of the each child, deep muscle relaxation, and suggestions of imagery to reduce or reframe sensory/pain experiences. In addition, the procedure aimed at developing a sense of mastery and control over sensory and affective experience; post-hypnotic suggestions for practicing and reentering hypnosis with a cue from the therapist during actual procedures.

The comparison group consisted of non-directed play sessions designed to control the amount of time and attention the child received from the psychologist performing the interventions. Subjects in both conditions were seen prior to BMAs for the same account of time and by the same psychologist. The study was a two group (hypnosis and play) by two conditions (baseline and intervention). Each subject was seen for two intervention sessions prior to the next BMA by one of the two psychologists on 30-minute sessions. As part of the clinic medical policy, parents were allowed to be present during the procedure. Eighty five percent of the subjects had a parent present (usually the mother).

The study used observational and self-report measures to assess the dependent variables. These measures were; Procedural Behavior Rating Scale-Revised (PBRS-r) for observation of acute behavioral distress during BMAs (Katz et al.,1987). The Nurse Rating of Anxiety completed by the nurse following the completion of each procedure (Katz et.al. 1987), the Fear Self-Report (Fear-SR) – to be completed by the child, and the Pain Self-Report (Pain- SR). This last one is a subjective pain index for children that employs a graphic rating scale ranging from 0 to 100.

The authors found that self-report measures for both groups showed decreases from baseline to subsequent BMAs after intervention, with significant main effects for BMA administrations on both the Pain-SR and Fear-SR. Pain-SR scores on each of the three post-baseline BMAs were significantly lower than baseline for both hypnosis and comparison group ($p < .05$). On the Fear-SR, there was a significant drop for the hypnosis group from baseline to the third post-baseline ($p <. 05$), while changes from baseline to first, second, and third post-baseline were all significant for the comparison

group. The authors pointed out the significant group differences found on the Fear-SR, suggesting the hypnosis group had lower scores, merely reflects their randomly lower scores at baseline, although there were no significant baseline differences. The means for hypnosis and control group was 75.5 and 80.5 respectively. The authors found no significant interaction of group by BMA procedure.

The authors concluded from the results that both hypnosis and comparison groups demonstrated significant decreases in self-report of fear and pain from baseline to post-intervention BMAs, with no major differences between groups. No significant decreases were found on the observational measures in reducing subjective pain and fear from the BMAs. A statistically significant difference was found in the group by sex interaction, where the girls tended to do better in the hypnotic condition and the boys better at the comparison play condition. However the authors mentioned that their sample of girls was too small to draw any conclusions about sex difference in the effect of hypnotherapeutic intervention with children, and is not consistent with the overwhelming consensus in the literature pointing that there are no significant differences between boys and girls in the use of hypnotic interventions.

In one of the few longitudinal studies on pain management with children with cancer Olness and Singher (1989) applied self-hypnosis (relaxation-imagery exercises) to 50 children (26 male, 24 female) ranging from 2 ½ to 12 years old. Throughout a 6-year period (1978-1984) the researchers followed the progress in the management of pain associated with their medical condition and kept records of it through the use of the nursing staff. Each child in the study was offered four in-hospital practice session in self-hypnosis (with reviews as the child requested), daily visits during each hospital stay, and

monthly group practice reviews over the five year period. *Training sessions* – The first one lasted 30-45 minutes. The clinicians met each child and parent to explain self-hypnosis and to learn about the child's likes, dislikes, lifestyle, and learning styles. Specific emphasis was made so that the child would be offered skills, which he/she could control, could use when he/she chose, and which would be remembered for many years (thus creating a positive expectancy). This emphasis was often made in front of nurses and family members to create the same attitude in all the important people involved. Finally, each child was taught a simple relaxation exercise (the investigator noted "each session's duration, method and the child's responsivity" unsystematically).

