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EFFICACY OF PROGRESSIVE MUSCLE RELAXATION ON IRRITABILITY, DEPRESSION, ANXIETY & INSOMNIA IN OPIOID DEPENDENT PRISONER PATIENTS

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ABSTRACT

Introduction: The present study is an attempt to examine "the efficacy of Progressive Muscle Relaxation on depression, anxiety, irritability and insomnia in Opioid dependent prisoner patients". Individuals with Opioid disorders are at risk for the development of anxiety, depression, irritability, insomnia, tremors especially during withdrawal; one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve the tension.

Methodology: A purposive random sample of 54 Opioid dependent prisoners between age group of 25 – 50 years, admitted in Psychiatry IPD of Geetanjali Medical College & Hospital, Udaipur (Raj.)

Tools: Irritability, Depression, Anxiety Scale (Snaith *et al.* (1978) was used to measure irritability, depression and anxiety & Athens Insomnia Scale (Soldatos and colleagues, 2000) was used to assesses the severity of insomnia.

Sampling technique: Purposive Random Sampling

Statistical analysis: t- test

Results: The results of t- test showed that, there exists a significant difference in pre and post scores of irritability, anxiety, depression and insomnia in Group A, B & C.

Discussion: The difference between the pre and post test of Progressive Muscle Relaxation + Pharmacotherapy Interventions (Group – B), only PMR Interventions (Group C) is same as that of the pre and post test of only pharmacotherapy interventions (Group – A). Progressive Muscle Relaxation Therapy was a systematic therapy for reducing the symptoms and achieving a deep state of relaxation.

Conclusion: Progressive Muscle Relaxation can provide improvements in the symptoms.

Keywords: Progressive Muscle Relaxation, Pharmacotherapy, Irritability, Anxiety, Insomnia & Depression

INTRODUCTION & LITERATURE REVIEW

Opioids have been used for analgesic and other medicinal purposes for thousands of years, but they also have a long history of misuse for their psychoactive effects. Opioids are one of the most problematic illegal substances globally. Opioid abuse is associated with complications in various spheres of the user's life, his/her family and the society. Continued Opioid misuse can result in syndromes of abuse and dependence and cause disturbances in mood, behavior, and cognition that mimic other psychiatric disorders.

Clinical Features

Opioids can be taken orally, snorted intra nasally, and injected intravenously (IV) or subcutaneously. Opioids are subjectively addictive because of the euphoric high (the rush) that users experience, especially those who take the substances (IV). The associated symptoms include a feeling of warmth, heaviness of the extremities, dry mouth, itchy face (especially the nose), and facial flushing. Opioid use can induce dysphoria, nausea, and vomiting in Opioid persons.

Persons with opioid dependence seldom die from opioid withdrawal, unless they have a severe preexisting physical illness such as cardiac disease. Residual symptoms such as insomnia, bradycardia, temperature dysregulation, and a craving for opioids can persist for months after withdrawal. Associated features of opioid withdrawal include restlessness, irritability, depression, tremor, weakness, nausea, and vomiting

Opioid dependence affects the individual's physical, psychological, and occupational status as well as his/her family. Individuals with Opioid disorders are at risk for the development of mild to moderate depression that meets symptomatic and duration criteria for persistent depressive disorder, or in some cases MDD, insomnia, tremors, anxiety, irritability are common, especially during withdrawal, PTSD and so on.

When patients experience co- morbid symptoms anxiety, stress, depression, irritability tremors, insomnia one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve that tension. Regular practicing of progressive muscle relaxation will help people to get better at this skill, and in time people will be able to use this method to cope with stress or relieve stress, helps to attain both physical and mental fitness. When our body is physically relaxed, we cannot feel anxiety, irritability, insomnia, tremors (Ramakrishnan & Kalai , 2015) Empirical evidence supports the use of PMR in high level tension responses and mind body techniques such as: reducing tension headaches, insomnia, adjunct treatment in cancer, chronic pain management in inflammatory arthritis and irritable bowel syndrome. (Ranjita & Sarada , 2014)

The PMR procedure teaches you to relax your muscles through a two-step process. First you deliberately apply tension to certain muscle groups, and then you stop the tension and turn your attention to noticing how the muscles relax as the tension flows away. Through repetitive practice you quickly learn to recognize—and distinguish—the associated feelings of a tensed muscle and a completely relaxed muscle (Ramakrishnan & Kalai , 2015). With this simple knowledge, you can then induce physical muscular relaxation at the first signs of the tension that accompanies anxiety. And with physical relaxation comes mental calmness—in any situation.

