

Efficacy of Progressive Muscular Relaxation on Coping Strategies and Management of Stress, Anxiety and Depression

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ABSTRACT

Aim: The present study is an attempt to examine the efficacy of Progressive Muscle Relaxation on coping strategies and the management of depression, anxiety and stress in patients. **Background:** The rising prevalence of mental illness in today's world is mainly due to stress, tension or negative life experiences in our day to day life. In this regard, the way in which one's response to stress and negative life events may be more directly connected to mental health and psychopathology. When people experience anxiety, stress or depression in life, one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve that tension. **Sample:** A purposive sample of 60 patients, in which 30 patients who has given only Pharmacotherapy & other 30 patients who has given both Progressive Muscle Relaxation and Pharmacotherapy, between age group of 25 - 65 years diagnosed with depression, anxiety and stress by Psychiatrist, were used for the study from the Out Patient Department of Geetanjali Medical College & Hospital, Udaipur (Raj.). **Research Design:** Pre – post test control group design, **Tools:** Depression Anxiety Stress Scale (DASS) was used to to assess the degree of severity of the core symptoms of depression, anxiety and stress and Coping Strategies Inventory (CSI) was used to assess coping thoughts and behaviors in response to a specific stressor. **Result:** The results of t- test showed that, there exists a significant difference by PMR sessions and pharmacotherapy in pre and post scores of coping strategies, stress, anxiety and depression. There exists a significant difference by pharmacotherapy in pre and post scores of depression. And difference between the pre test and post test scores of dimensions like anxiety, depression, stress and coping strategy of patients who were given PMR+ Pharmacotherapy was found higher than the pre and post scores of dimensions like anxiety, depression, stress and coping strategy of patients who were given only Pharmacotherapy. **Conclusion:** The study concluded that, regular practice of PMR has been proven to decrease the anxiety, depression and stress symptoms. PMR is an efficient method to enhance individual's ability to cope with their daily life pressure and to use specific coping strategies in response to stressful events.

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Received: December 31, 2017; Revision Received: January 6, 2018; Accepted: January 25, 2018

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Keywords: *Progressive Muscle Relaxation, Pharmacotherapy, Coping Strategy, Anxiety, Depression & Stress*

In everyday life people have to encounter with many stress and negative life situations. Individuals are confronted with demands, conflicts, and adjustments to novel environments and social interactions. These concerns may cause individuals to experience stress. Stress may yield a variety of responses such as anxiety and depression (Cohen, 1994). Coping responses (i.e., stress, anxiety, and depression) are behaviors that occur after stressors have been engaged (Matheny, et al., 2003, Endler & Parker, 1999). The individual's ability to be aware and seek assistance when their stress level becomes elevated is a valuable coping strategy. Coping strategies influence the extent to which these responses cause distress and effects their functioning and decision-making. Stress, anxiety, and depression are psychological responses individuals experience as a result of their coping strategies.

Stress is a psychological response to aversive stimuli that affects individuals internally and externally. Individual's stressors impact their psychological well-being (APA, 2006). Stress is a body's method of reacting to a challenge. Sometimes it leads to depression, anxiety and so on. Physiological or biological stress is an organism's response to a stressor such as an environmental condition. However, stress may cause a negative impact by having an adverse reaction.. Physiological responses are caused by stress and manifest in poor health where the person is more susceptible to infection as a result of a weakened immune system (Hays, Sherbourne, Mazel, 1995). Anxiety and depression may be indicative of poor coping resources and elevated levels of stress (Hays, Sherbourne, Mazel, 1995). Stress involves changes affecting nearly every system of the body, influencing how people feel and respond (Hays, et al., 1995).