In the second session, the children made drawings (with the clinicians) of the central nervous system as a means to explain nerve functions with age appropriate examples. Later, four options for pain reducing imagery were offered: 1) images of colored nerve lines with control switches of various types; 2) dissociation via flying off to another place and an activity enjoyable to the child; 3) an image of pain and the option of changing the image, (e.g. from one color to another); or 4) transfer of glove anesthesia. The third session consisted of the child reviewing the pain control exercise, using a small gauge needle to touch the anesthetized (hypnotically) hand when the child gave the signal that he/she was ready to allow it. The child also had the opportunity to change the temperature of his/her finger with biofeedback monitor after a demonstration with the equipment.

On the fourth session, the child chose the practice order and body area to be anesthetized. Exercises on relaxation, pain control and temperature biofeedback were also reviewed. The practice sessions took between 15 and 20 minutes, and often the

investigator spent additional time (not specified) visiting with the child and family (adding positive expectancy and reinforcement). The children participated on group reviews (30-40 minutes) where pain control strategies were reviewed and relaxation tapes were played. The groups included parents and siblings (and occasionally grandparents). Finally, children were able to request individual review sessions scheduled a week before a bone marrow aspiration (BMA) or lumbar puncture (LP) if they felt it was necessary.

The nursing staff, collecting the data, completed shift-by shift records of symptoms during the first hospitalization, as well as pain and anxiety scales for procedures such as venipuncture, BMAs and LP. Agreement among raters ranged from 78% to 100% with overall agreement of 90%. Additionally, following discharge, the oncologist completed behavioral rating scales at the time of office procedures. Also, parents were asked to complete follow-up forms regarding frequency of relaxation-imagery practice by the child and assessment of its value at three months, six months, 12 months, and yearly thereafter.

The impact on symptom reduction was evaluated in terms of a summary score for the initial hospitalization and another summary score for outpatient procedures rated by patient, nurse and oncologist. Overall, the long term clinical success was rated three (high) if a composite of oncologist, parent, and patient ratings agreed that the child had a high comfort level (0 to 1 on pain and anxiety scales) for 90% or more of the procedures: two (intermittent) if the child had a high comfort level during 50-90% of procedures and one (low) if the comfort level was high during less than 50% of the procedures.

The independent variables in the study were age, sex, number of years post-diagnosis, parent application of self-regulation skills, number of group practice sessions

attended, and school performance. Dependent variables included pain and anxiety ratings during initial hospitalization, peripheral temperature control scores and outpatient self-regulation skills. No control group was utilized in this study.

The authors reported that only 36 children survived the illness by the fifth year of the study. They reported that, overall, in the years one to five post-initial hospitalization, 70% of the children demonstrated a high comfort level post self-regulation training: 26% demonstrated intermittent success in using self-regulatory skills" and 4% were unable to use self-regulation (self-hypnosis) skills throughout the five-year period. No differences in pain reduction were found regarding age, sex or medical diagnosis. Olness and Singher (1989) concluded from their results that there was a strong association with parental learning and child success in clinical application of these skills, and that may have been reflected in the child's recognition of the parents to reinforce suggestions for their children. They added that; "teaching self-regulation skills (self-hypnosis) to increase comfort and reduce symptoms during protracted diagnostic and treatment interventions for cancer is an efficient and practical adjunct to usual treatments".

Although the authors are very optimistic about their results, it is important to mention the limitations of the study that impact upon the reliability of the results. The study did not have a control group to compare the impact of self-hypnosis with children without it, but with similar conditions (like having support from parents, nurses and relatives). It is possible to question the ethics of not providing the children (in a control group) with a technique that might help them alleviate pain, considering their serious and delicate medical condition. However, the lack of a comparison group makes it very difficult to draw any clear conclusion about their results. Also, the study did not control

for the expectancy effect of having parents and also grandparents involved (positively) in the use and practice of self-hypnosis. We do not know from the study how much of an impact the family's positive perception of the treatment might have contributed to the positive effects obtained. The measurements for pain and anxiety in the study were mostly self-reports or observation reports from professionals (nurses) who were part of the hypnosis protocol and therefore, not blinded to the treatment condition. We don't know how much reliable and "pure" (that is, not without certain expectancy) those reports might have been. Finally, it is not possible to draw clear conclusions with such a small sample of subjects.

