

# MIND BODY THERAPY AS AN ADJUVANT TO RELIEVE POST OPERATIVE PAIN

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## ABSTRACT

*Objectives* To assess the effectiveness of mind body therapy in reducing pain and postoperative analgesia requirement in patients undergoing surgical procedures under general anaesthesia.

*Study design* Randomized controlled trial.

*Place & Duration of study* Ziauddin Medical University Hospital, Karachi from December, 2006 to November 2007.

*Patients and Methods* This study was conducted on patients undergoing general surgical procedures under general anaesthesia. A total of 200 patients were enrolled over this period through non-probability convenient sampling. Patients were divided into two groups, one received relaxation therapy pre and post operatively plus analgesia on demand while other group received analgesia on demand.

*Results* A total of 200 patients were included, 100 in each therapy and control group. The stay in hospital was different ( $p=0.002$ ) between the therapy and control groups. There was statistically significant difference in frequency of analgesia required between both groups on all three consecutive post operative days ( $p<0.001$ ) in favour of therapy group.

*Conclusions* Mind body relaxation therapy decreases the dose and over all analgesia requirement in patients undergoing different surgical procedures, thereby decreasing the hospital stay and facilitates early recovery.

*Key words* Postoperative pain, Hypnosis, Analgesia.

## INTRODUCTION:

Mind body therapy dates back to 2000 years with Hippocrates recognizing it as a moral and spiritual aspect of the healing process. It has also been an integral part of traditional Chinese and Ayurvedic medicine.

This alternate medicinal therapy has been regarded as a behavioural, psychological, social and spiritual approach to medicine focusing on interactions between brain, mind and body.<sup>1</sup> Over a decade, multiple clinical trials on alternative medicine techniques like hypnotherapy, mind body therapy etc have been done so as to minimize adverse effects of drugs, in addition to decrease anxiety in patients, pre and post operatively. One of such trial conducted more than ten years back, has shown hypnosis to be better than stress reducing strategies in patients undergoing plastic surgery.<sup>2</sup>

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The advantage of using hypnosis based mind body therapy is not only in surgical pain relief but has been proved to be effective in alleviating acute and chronic pain in medical related conditions among children and obstetric related pain among women.<sup>3,4</sup> A couple of reviews have also evaluated use of complementary medicine in relieving pain among adult cancer patients. A systematic review in this relation has reported that seven out of eighteen trials have shown significant benefits of different alternative medicinal therapies.<sup>5</sup> Another review has focused on use of these techniques in palliative care and in reducing symptoms like nausea vomiting following chemotherapy.<sup>6</sup>

This mode of therapy has not been limited to decreasing pain and anxiety; it is being practiced in other disciplines like wound healing and administration of anaesthetic drugs. It has been observed in a US based study that these methods have played an important role in improving immune system resulting in accelerated healing.<sup>7</sup> Another randomized controlled trial done in Harvard has shown that targeted mind body intervention could accelerate postoperative wound healing.<sup>8</sup> Most recently, study done in Japan has reported 79 clinical trials utilizing hypnosis based mind body therapy for reduction in dosage of anaesthetic drug administration.<sup>9</sup>

Research on mind body therapy is in its preliminary stages in Pakistan; therefore local articles could not be retrieved to the best of the authors' knowledge hence, this study was designed to assess the effectiveness of mind body therapy in reducing post operative analgesia requirement in patients undergoing general surgical procedures under general anaesthesia.

#### **PATIENTS AND METHODS:**

This study was conducted on patients undergoing elective surgical procedures in surgical ward at Ziauddin Medical University Hospital, Karachi over a period of one year from December, 2006 to November 2007. A total of 200 patients were enrolled in this period through non-probability convenient sampling. All patients were scheduled for general surgical procedures under general anaesthesia. The age ranged between 18 to 60 years, with no language barrier, no known history of hearing defect and of drug addiction or alcohol use. Patients undergoing laparoscopic surgeries, having any systemic illness or psychological conditions (evident major mental illness), taking medications and/or behaviors affecting wound healing (e.g., diabetes, immunocompromised, prescribed steroids, cigarette smoking) were excluded. Patients were well informed about the study protocols and informed consent was taken. The study was approved by hospital ethical committee.