Anxiety is also a psychological response to aversive situations. Anxiety is a mood characterized by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune (APA, 2006). The future threat may be real or imagined, internal or external. It may be an identifiable situation or a more vague fear of the unknown. Anxiety is characterized most commonly as a diffuse, unpleasant, vague sense of apprehension, often accompanied by autonomic symptoms such as headache, perspiration, palpitations, tightness in the chest, mild stomach discomfort and restlessness indicated by an inability to sit or stand still for long. Anxiety disorders are associated with significant morbidity and often are chronic and resistant to treat. Anxiety disorders can be viewed as a family of related but distinct mental disorders, which include 1) panic disorder, 2) agoraphobia, 3) specific phobia, 4) social anxiety disorder or phobia, and 5) generalized anxiety disorder

Depression is not only a psychological response to aversive situations but is also a psychological disorder characterized by a dysphoric mood (APA, 2006). The symptomatology is listed in the DSM-IV-TR. Dysphoria is a mood that varies in severity

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from a fluctuation in normal mood to an extreme feeling of sadness, pessimism, and dependency. Dysphoria is also a category of Major Depressive Disorders characterized by sadness, discontent and sometimes restlessness (APA, 2006). The most frequently diagnosed form of depression is Major Depressive Disorder (MDD). MDD is a broad diagnostic category encompassing depressions that are short lived, chronic, mild in intensity, and severe with prominent psychotic features. A major depressive episode must last at least 2 weeks, and typically a person with a diagnosis of a major depressive episode also experiences at least four symptoms from a list that includes changes in appetite and weight, changes in sleep and activity, lack of energy, feelings of guilt, problems of thinking and making decisions and recurring thoughts of death or suicide.

A study conducted by Times of India in 2003, reported that, one of the every four Indians are affected by anxiety disorders and 10% are depressed. Stress, anxiety and depression may result in physiological responses to stress. Responses to stress include adaptation, psychological coping such as stress management, relaxation techniques etc.

Coping means to invest own conscious effort, to solve personal and interpersonal problems, in order to try to master, minimize or tolerate stress and conflict. Both personal and environmental factors influence the selection of coping processes. People strive to retain, protect, and build coping resources as they experience threats that result in perceived potential loss of resources (Matheny, Aycok, Curlette, Junker, 2003). Coping involves cognitive and behavioral strategies that individual's rely to address the demands of a situation caused by stress and to manage aversive situations (APA, 2006). Problem-focused coping is directed at managing the problem, whereas emotion-focused coping processes are directed at managing the negative emotions. The psychological coping mechanisms are commonly termed *coping strategies* or *coping skills*.

According to Barlow in 2007, coping strategies are cognitive responses to emotion eliciting events that consciously or unconsciously attempt to modify the magnitude and/or type of individual's experiences or the event itself. Coping strategies have correlations with perceived level of stress, anxiety, and depression (Heads, 2009; Uqdah, et al., 2009).

Coping strategies are psychological patterns that individuals use to manage thoughts, feelings, and actions encountered during various stages of ill health and treatments. These are behavioral and cognitive tactics used to manage crises, conditions, and demands that are appraised as distressing. Coping strategies are employed when the demands of a situation are perceived as taxing, exceeding one's resources to reduce the negative emotions and conflict caused by stress (APA, 2006; Matheny, et al., 2003).

Coping strategies refer to stress management techniques that involve a number of responses or actions. There are a, varieties of responses on which one draws, consciously or unconsciously to manage painful emotions, including physiological, cognitive and behavioral

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strategies. Responses to stress include adaptation, psychological coping such as stress management, relaxation techniques etc. Research suggests coping mediates the effects of anxiety and depression. Stress, anxiety, and depression are psychological responses individuals experience as a result of their coping strategies. Resiliency to stress is when coping strategies prevent feelings of anxiety and depression.

So when people experience anxiety, stress or depression in life, one of the ways our body responds is with muscle tension. Muscle tension is commonly associated with stress, anxiety and fear as part of a process that helps our bodies prepare for potentially dangerous situations. Even though some of those situations may not actually be dangerous, our bodies respond in the same way. Sometimes we don't even notice how our muscles become tense, but perhaps you clench your teeth slightly so your jaw feels tight, or maybe your shoulders become. Muscle tension can also be associated with backaches and tension headaches. One method of reducing muscle tension that people have found helpful is through a technique called Progressive Muscle Relaxation (PMR). In progressive muscle relaxation exercises, you tense up particular muscles and then relax them, and then you practice this technique consistently. When our body is physically relaxed, we cannot feel anxiety. 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.