Studies refers that PMR benefited the patient through multiple therapeutic pathways.PMR facilitates sleep initiation by becoming a cue for getting relaxed and falling asleep. (Alexandru BV & Robert B, 2009). Progressive muscular relaxation is a systemic approach to relieve muscle tension by promoting rest and relaxation of muscles, from the feet to the head (Jacobson, 1929). PMR is practised by sequential tensing and relaxing of major skeletal muscle groups (Cooke, 2013). This technique is used in the management of many physical and psychological conditions. For instance, a study in India found that PMR is an effective therapy for improving psychological health and quality of life in patients (Dehdari *et al*., 2009). PMR has also shown to significantly lower patients' perception of stress, and to enhance the perception of health. Importantly, it is also evident to that PMR is effective in the treatment of insomnia in elderly people (Scogin *et al*., 1992).

Need of the study

The study on the topic "Efficacy of Progressive Muscle Relaxation on the management of Irritability, Anxiety, Insomnia and Depression in Opioid dependent prisoners" is very relevant in the present society. Opioids are one of the most problematic illegal substances globally. According to world drug report, 2016, there were an estimated 33 million opioid users globally in 2014, much less than 184 million cannabis users. However, among illegal substances, Opioid dependence is the highest contributor to the number of disability – adjusted – life - years lost (9.2 million) and to drug – related deaths (43.5 deaths/ million people aged 15 - 64 years) (Degenhardt et al, 2010).

India too has a sizeable problem of Opioid use. The national survey published in 2004 estimates the prevalence of current Opioid use to be 0.7% in general population. This corresponds to 2 million current Opioid users and 0.5 million Opioid – dependent people (Ray R, 2004). Similarly, the problem in Injecting Drug Use (IDU) in India seems insignificant if their numbers (177,000) alone is considered. Opioid abuse is associated with complications in various spheres of the user's life, his/her family and the society and it affects the individual's physical, psychological, and occupational status as well as his/her family. Individuals with Opioid disorders are at risk for the development of mild to moderate depression that meets symptomatic and duration criteria for persistent depressive disorder, or in some cases MDD, insomnia, anxiety, irritability are common, especially during withdrawal and so on.

When people experience anxiety, depression, irritability, insomnia one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve the tension and facilitates sleep initiation by becoming a cue for getting relaxed and falling asleep.

Thus the present study was conducted to study the impact of Progressive Muscular Relaxation on the management of anxiety, irritability, insomnia and depression among Opioid dependent prisoners with following objectives:

Objectives of the study

- To study the significant difference in pre and post scores of depression, anxiety, irritability and insomnia in Opioid dependent patients who were given only Pharmacotherapy
- To study the significant difference in pre and post scores of depression, anxiety, irritability and insomnia in Opioid dependent patients who were given both Pharmacotherapy and Progressive Muscle Relaxation
- To study the significant difference in pre and post scores of depression, anxiety, irritability and insomnia in Opioid dependent patients who were given only Progressive Muscle Relaxation

Hypothesis

- There is significant difference by Pharmacotherapy in pre and post insomnia, irritability, depression and anxiety scores.
- There is significant difference by Progressive Muscle Relaxation sessions and pharmacotherapy in pre and post insomnia, anxiety, depression and irritability scores.
- There is significant difference by Progressive Muscle Relaxation in pre and post insomnia, irritability, depression and anxiety scores.

Statement of the problem

The impact of Progressive Muscular Relaxation on the management of anxiety, irritability, insomnia and depression among Opioid dependent prisoners.