Sokel, Devane and Bentovim (1991) reported six cases of children with severe abdominal pain of no discernible organic cause who were taught self-hypnosis consisting of relaxation, guided mental imagery, and suggestions of pain relief. The children's age ranged from 7 – 14 years (median, 10 years), five were male, one was a female.

The children were taught individualized relaxation/self-hypnosis over a period of 2-3 sessions. They were provided with a cassette recording of the sequence and were instructed to practice daily with the tape, and then use the techniques whenever they felt an episode (if intermittent) or an exacerbation (if constant) of abdominal pain beginning. The imagery employed was tailored to the age and interests of each child. For example, a child would learn to "turn down" the pain, "magic potions", or play with an imaginary pet animal that soothed away the pain, or learn (in the older ones) the ability to engage in sports (mentally) successfully in a pain-free manner. In addition, the parents and ward staff were instructed to avoid positive reinforcement of pain and to encourage gradual resumption of normal activities. Following symptom relief, individual and family

therapy were offered to tackle possible underlying causes. A follow up by the therapist took place at weekly intervals for the first 3 weeks, and subsequently at 2 monthly, then 3 monthly and 6 monthly intervals.

Sokel et al. (1991) concluded that the usefulness of self-hypnosis in pain management for these patients was evident in their clinical experience. However, they recognized their lack of scientific data to support this claim and recommended the future use of controlled trials of individualized relaxation and self-hypnosis techniques with a larger number of subjects.

Other medical applications of hypnosis

Warts.

Spanos, Stenstrom and Johnston (1988) conducted a controlled experimental study involving subjects of both sexes from 10 to 74 years of age. Sixty-four (29 males, 35 females) subjects, all volunteers, were randomly assigned to a hypnotic suggestion (N=22), "cold laser" placebo (N=24) or no treatment control condition (N=17). All subjects were seen individually by a research assistant, who counted the warts on each of their hands and recorded their age and their estimates of the duration of their warts (in months). A male therapist conducted both the hypnotic and placebo treatments. Hypnotic and placebo subjects were administered their respective treatments and scheduled to return in six weeks for follow-up evaluation. Control subjects were informed that they were on a waiting list and were asked to return in 6 weeks to receive treatment.

A research assistant counted the number of warts on each subject again at the 6 weeks follow-up session. Then subjects were tested for hypnotizability using the

Carleton University Responsiveness to Suggestion Scale (CURSS). The research assistant who counted the warts in both sessions was blind to the subject's treatment assignment. The hypnotic treatment consisted of a 5-minute induction procedure, after which subjects were administered a suggestion for wart elimination that was 2 minute in duration (with eyes closed). The suggestion informed the subject that their warts would shrink and fall off and asked them to vividly imagine them shrinking in size and dissolving away. After the process, the subjects rated the vividness with which they imagined their warts shrinking and disappearing, on a 7- point scale. Later, they were re-administered the same 2 minute suggestion (eyes closed). After they opened their eyes, they were instructed to count their warts every day, and after each counting to close their eyes and spend 3 to 4 minutes imagining the warts on their target hand disappearing.

The subjects on the placebo treatment were given an article to read in *Life Magazine* about the medical uses of lasers, and afterwards they read a brief but technical account of laser action. A "target hand" was chosen randomly and they received a "laser" in that hand, consisting of a sweeping pink light with a whirring sound, while wearing "protective goggles". They received two 4-minute "laser doses". Following the procedure, they were instructed to count their warts every day and at these times to notice whether they experience any sensations in their warts. The no treatment control subjects also had their warts counted and were informed that they were on a waiting list and would be administered a treatment for their warts in 6 week's time.

Spanos et al. (1988) reported that in their results the hypnotic subjects lost a greater percentage of warts than subjects in either the placebo or control group. However, placebo and control subjects failed to differ significantly in warts lost. Also,

hypnotic subjects rated their suggested sensations as significantly more vivid than did placebo subjects. In the hypnotic condition, subjects who lost warts reported significantly more vivid suggested imagery than those who did not lose them. However, there were no significant differences on the hypnotizability scale between subjects who lost and did not lose warts on the hypnotic group. Not were there any differences in the hypnotizability scales among subjects in the placebo group that did or did not lose warts.