Progressive muscle relaxation [PMR] was first identified by Jacobson in 1934 as tensing and releasing of 16 muscle groups. Wolpe adapted it for use with systematic desensitization in 1948 and Bernstein and Borkovec in 1973 studied adjustments to the technique to fit cognitive behavioral stress management. Some of these adjustments are: 7 and 4 muscle groups, relaxation through recall, recall and counting, and counting. 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. 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. 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.

Thus the present study was conducted to study the impact of Progressive Muscular Relaxation on Coping strategies and management of anxiety depression and stress among patients.

SIGNIFICANCE OF THE STUDY

The study on the topic “**Efficacy of Progressive Muscle Relaxation on Coping Strategies and Management of Stress, Anxiety and Depression**” is very relevant in the present society. The rising prevalence of mental illness in the world has become a public health crisis with depression and anxiety represented the most common and debilitating psychiatric disorders. It is mainly due to the stress and tension we experience in our day to day life. People with depression and anxiety more often perceive life events as threatening and difficult to deal with. The depressive and anxiety symptoms negatively correlate with proactive coping, described as one of the most effective strategies focused on the future and expanding personal resources, including autonomous and individual goal-setting, and their consequent realization. People tried to use specific efforts or different coping strategies, both behavioral and psychological that employs to master, tolerate, reduce or minimize stressful events. When individual fails to cope with stress, exhaustion occurs, in which bodily resources are depleted and the organism loses its ability to resist – and further exposure to stress can lead to illness and death. So it has been argued that the way in which one responds to stress and negative life events may be more directly connected to mental health and psychopathology than the nature of the stressful experience itself.

When people experience anxiety, stress or depression in life, one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve that tension. When our body is physically relaxed, we cannot feel anxiety. 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.

Statement Of The Problem

- To analyze the role of progressive muscle relaxation on coping strategies and the management of stress, anxiety and depression in adults.

Defining Key Words

1. **PROGRESSIVE MUSCLE RELAXATION** – It is a technique for learning to monitor and control the state of muscular tension.
2. **COPING STRATEGIES** – It refers to the specific efforts, both behavioral and psychological, that people employ to master, tolerate, reduce, or minimize stressful events.
3. **DEPRESSION** – Mental state characterized by feelings of sadness, loneliness, despair, low self – esteem, and self – reproach; accompanying signs include psychomotor retardation or, at times, agitation, withdrawal from interpersonal contact, and vegetative symptoms, such as insomnia and anorexia.
4. **ANXIETY** – Feeling of apprehension caused by anticipation of danger, which may be internal or external.

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5. **STRESS** – It refers psychological and physical strain or tension generated by physical, emotional, social, economic or occupational circumstances, events or experiences that are difficult to manage or endure.

Objectives Of The Study

1. To study if there exists a significant difference between the pre and post test scores of coping strategies, stress, anxiety and depression in patients who has given only Pharmacotherapy
2. To study if there exists a significant difference between the pre and post scores of depression, anxiety stress and coping strategies in patients who has given both Pharmacotherapy and PMR

Hypotheses

1. There exists a significant difference between pre and post scores of coping strategy, stress, anxiety and depression by PMR sessions and pharmacotherapy interventions.
2. There exists a significant difference between pre and post scores of coping strategy, stress, anxiety and depression by pharmacotherapy.

REVIEW OF LITERATURE

Awareness of mental illness and its societal impact has grown dramatically in recent years, leading the prevalence of psychiatric disorders to be framed as a contemporary public health crisis (Melton, 2010). Specifically, depression and anxiety are the most commonly reported and diagnosed psychiatric disorders both globally (WHO, 2008) and in the United States (NIMH, 2011). Current epidemiological research estimates that almost 15 million adults in the United States have major depression and 40 million adults have some form of an anxiety disorder (NIMH, 2011). These numbers are even more striking when one considers that many cases of mental illness are either undiagnosed or not reported.