MATERIALS & METHODS

Aim

To analyze the efficacy of Progressive Muscle Relaxation on insomnia, depression, anxiety and irritability in Opioid dependent prisoner patients.

Sample

A purposive random sample of 54 Opioid dependent prisoners between age group of 25 – 50 years, admitted in Psychiatry IPD of Geetanjali Medical College & Hospital, Udaipur (Raj.) for de-addiction was used for the study. Among them 28 patients were given only Pharmacotherapy (Group A) other 14 patients were given both Progressive Muscle Relaxation and Pharmacotherapy (Group B) and another 14 patients were given only Progressive Muscle Relaxation (Group C). All patients were assessed psychologically by a qualified Clinical Psychologist. Duration of the study was 3 month.

Tools

Irritability, Depression, Anxiety Scale (IDAS)

It is the revised version of IDAS published in Snaith *et al.* (1978). It is used to measure irritability, depression and anxiety.

Athens Insomnia Scale (AIS)

The scale was developed by Soldatos and colleagues from Athens, Greece in the year 2000. The scale assesses the severity of insomnia using diagnostic criteria set forth by the International Classification of Diseases (ICD-10

Procedure

The study was conducted in the Department of Psychiatry of Geetanjali Medical College & Hospital, Udaipur, Rajasthan during November 2016 to January 2017. Fifty four Opioid dependent prisoner patients were diagnosed by psychiatrist of the department as per the criteria of International Classification of Disorders (ICD - 10) were recruited from Out Patient Department. Irritability, Depression Anxiety Scale (IDAS) was administered to access the irritability, depression and anxiety level of patients and Athens Insomnia Scale (AIS) was used to assess the severity of insomnia using diagnostic criteria set forth by the International Classification of Diseases (ICD-10).A sample of 54 prisoner patients, in which 28 patients who were given only Pharmacotherapy (Group A) & other 14 patients who were given both Progressive Muscle Relaxation and Pharmacotherapy (Group B), and another 14 patients who were given only Progressive Muscle Relaxation (Group C). Here data was collected prior to medication and therapy then after one month of interventions. All the subjects (Group B & C) were subjected to 20 sessions (in 1 month) of Progressive Muscle Relaxation on every day in the week, 30 mints every session and in Group A (1 month of medications).The techniques employed to the patients with the help of a qualified Clinical Psychologist.

Each patient was given homework assignment that they have to practice Progressive Muscle Relaxation at their home daily (two times eg. Morning and before bed time) and record sheet was given to find out whether they are doing it regularly or not. Those patients were regular in their home works was only included in this study.

Prior to the test, all subjects underwent a detail psycho evaluation, general physical examination & systematic examination by psychiatrists and clinical psychologist. Informed consent was obtained from all subjects. The subjects were explained about the nature and purpose of the study.

Parameters of the study

Independent Variables (IV)

1. Psychotherapy (Progressive Muscle Relaxation)
2. Pharmacotherapy (Medication)

Dependent Variable (DV)

1. Depression
2. Anxiety
3. Irritability
4. Insomnia

Inclusion criteria

1. Only male prisoners were taken for the study.
2. Individuals between 25 -50 years of age.

Exclusion criteria

1. Seriously ill patients were excluded from the study.
2. Patients with present clinical evidence of general medical conditions (like hyper or hypo - thyroidism, epilepsy, asthma, head injury, major surgical operations, sexually transmitted diseases etc).
3. Intellectually disabled were excluded.

Analysis of data

In analysis of data, statistical procedure such as t- test was employed to find out the significance of results.