These findings, reflecting the fact that hypnotic subjects lost significantly more warts than the control group, may indicate that they (the hypnotic subjects) were more subjectively involved in their treatment than were placebo subjects. Subject involvement in the treatment process was helpful in bringing about wart regression. The lack of significant correlation between wart loss and hypnotizability (as measured on a scale) may have indicated that subject's cognitive involvement and motivations may be a better outcome predictor than global indexes of fantasy proneness and suggestibility (Spanos et al., 1988).

This idea seems at odds with children's research on hypnotizability, fantasy proneness, and imagination. However, in the present study, there was a very wide range of variability in age, making impossible to draw any final conclusions for a specific group age, much less children. Replications of this study exclusively with children could provide more definitive data on this matter.

Asthma.

Kohen, Olness, Colwell and Heimell (1984) and Culbert, Breany and Kohen (1994) have noted that self-hypnosis is helpful in management of childhood asthma. It involves the reduction of anxiety during acute episodes, early rapid abatement of

wheezing and reduction of frequency of wheezing episodes, as well as reduction of functional morbidity such as school absences, improvement in personal sense of mastery, possible improvement in pulmonary function and prevention of long-term morbidity. There are several reports of positive use of hypnotherapy with children with asthma, but these vary greatly, from study to study, in their methods used, thus, making comparisons difficult (Olness and Kohen, 1996). Treatment techniques ranged from hypnoanalytic (insight oriented) to relaxation training, self-hypnosis, direct suggestions for symptom relief, and general ego-strengthening suggestions.

One of the earliest and mostly cited reports of hypnosis in this area is the "classic" work of Diamond (1959), applying hypnoanalytic techniques to 55 children with asthma who had no positive findings on skin testing or had not responded to vaccine therapy. Five children did not respond at all to hypnotic induction, and another 10 achieved only a modest response. The remaining 40 children achieved complete remission of symptoms. A follow-up of 2-4 years showed that they stayed symptom free. Diamond (1959) did not have a control group to compare his findings. The forty children, who did improve, all experienced age regression to the time of the first episode of asthma, associated with emotional trauma such as severe guilt or fear of loss of parental love. They responded to insight oriented approaches to deal with developing feelings of emotional security. Although this hypothesis could be useful in the clinical context, more experimentally appropriate approaches should be design to explore the uses of hypnosis in asthmatic children.

The data presented points to the fact that self-hypnosis techniques seem to help control or improve symptoms of asthma, but still there is more need to devise clear

experimental research to clarify what is a complex are with good possibilities for clinical applications.

Postoperative Course.

Lambert (1996) conducted a study to evaluate the effects of hypnosis/guided imagery on the postoperative course of 52 children (7 –19 years of age) matched by sex and diagnosis who have to undergo selective surgery. Sixty two percent of the sample was female and 38% was male (46 white and 6 were African-American).

In a two-group, pre-post test experimental design, children were randomly assigned to the experimental or control group. In the experimental group, children were taught guided imagery by the investigator, while children in the control group spent equal amounts of time with a research assistant discussing the surgery or topics related to the child's interests. In addition, all children and their families went through the standard preoperative teaching and preparation for the hospital stay, as well as postoperative care. The preoperative preparation was done by the investigator, a nurse practitioner and/or a child life specialist.

For the experimental group, the hypnosis/guided imagery experience occurred during the pre-admission visit (1 week before the surgery), and lasted no more than 30 minutes. Guided imagery, incorporated to individually tailored relaxation exercises was used with each child in the experimental group. During practice, the child would be given suggestions of "healing, uncomplicated recovery and minimal pain" (Lambert, 1996). The measurements for the dependent variable were a numeric pain scale (from 0= none, 10=worst possible) and a self-report state anxiety inventory, which was administered pre and post operatively.