Depression, Anxiety & Stress

Applied mental health professionals and researchers across disciplines continue to work to advance understanding of contributors to these illnesses in order to identify effective methods of prevention and intervention. Numerous therapeutic and psychopharmacological treatments for depression and anxiety exist and are continually studied and improved upon. Much is still unknown; however, about the etiology of these illnesses, particularly regarding how psychological and psychosocial contributors to the development of depression, stress and anxiety can be identified and addressed, ideally before the illness develops. (Samuel Atindanbila, 2008)

Patients treated for depressive disorders in stressful situations more often than healthy people use coping strategies based on behavioral disengagement and problem denial, and have more difficulties in positive reinterpretation of stressful events. In the entire population, women and men do not significantly differ in preferred ways of coping with stress. Mood disorders

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like recurrent depressive disorder or depressive episode may be an important factor contributing to the negative assessment of ability to cope with difficult situations and a greater tendency to perceive stressful events as overwhelming (**Agata Orzechowska & Colleagues, 1987**)

Coping Strategies

Examination of emotion-oriented, task-oriented, and avoidance coping strategies provided insight into the various coping strategies. Avoidance coping strategies were further divided into social diversion and distraction. African-American women who reportedly experienced high levels of stress and low levels of anxiety and depression used a combination of coping strategies. Emotional-oriented coping was found positively correlated with anxiety and depression. Task-oriented and avoidance coping were also correlated with lower levels of anxiety and depression. Research suggests African American women's coping strategies have an impact on their academic performance (**Adrienne D. Gilmore G. Solomon Osho & Angela B. Heads , 2008**)

Appropriate interventions in an early time may help to reduce anxiety, stress, depression etc. (**Joy, E.F & Colleagues, 2011**)

Progressive Muscle Relaxation

A recent study in medical science concluded that 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. (**Subhash M Khatri & Colleagues, 2013**)

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. (**Patel,P, 1998**)

METHOD

Aim

- To analyze the efficacy of Progressive Muscle Relaxation on coping strategies and management of depression, anxiety and stress in patients.

Sample

After the permission granted by the ethical committee of Geetanjali Medical College & Hospital Udaipur, Rajasthan, the study was carried out at the department of psychiatry, a sample of 60 patients, in which 30 patients who were given only Pharmacotherapy (Group A) & other 30 patients who were given both Progressive Muscle Relaxation and Pharmacotherapy(Group B), between age group of 25 - 65 years diagnosed with depression,

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anxiety and stress by Psychiatrist, were used for the study from the Out Patient Department of Geetanjali Medical College & Hospital, Udaipur (Raj.) by Purposive Sampling Method. All patients were assessed psychologically by a qualified Clinical Psychologist. Duration of the study was 7 months.

Tools

- **Depression Anxiety Stress Scale (DASS)** - The Depression, Anxiety, and Stress Scales were developed by Lovibond S. H & Lovibond P. F. in 1995. The main purpose of the DASS is to isolate and identify aspects of emotional disturbance; for example, to assess the degree of severity of the core symptoms of depression, anxiety or stress. **DASS**, the Depression Anxiety Stress Scales,^[1] is made up of 42 self-report items to be completed over five to ten minutes, each reflecting a negative emotional symptom.^[2] Each of these is rated on a four-point Likert scale of frequency or severity of the participants' experiences over the last week with the intention of emphasizing states over traits. These scores ranged from 0, meaning that the client believed the item "did not apply to them at all", to 3 meaning that the client considered the item to "apply to them very much, or most of the time". The order of the 42 items has been randomized so that items of the same scale are not clustered together. Each of the scales is then broken down into subscales comprising two to five items each. The **Depression** scale has subscales assessing dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest/involvement, anhedonia and inertia. The **Anxiety** scale assesses autonomic arousal, skeletal muscle effects, situational anxiety and subjective experience of anxious affect. The **Stress** scale's subscales highlight levels of non-chronic arousal through difficulty relaxing, nervous arousal and being easily upset/agitated, irritable/over-reactive and impatient.