RESULT & DISCUSSION

In the present study, efficacy of PMR on dimensions like depression, anxiety, insomnia and irritability has been assessed in Opioid dependent prisoners. The results of the study discussed as follows;

Table No.1 Values of means, standard deviations and t scores for pre and post test with measures of depression in Group – A

Score	n	Mean	SD	t-Value	P Value
Pre test	28	7.03	1.45	5.37	< 0.0001
Post test	28	5.0	1.38		

The difference is considered to be extremely statistically significant

Table No.2 Values of means, standard deviations and t scores for pre and post test with measures of anxiety in Group – A

Score	n	Mean	SD	t-Value	P Value
Pre test	28	7.78	1.44	5.14	< 0.0001
Post test	28	5.96	1.20		

The difference is considered to be extremely statistically significant

Table No. 3 Values of means, standard deviations and t scores for pre and post test with measures of irritability in Group – A

Score	n	Mean	SD	t-Value	P Value
Pre test	28	7.42	1.03	7.41	< 0.0001
Post test	28	5.35	1.06		

The difference is considered to be extremely statistically significant

Table 4 Values of means, standard deviations and t scores for pre and post test with measures of insomnia in Group – A

Score	n	Mean	SD	t-Value	P Value
Pre test	28	21.25	2.3		
Post test	28	14.82	1.09	13.36	< 0.0001

The difference is considered to be extremely statistically significant

The pre and post depressive, anxiety, irritability and insomnia scores of patients who were subjected to pharmacotherapy only (Group – A) has been indicated in Table 1, 2, 3 & 4 respectively.

Research suggests that, although pharmacotherapy can successfully treat anxiety and depression, psychiatric medications alone or through their interaction with other drugs can produce side effects, and some patients are unwilling to take psychiatric medications. Some patients may be reluctant to take any additional drugs, perceiving that as a sign of loss of control and personal weakness in the handling of their illness. (Leandro PG, 2010).

Table No.5 Values of means, standard deviations and t scores for pre and post test with measures of depression in Group – B

Score	n	Mean	SD	t-Value	P Value
Pre test	14	6.78	2.42		
Post test	14	4.85	1.56	2.50	0.0187

The difference is considered to be statistically significant.

Studies shows that relaxation techniques have been shown as an effective adjunctive therapy for anxiety and depression, providing patients with self-maintenance coping skills to reduce anxiety symptoms. Progressive muscle relaxation (PMR) is a systematic technique used to achieve a deep state of relaxation and has been shown to improve health-related QOL in a variety of medical and psychiatric illnesses. (Ranjita L & Sarada N, 2014)

Table No.6 Values of means, standard deviations and t scores for pre and post test with measures of anxiety in Group – B

Score	n	Mean	SD	t-Value	P Value
Pre test	14	7.78	1.44		
Post test	14	5.96	1.20	3.63	0.0012

The difference is considered to be very statistically significant

Table No.7 Values of means, standard deviations and t scores for pre and post test with measures of irritability in Group – B

Score	n	Mean	SD	t-Value	P Value
Pre test	14	7.42	1.03	5.24	< 0.0001
Post test	14	5.35	1.06		

The difference is considered to be extremely statistically significant

Table No.8 Values of means, standard deviations and t scores for pre and post test with measures of insomnia in Group – B

Score	n	Mean	SD	t-Value	P Value
Pre test	14	21.7	8.42	19.4	< 0.0001
Post test	14	2.11	1.45		

The difference is considered to be extremely statistically significant

Table No.9 Values of means, standard deviations and t scores for pre and post test with measures of depression in Group – C

Score	n	Mean	SD	t-Value	P Value
Pre test	14	10.57	1.22	11.45	< 0.0001
Post test	14	5	1.35		

The difference is considered to be statistically significant.

Table No.10 Values of means, standard deviations and t scores for pre and post test with measures of anxiety in Group – C

Score	n	Mean	SD	t-Value	P Value
Pre test	14	11.78	1.52	13.26	< 0.0001
Post test	14	4.85	1.23		

The difference is considered to be statistically significant.

Another research infers the improvement in anxiety and stress showed the potential of APMRT in the management of prostate cancer patients. Future studies should be carried out over a longer duration to provide stronger evidence for the introduction of relaxation therapy among prostate cancer patients as a coping strategy to improve their anxiety and stress. (Isa M R, 2013)

Table No.11 Values of means, standard deviations and t scores for pre and post test with measures of irritability in Group – C

Score	n	Mean	SD	t-Value	P Value
Pre test	14	10.14	0.94	18.38	< 0.0001
Post test	14	3.78	0.89		

The difference is considered to be statistically significant.