In the study, no differences were found between groups on length of surgery, length of anesthesia, or time in the post-anesthesia unit. Nor there were any differences in the amount of pain medication received between the two groups. However, the children in the experimental group rated their pain significantly lower (mean 3.9) than the ones in the control group (mean 4.4, $p<.01$). There were also significant differences in the average length of hospital stay, being shorter for the experimental group ($p< .05$). Although not statistically significant, the authors mentioned that the direction of the change in scores suggests that the children who were taught the imagery/hypnosis decreased their anxiety, whereas anxiety for the children receiving the usual care increased.

Lambert (1996) concluded that these results point out the benefits of hypnosis/guided imagery in addition to standard preparation for children having elective surgery. Although these conclusions might sound reasonable from this study, it is important to point out some methodological weaknesses. For example, the author admits a problem with the age of the groups, (there was no matching of age) where the control group was older than the experimental group. It is possible to speculate if there was any influence on the degree of hynotizability (being lower) of an older group than the experimental one. Another weakness is that there was not any control for the expectancy factor of investigator, nurses, and parents over the children in the experimental group.

The investigator did all the preparation, as well as hypnotic training on the subjects and could have positively biased them with non-verbal and verbal subtle communication (like subtle-shifts in voice tone) that the children could have picked up. Therefore, it is possible that the experimenter's expectations were communicated to the

children so their responses were not a clear result from the hypnotic intervention, affecting their internal validity. The parents of the children in the hypnotic condition could also have made an impact in their children's expectations, as well as, the nursing staff who was not blind to the treatment condition to the groups. Finally, the small size of the sample prevented the generabizability of the results. Future studies with this kind of population should have to establish better experimental controls.

Conclusions

The research reviewed in this paper presents some of the most important applications of hypnotherapy to medical problems in children. However, it is in the research area pertaining to the uses of hypnosis with pain resulting from medical problems where more experimental methodologies are used. The interventions researched for these medical problems, specially the management of pain were various, presenting a great deal of creative approaches to deal with the problem at hand. Still, in those studies the sample size is usually not enough to obtain a strong external validity of the results, making impossible the generalizations of findings in other similar groups of the population of children.

Despite the research presented on the benefits of applying hypnotherapeutic interventions as an adjunct to medical pediatric problems, still, the popular attitude among the average child health professional toward hypnosis is one of ignorance, skepticism, or at the worst extreme, misconceptions about dangers to children when using hypnotherapeutic interventions (Gardner, 1976; Bustillo, 1999). Unfortunately, the media does not help at all when it comes to presenting a healthy and safe view of

hypnosis. Images of stage performers "having power" over volunteer persons, or semi-dark offices where a professional – almost in a god-like manner – is applying his (always is a he) "power" toward the needy client, still are frequent on T.V. and the movies. Moreover, the average health professional has little factual information about what is and what is not hypnosis, much less about its clinical applications (Gardner, 1976; Bustillo, 1999). He or she knows too little or nothing about the use of hypnosis as a therapeutic tool, and is not so uncommon to find those who seriously belief that it is not recommended for children or it can even be dangerous to a child (Bustillo, 1999).

The present paper intended to change a little that negative image, presenting research-based information regarding the medical applications of hypnotherapy with children. It is important to mention that most of the controlled research comes from the medical establishment, while the mental health field (the psychotherapeutic one), still emphasize case studies over experimentally controlled research. This attitude is perhaps, founded in the wrong believe that research is not so necessary when it comes to good therapeutic intervention, as many clinicians (and school of therapy) tend to belief.

From my perspective, more research is needed in the field psycotherapeutic interventions with children. For this, controlled research methodologies should be designed to test the efficacy of hypnosis as an effective clinical tool with children. Individual, contextual, familiar and interpersonal variables that are instrumental to the applications of hypnotic techniques with children should also be part of the research agenda in the field. In that way, we will be forming a research-based model of the benefits and applications of an important tool in helping children heal.

References

Bustillo, A. (1999). Hypnotherapy with children and the role of attitudes toward hypnosis in mental health professionals. Unpublished document. University of Massachusetts, School of Education.