The reliability scores of the scales in terms of Cronbach's alpha scores rate the Depression scale at 0.91, the Anxiety scale at 0.84 and the Stress scale at 0.90 in the normative sample. The means and standard deviations for each scale are 6.34 and 6.97 for depression, 4.7 and 4.91 for anxiety and 10.11 and 7.91 for stress, respectively. The Depression and Stress scales meet the standard threshold requirement of 0.9 for research; however, the Anxiety scale still meets the 0.7 threshold for clinical applications, and is still close to the 0.9 required for research.

Scoring: The sum of the relevant 14 items for each scale constitutes the participants' scores for each of Depression, Anxiety and Stress.

- **Coping Strategies Inventory (CSI)** –The scale was developed by David .L. Tobin in 1984. The purpose of this questionnaire is to find out the kinds of situation that trouble people in their day to day lives and how people deal with them. The CSI is a 72 - item self-report questionnaire designed to assess coping thoughts and behaviors in response to a specific stressor. The format of the CSI is adapted from the Lazarus “Ways of Coping questionnaire”. The 72 questions is in a 5 – item Likert format, which includes 1-None, 2- A little, 3- Some, 4- Much, 5 – Very Much.

The reliability scores of the scales in terms of Cronbach's alpha scores range from .71 to .94 (m = 83). The factor structure of the CSI supports a hierarchical relationship between the

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proposed subscales. There are a total of 14 subscales on the CSI including eight primary scales, four secondary scales and 2 tertiary scales (not included in the present study). It includes

Problem focused engagement dimensions : (problem solving + cognitive restructuring)

Emotion focused engagement dimensions : (express emotions + social support)

Problem focused disengagement dimensions: (problem avoidance + wishful thinking)

Emotion focused disengagement dimensions: (self criticism + social withdrawal)

Scoring: To obtain the raw scores for a subscale, simply add the item scores.

Procedure

After taking permission from the ethical committee of Geetanjali Medical College & Hospital Udaipur, Rajasthan, the study was conducted in the Department of Psychiatry of Geetanjali Medical College & Hospital, Udaipur, Rajasthan during the period from February 2017 to August 2017. Sixty patients were diagnosed with anxiety, depression and stress as by psychiatrist of the department as per the criteria of International Classification of Disorders (ICD - 10) was recruited from Out Patient Department. Depression Anxiety Stress Scale (DASS), Coping Strategies Inventory [CSI] were used for individual assessment. DASS was administered to identify aspects of emotional disturbance; for example, to assess the degree of severity of the core symptoms of depression, anxiety or stress. The CSI was used to assess coping thoughts and behaviors in response to a specific stressor. A sample of 60 patients, in which 30 patients who were given only Pharmacotherapy (**Group A**), which is the control group & other 30 patients who were given both Progressive Muscle Relaxation and Pharmacotherapy (**Group B**), which is the experimental group. Here data was collected prior to medication and therapy then after 4 months of **Pharmacotherapy and PMR**. All the subjects (in experimental group) were subjected to 20 sessions (in 3 months) of Progressive Muscle Relaxation on specified days in the week, 30 mins every session. 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)

Progressive Muscle Relaxation

Dependent Variable (DV)

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1. Depression
2. Anxiety
3. Stress
4. Coping Strategies

Research Design

Pre-Post test control group design

Interventions (IV)	No. of pts.	Total
Group – A Pharmacotherapy (Control group)	30	60
Group – B PMR + Pharmacotherapy	30	

Inclusion Criteria

1. Individuals between 25 -65 years of age.
2. Both males & females were taken for the study.
3. Both rural and urban patients were taken for the study.
4. Pregnant ladies were included.

Exclusion Criteria

1. Seriously ill patients were excluded from the study.
2. Patients with present clinical evidence of drug / substance abuse, or general medical conditions (like hyper or hypo-thyroidism, epilepsy, asthma, head injury, major surgical operations etc).
3. Illiterates and those who were not able to understand the procedure were excluded
4. Intellectually disabled were excluded.

Analysis Of Data

The scores obtained on different tests of the study were analyzed statistically. In analysis of data, statistical procedure such as **t- test** was employed. It was used to find out the significance of results.