Table No.12 Values of means, standard deviations and t scores for pre and post test with measures of insomnia in Group – C

Score	n	Mean	SD	t-Value	P Value
Pre test	14	21.14	8.57	21.07	< 0.0001
Post test	14	1.83	1.28		

The difference is considered to be statistically significant.

In group A, B & C, results indicated that, there are significant differences in the pre and post t scores of insomnia. Studies suggested that PMR as a treatment is especially useful among patients who insist on not taking medicines, or for those patients in whom tranquillizers may be contraindicated (Alexandru BV & Robert B, 2009).

The sleep disturbances characterizing PTSD are quite profound and demonstrate a limited response rate to conventional pharmacological treatments, thus increasing the need to evaluate the efficacy of other therapeutic approaches. The non-pharmacological therapy like muscle relaxation - was found to have positive effects on sleep disturbance and to be useful in stress symptom reduction. (Ohayon MM & Shapiro CM, 2000)

Table No.13 Values of means for Post mean scores of depression, anxiety and irritability between Group A, B & C

Dimensions	Group A (mean) (n=28)	Group B (mean) (n=14)	Group C (mean) (n=14)
Irritability	5.35	5.35	5
Depression	5.0	4.85	4.85
Anxiety	5.96	5.96	3.78

Graph 1: Values of means for Post mean scores of depression, anxiety and irritability between Group A, B & C

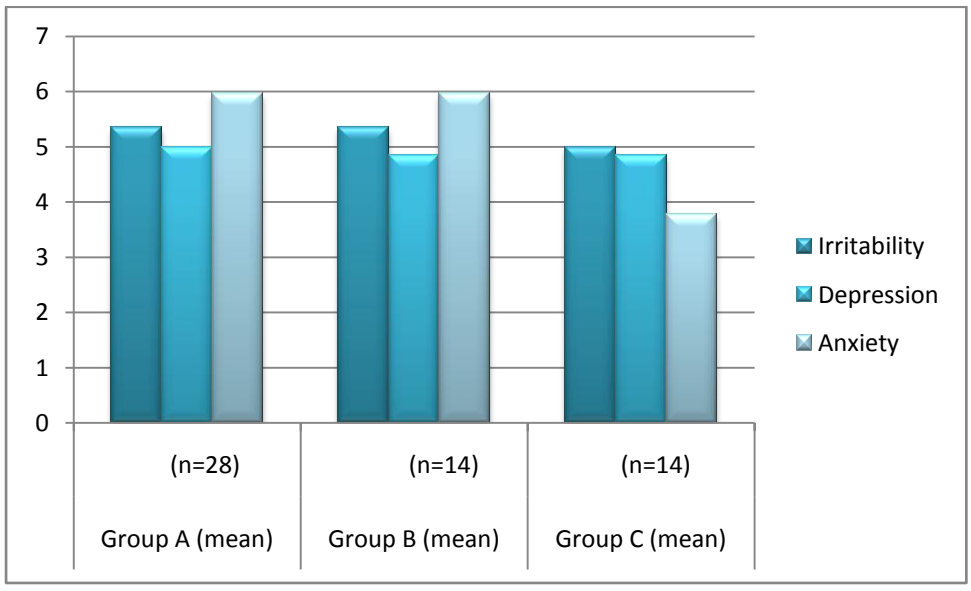
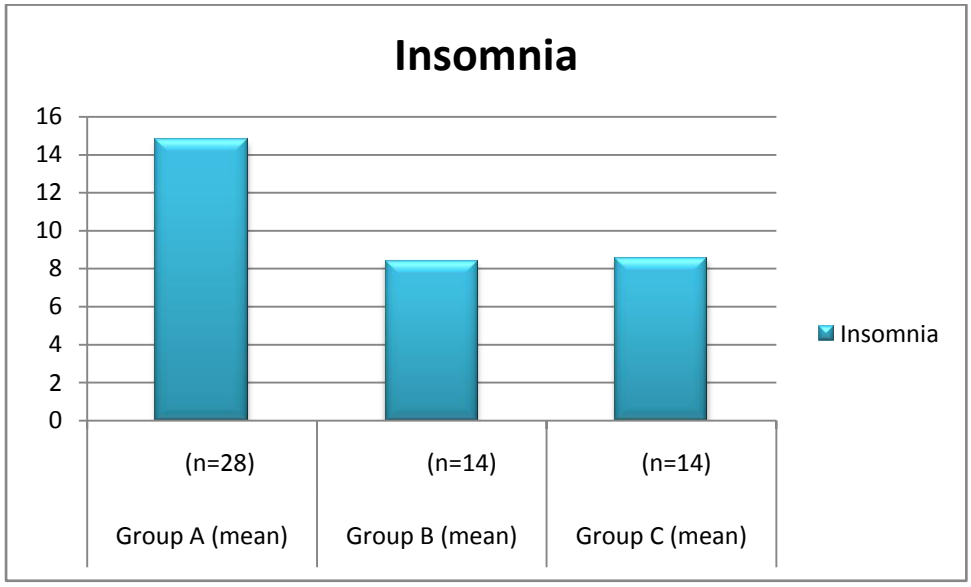