The patients were divided into two groups, therapy group (A) and control group (B). Group A received relaxation

therapy plus analgesia on demand whereas group B was provided with analgesia only. Usual protocol of postoperative analgesia i.e.; pain killer on regular basis was not followed even for the control group (to find out frequency of analgesia demand). Before starting therapy, all enrolled patients were given detailed information about the procedure, nature of mind body therapy, aims of trial and possible benefits to the individual patient. Patients were also encouraged to ask questions regarding therapy. The therapy group received one 30 minutes session of mind body relaxation immediately before surgery and second similar session on first post operative day in an isolated room which was away from any kind of noise and disturbance.

There were hundred patients in each group undergoing similar general surgical procedures like cholecystectomy, appendectomy, herniorrhaphy, breast lumpectomy, haemorrhoidectomy, lateral sphincterotomy and incision drainage. Standard doses of post operative analgesia i.e. 75mg intramuscular injection of diclofenac sodium (Voren) was given to all patients. All procedures and relaxation therapy were done by the same surgeon who had done a certified course on holistic faith healing. A scripted mind body relaxation therapy protocol was adopted from Jose Silva's Holistic Faith Healing for this study.<sup>10</sup> Briefly during this method patient is asked to lie down in a peaceful room on a comfortable couch with eyes closed and to take a few deep breaths. Then instructions are given for physical relaxation and the patient is asked to imagine himself in a place of tranquility for about ten minutes. At this point person's mind attains alpha rhythm which is a state of wakefulness.<sup>11</sup> At this stage patient feels relaxed, experiences effortless alertness and is receptive to instructions (regarding pain control) being conveyed to him. Finally the instructor delivers few commands to arouse the patient out of this relaxed state of mind (from alpha to beta rhythm).<sup>11</sup> The preoperative sessions were designed to stimulate positive expectancy of comfortable and speedy recovery, to reduce pain and provide trance instruction. Postoperative interventions were structured to address pain, accelerated incision healing, and return to daily life activities early.

The visual analogue scale (VAS) was used postoperatively from first postoperative day, as a tool, to measure the intensity of pain in this study. Patients were asked to mark their pain score on a 10 cm scale ranging from 0=no pain to 10=worst pain imaginable. Patients with pain level between 0 – 3 were labeled as to have mild pain, those between 4 and 7 having moderate pain and those between 8 and 10 having severe pain. Data was entered and analyzed using SPSS version 10. Frequencies were calculated and Chi-square test was used for statistical analysis of variables,  $p < 0.05$  was considered significant. Fischer's exact test was used for cell values less than 5.

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**RESULTS:**

A total of 200 patients were included, 100 each in the group receiving therapy and the control group respectively. There was no statistical difference between gender in both the groups ( $p=0.89$ ). The table I shows comparison of variables under study in between the two groups. The duration of surgery was divided into two strata, 30 minutes to 1 hour and more than 1 hour to 2 hours. Majority of the patients (91% in control group and 83% in therapy group) had surgery for 30 minutes to one hour. The time spent for surgery was also not significant for the two groups ( $p=0.09$ ). The duration of stay in hospital was significantly different ( $p=0.002$ ) between the therapy and control group. More than half of the patients (55%) from therapy group and only (34%) in the control group stayed for 2 days. Among the remaining patients from therapy group (40%) stayed for three days and (5%) for four days. On the other hand 47% from the control group stayed for three days and 19% for four days.

The frequency of analgesia was assessed as once, two to three times and none per day on the basis of VAS. The dose and overall analgesia requirement were lower in therapy group as compared to that of control group. There was statistically significant difference between therapy and control group on all three consecutive post operative days ( $p < 0.001$ ). The dose of analgesic was calculated according to the intensity of pain. Table II. shows the comparison between the frequency of analgesia in both control and therapy groups.