RESULT

Table No 1, Pre and post Means, Standard deviations and t scores on Measures of depression of patients. Group – A (Pharmacotherapy)

Pre Depression Score		Post Depression Score		t-Score	P Value
Mean	SD	Mean	SD		
31.56	6.56	24.13	3.69	5.40	<0.0001*

The t- score was found to be 5.40 and p value was found to be <0.0001

*By conventional criteria, the difference is considered to be extremely Statistically significant

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Table No 2, Pre and post Means, Standard deviations and t Scores on Measures of anxiety of patients. Group - A (Pharmacotherapy)

Pre Anxiety Score		Post Anxiety Score		t-Score	P Value
Mean	SD	Mean	SD		
24.7	5.64	22.8	5.84	1.28	0.2050

The t- score was found to be 1.28 and p value was found to be 0.2050. By conventional criteria, the difference is considered to be statistically not significant.

Table No 3, Pre and Post Means, Standard deviations and t Scores on Measures of stress of patients. Group - A (Pharmacotherapy)

Pre Stress Score		Post Stress Score		t-Score	P Value
Mean	SD	Mean	SD		
28.9	7.07	27.93	5.82	0.5802	0.564

The t- score was found to be 0.58 and p value was found to be 0.564. By conventional criteria, the difference is considered to be statistically not significant.

Table No 4, Pre and Post t score and p value on Coping Strategies (CS) of patients. Group - A (Pharmacotherapy)

No	Coping Strategies	t score	p value
	Problem Focused Engagement Dimensions	0.887	0.378
1.	Problem Solving		
2.	Cognitive Restructuring	0.673	0.503
	Emotion focused Engagement Dimensions	0.057	0.95
3.	Express Emotions		
4.	Social Support	1.443	0.15
	Problem Focused Disengagement Dimensions	1.786	0.079
5	Problem Avoidance		
6.	Wishful Thinking	1.053	0.296
	Emotion Focused Disengagement Dimensions	2.305	0.0248*
7.	Self Criticism		
8.	Social Withdrawal	3.95	0.0002**

* By conventional criteria, the difference is considered to be statistically significant

**By conventional criteria, the difference is considered to be extremely statistically significant

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Table No.5 Pre and post Means, Standard deviations and t scores on Measures of depression of patients. Group - B (Pharmacotherapy + PMR)

Pre Depression Score		Post Depression Score		t-Score	P Value
Mean	SD	Mean	SD		
28.4	11.20	12.9	1.40	7.5216	< 0.0001*

The t- score was found to be 5.40 and p value was found to be <0.0001

* By conventional criteria, the difference is considered to be extremely Statistically significant

Table No.6, Pre and post Means, Standard deviations and t Scores on Measures of anxiety of patients. Group - B (Pharmacotherapy + PMR)

Pre Anxiety Score		Post Anxiety Score		t-Score	P Value
Mean	SD	Mean	SD		
21.7	7.50	12.15	1.73	6.795	< 0.0001*

The t- score was found to be 6.795 and p value was found to be <0.0001

* By conventional criteria, the difference is considered to be extremely statistically significant

Table No. 7, Pre and Post Means, Standard deviations and t Scores on Measures of stress of patients. Group - B (Pharmacotherapy + PMR)

Pre Stress Score		Post Stress Score		t-Score	P Value
Mean	SD	Mean	SD		
30.66	5.03	11.96	1.5	19.513	< 0.0001*

The t- score was found to be 19.513 and p value was found to be < 0.0001

* By conventional criteria, the difference is considered to be extremely statistically significant

Table No .8, Pre and Post t score and p value on Coping Strategies (CS) of patients. Group - B (Pharmacotherapy + PMR)