Table No.14 Values of means for Post mean scores of insomnia between Group A, B & C

Dimensions	Group A (mean) (n=28)	Group B (mean) (n=14)	Group C (mean) (n=14)
Insomnia	14.82	8.42	8.57

Graph 11: Values of means for Post mean scores of insomnia between Group A, B & C



From the above findings and literature, we can infer that as like medications, Progressive Muscle Relaxation has positive impact on symptoms like irritability, anxiety, insomnia and depression.

Studies shows the effect of PMR on different medical conditions like, an average reduction in blood pressure was significantly greater in subjects treated with Jacobson's relaxation technique along with medications as compared to only medications and it was concluded that Jacobson's relaxation technique can be used as an adjunctive intervention in the treatment of hypertension (Van Dixhoorn & Duivenvoorden, 1999).

Progressive Muscular Relaxation Exercise program on elderly patients with Psychiatric Illness are effective in their quality of life and their functional activities. Progressive Muscle Relaxation Therapy is a systematic therapy for managing stress and achieving a deep state of relaxation. It is effective for both physical and psychological challenges and widely used strategy for stress relief. With regular practice it gives a complete relaxation (Ramakrishnan M & Kalai C, 2015).

The difference between pre test and post test was found significant in Group A, B & C. This supports all the hypotheses of the study that, there exists a significant difference between pre and post scores of irritability, anxiety, insomnia and depression by the combination of PMR + pharmacotherapy and pharmacotherapy alone and only PMR interventions. Since, the difference between the pre and post test of PMR + Pharmacotherapy (Group – B), only PMR (Group C) is same as that of the pre and post test of only pharmacotherapy interventions (Group – A). So, therefore we can infer that, PMR can improve symptoms alone and in combination with pharmacotherapy.

CONCLUSION

The results of the present study revealed the effect of PMR in the reduction of depression, anxiety, insomnia and irritability in Opioid dependent prisoner's patients. Progressive Muscle Relaxation Therapy was a systematic therapy for managing anxiety, depression, irritability and achieving a deep state of relaxation. Regular practice of PMR has been proven to be effective for both physical and psychological challenges and widely used strategy for depression, insomnia, irritability and anxiety relief. This study provides evidence for decrease or delays in the symptoms and enhances psychological health and well being of the patients. This study provides evidence for supporting psychosomatic intervention in the psychological health and well being of the patients. PMR can provide improvements in the symptoms.

LIMITATIONS & FUTURE SUGGESTIONS

- The study was limited to 54 samples. The establishment of larger sample will provide more generalized results.
- The samples in the groups were not in equal proportion.
- The study could also analyze the effect of PMR with different medications.

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