Diamond, H. H. (1959). Hypnosis in children: The complete cure of forty cases of asthma. American Journal of Clinical Hypnosis, 1, 124-129.

Erickson, C.J. (1991). Applicatins of cyberphysiologic techniques in pain management. Pediatric Annal, 20, 145-156.

Gardner, G (1974). Hypnosis with Children. The International Journal of Clinical and *Experimental Hypnosis*. 22, No. 1, (1974), 20-38.

Hilgard, J. R. (1970). Personality and Hypnosis: A Study of imaginative involvement. Chicago: University of Chicago Press.

Hilgard, E.R., & Hilgard, J.R. (1975). Hypnosisi in the relief of pain. Los Altos, CA: William Kaufman.

Katz, E., Kellerman, J., and Ellenberg, L. (1987) Hypnosis in the Reduction of Acute Pain And Distress in Children with Cancer. Journal of Pediatric Psychology. 12, No. 3, 379-394

Kohen, D., Olness, K., Colwell, S. and Heimel, A. (1984) The Use of Relaxation-Mental Imagery (Self-Hypnosis) in the Management of 505 Pediatric Behavioral Encounters. Developmental and Behavioral Pediatrics. 5, No. 1, 21-25.

Lambert, S. (1996) The Effects of Hypnosis/Guided Imagery on the Postoperative Course Of Children. Developmental and Behavioral Pediatrics.

Lankton, S. & Lankton, C. (1983). The Answer Within: A Clinical Framework for Ericksonian Hypnotherapy. Brunner/Mazzel

Lawlor E. (1976) "Hypnotic Intervention with School Phobic Children. The InternationalJournal of Clinical and Experimental Hypnosis. *23, No. 2, 74-86.*

London, P. (1962). Hypnosis in Children: An experimental approach. International Journal of Clinical and Experimental Hypnosis, 10,79-91.

Olness, K., and Gardner, G. (1978) Some Guidelines for Uses of Hypnotherapy in Pediatrics. Pediatrics. 62, No.2, 228-233

Olness, K. (1981) Imagery (self-hypnosis) as adjunct therapy in childhood cancer. The American Journal of Pediatric Hematology/Oncology. 3, No. 3, 313-321

Olness, K., MacDonald, J., and Uden, D. (1987) Comparison of Self-Hypnosis and Propranolol in the Treatment of Juvenile Classic Migraine. Pediatrics. 79, No. 4 593-597.

Olness, K. and Singher, L. (1989) Pain and Symptom Management Training for Children With Cancer: A Five-Year Study. Topics in Pediatrics. 7, No.1, 2-6

Olness, K., and Kohen, D. (1996) Hypnosis and Hypnotherapy with Children (3rd Ed.) The Guilford Press

Smith J., Barabasz A., and Barabasz M. (1996) Comparison of Hypnosis and Distraction in Severely Ill Children Undergoing Painful Medical Procedures. Journal of Counseling Psychology, 43, 2, 187-195.

Sokel, B., Devane, S., and Bentovim, A. (1991) Getting Better with Honor: Individualized Relaxation/Self-Hypnosis Techniques for Control of Recalcitrant Abdominal Pain in Children. Family Systems Medicine. 9, No. 1, 83-91

Spanos, N., Stenstrom, R., and Johnston, J. (1988) Hypnosis, Placebo, and

Suggestions in the Treatment of warts. Psychosomatic Medicine. 50, 245-260

Tinterow, M. (1970) Foundations of Hypnosis: From Mesmer to Freud. Springfield, IL: Charles C. Thomas

Varni, J.W., & Gilbert, A. (1982). Self-regulation of chronic arthritic pain and long-term analgesic dependence in a hemophiliac. Rheumatology and Rehabilitation, 22, 171-174.

Zeltzer, L. and LeBaron, S. (1982) Hypnosis and Nonhypnotic Techniques for Reduction of Pain and Anxiety during Painful Procedures in Children and Adolescents with Cancer. Behavioral Pediatrics. 101, No. 6, 1032-1035.