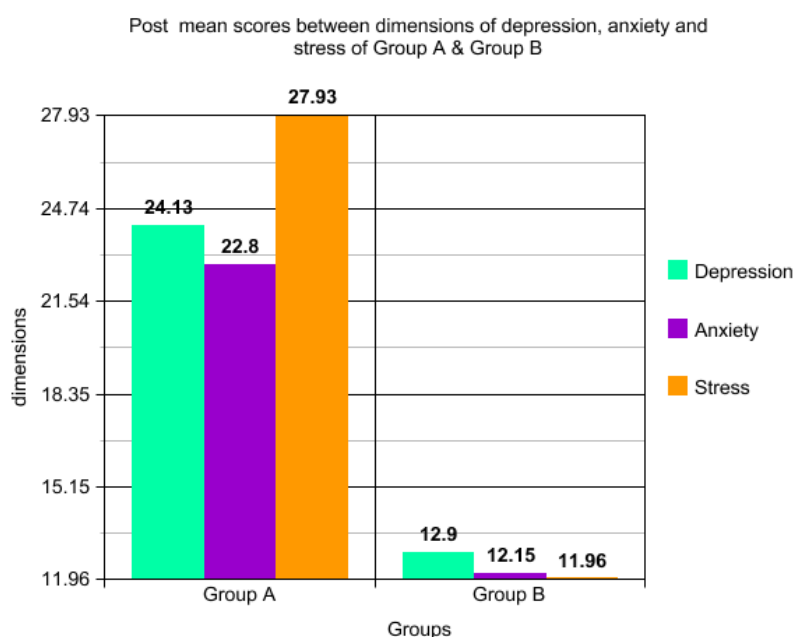
No	Coping Strategies	t score	p value
	Problem focused Engagement Dimensions	15.6144	< 0.0001*
1.	Problem Solving		
2.	Cognitive Structuring	15.274	< 0.0001 *
	Emotion focused Engagement Dimensions	20.9056	< 0.0001*
3.	Express Emotions		
4.	Social Support	24.5020	< 0.0001*
	Problem focused Disengagement		

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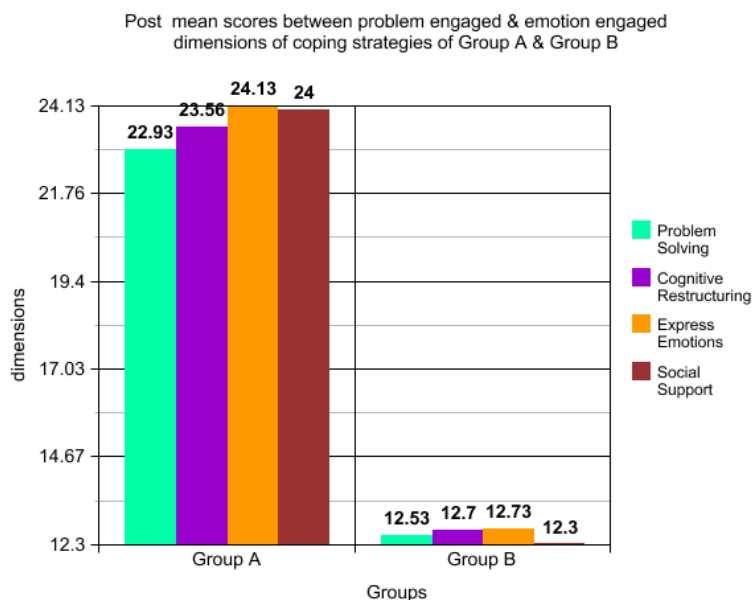
	Dimensions	21.723	< 0.0001*
5.	Problem Avoidance		
6.	Wishful Thinking	19.44	< 0.0001*
	Emotion Focused Disengagement Dimensions		< 0.0001*
7.	Self Criticism	21.014	
8.	Social Withdrawal	20.4599	< 00001*

* By conventional criteria, the difference is considered to be extremely statistically significant

Graph 1 Post mean scores between depression, anxiety and stress of Group A & Group B



Graph 2 Post mean scores between coping strategies of Group A & Group B



DISCUSSION

In the present study, efficacy of PMR on dimensions like depression, anxiety, stress and coping strategies has been assessed. A total of 60 patients, in which 30 patients who were given only Pharmacotherapy (Group A) & other 30 patients who were given both Progressive Muscle Relaxation and Pharmacotherapy (Group B), between age group of 25 - 65 years diagnosed with depression, anxiety and stress by Psychiatrist were included in the study. Four variables were chosen for the purpose of study viz: depression, anxiety, stress and coping strategies. The results of the study discussed as follows; Table 1 indicates the pre and post depressive scores of patients who are subjected to pharmacotherapy only (Group – A). The t-test reveals that there was significant difference ($t = 5.40$, $p < 0.0001$) between pre and post depressive scores. It was found significant, which means that pharmacotherapy affects the depressive symptoms.