**DISCUSSION:**

Complementary and alternative therapies are very popular for pain management despite the lack of strong research supporting some of their use. Even though evidence based studies that are double blinded and show a higher degree of inter-rater observer reliability do not exist, patients will likely to seek out complimentary and alternative therapies for pain management. Pain management distills down to a very simple endpoint, patients' relief and comfort. If the patient feels better, feels comforted, feels less stressed and more functional in life and their practice pose no health risk, then supporting complementary and alternative therapies creates a true holistic partnership in health care. Non drug therapy, physical therapy, cognitive-behavioral therapy, TENS, hypnosis, biofeedback, psychoanalysis, simple mind body therapies, touch therapies, acupuncture or others may be appropriate and enhance a conventional pain management programme.<sup>12</sup>

The main outcome of this study was frequency of analgesia

**Table: I. Comparison of variables in between control and therapy group**

	Control group		Therapy group		P value
	n	%	n	%	
<b>Gender</b>					0.89
Female	44	44%	43	43%	
Male	56	56%	57	57%	
<b>Hospital stay</b>					0.002
One day	3	3%	8	8%	
Two days	31	31%	47	47%	
Three days	47	47%	40	40%	
Four days	19	19%	5	5%	
<b>Procedure</b>					0.35
Cholecystectomy	21	21%	19	19%	
Appendicectomy	15	15%	15	15%	
Herniorraphy	17	17%	13	13%	
Breast surgery	18	18%	16	16%	
Haemorrhoidectomy	15	15%	10	10%	
Lateral sphincterotomy	5	5%	14	14%	
Incision & drainage	9	9%	13	13%	
<b>Duration of surgery</b>					0.09
30min to 1 hour	91	91%	83	83%	
1- 2 hour	9	9%	17	17%	

requirement post operatively among control and therapy groups. There were no gender differences or any association with the procedure being conducted or time spent for surgery in between the two groups. The results of the study well correlated with the earlier medical research conducted in relation to this alternative mode of therapy. The use of analgesia and duration of stay in hospital was decreased in therapy patients in addition to reduction in the intensity of pain in the current study. These finding are consistent to a small study conducted on paediatric patients where perioperative hypnosis was successful in reduction of hospital stay as well as analgesia requirements.<sup>13</sup> Similar findings have been observed in a recent trial conducted on breast cancer.

Surgery patients where hypnosis has proved to be superior

**Table: II Comparison between the frequencies of analgesia used**

Frequency of analgesia at 1 <sup>st</sup> postoperative day	Control group		Therapy group		P –value
	N	%	N	%	
Once(75mg)	16	16%	81	81%	<0.001*
Two –three time(140-225mg)	76	76%	7	7%	
> Three times(>225mg)	6	6%	7	7%	
None	2	2	5	5%	
Frequency of analgesia at 2 <sup>nd</sup> postoperative day					
Once(75mg)	46	46%	54	54%	<0.001
Two-three times(140-225mg)	49	49%	6	6%	
None	5	5%	40	40%	
Frequency of analgesia at 3 <sup>rd</sup> postoperative day					
Once(75mg)	47	47%	7	7%	<0.001
Two – three times(140-225mg)	22	22%	5	5%	
None	31	31%	88	88%	
*Fischer's exact test was used for cell values less than 5					

in controlling pain, nausea, fatigue, discomfort, emotional upset at discharge and institutional cost as compared to control group.<sup>14</sup> The earlier trial evaluating stress reduction strategies and hypnosis among plastic surgery patients has demonstrated significant reduction in perioperative pain, decreased use of analgesics, better anxiety relief, improved patient satisfaction and surgical conditions in patients practicing hypnosis as compared to the other group.<sup>2</sup> On the other hand one study failed to find any significant difference between therapy and control group in decreasing intensity of pain through hypnosis; nonetheless they concluded reduction in anxiety perioperatively.<sup>15</sup>

Research has also shown the benefits of hypnosis mind body therapy among children in reducing cancer pains, chronic headaches, pain due to lumbar puncture and bone marrow aspiration, in addition to other surgical procedures.<sup>3</sup> Another review has discussed the successful use of hypnosis in obstetrics, reductions in anaesthesia and analgesia during delivery and labour, significant prolongation of pregnancy in preterm.<sup>4</sup> The visual analogue scale was used as a tool to measure intensity of pain in this study and the findings are consistent with a study done by Diaz M et al stating that systematic relaxation effectively reduced pain and increased sense of control for pain intensity.<sup>16</sup>

#### CONCLUSIONS:

Mind body relaxation therapy decreases the dose and over all analgesia requirements in patients undergoing different surgical procedures, thereby reducing the hospital stay and early recovery. Research is underway and it would be premature to conclude that it might prove to be beneficial, nonetheless, it could be suggested that these therapies may well be used as an adjuvant to pain management.

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