Table 2 describes the pre and post anxiety scores of patients who are subjected to pharmacotherapy only (Group – A). The t-test refers that there was no significant difference ($t = 1.28$, $p = 0.2050$) between pre and post anxiety scores.

Table 3 shows the pre and post stress scores of patients who are subjected to pharmacotherapy only (Group - A). There was no significant difference ($t = 0.5802$, $p = 0.564$) between pre and post stress scores as described by the t –test.

Table 4 indicates the pre and post cognitive strategies scores of patients who are subjected to pharmacotherapy only (Group – A). There was significant difference between pre and post scores on emotion focused disengagement dimensions of coping strategies like self criticism ($t = 2.305$, $p = 0.0248^*$), social withdrawal ($t = 3.95$, $p = 0.0002^*$) and there was no significant difference in emotion focused engagement dimensions of coping strategies like problem solving ($t = 0.887$, $p = 0.378$) and cognitive restructuring ($t = 0.673$, $p = 0.503$), and there was no significant difference in problem focused disengagement dimensions of coping strategies like expressed emotions ($t = 0.057$, $p = 0.95$) and problem avoidance ($t = 0.786$, $p = 0.079$), and there was no significant difference in emotion focused disengagement dimensions of coping strategies like wishful thinking ($t = 1.053$, $p = 0.296$) and social support ($t = 1.443$, $p = 0.15$). It was found significant which means that pharmacotherapy affects the emotion focused disengagement dimensions of coping strategies like self criticism, social withdrawal. There was very little support for the use of pharmacological treatments for people with depression, anxiety and stress when compared to both PMR and Pharmacotherapy (Group – B)

Table 5 shows the pre and post depressive scores of patients who are subjected to pharmacotherapy and progressive muscle relaxation (Group – B). There was significant difference ($t = 7.521$, $p < 0.0001$) between pre and post depressive scores.

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Table 6 describes the pre and post anxiety scores of patients who are subjected to pharmacotherapy and progressive muscle relaxation (Group – B). There was significant difference ($t= 6.795$, $p <0.0001$) between the pre and post scores

Table 7 indicates the pre and post stress scores of patients who are subjected to pharmacotherapy and progressive muscle relaxation (Group – B). There was significant difference ($t= 19.513$, $p <0.0001$)

Table 8 indicates the pre and post cognitive strategies scores of patients who are subjected to pharmacotherapy and progressive muscle relaxation (Group - B) There was significant difference between pre and post scores of emotion focused disengagement dimensions of coping strategies like self criticism ($t= 21.014$, $p <0.00001$), social withdrawal ($t=20.4599$, $p <0.0001$) and problem focused engagement dimensions of coping strategies like problem solving ($t =15.6144$, $p <0.0001$), cognitive restructuring ($t=15.274$, $p <0.0001$), and emotion focused engagement dimensions of coping strategies like expressed emotions($t= 20.9056$, $p <0.0001$), problem avoidance($t= 21.723$, $p <0.0001$), and problem focused disengagement dimensions of coping strategies like wishful thinking($t= 1.053$, $p <0.0001$) and social support($t=24.5020$, $p <0.0001$).

Both graphical representations indicate lower levels of post mean scores in Group B than group A. It describes that lower levels of post mean scores in depression, anxiety, stress and coping strategy dimensions in Group B (PMR + Pharmacotherapy) than Group A (Pharmacotherapy)

By the addition of PMR with pharmacotherapy or in Group - B, significant difference found between pre and post scores of all the dimensions of coping strategies like and problem focused engagement dimensions, emotion focused engagement dimensions, problem focused disengagement dimensions and emotion focused disengagement dimensions. So the findings infer that PMR affects and improves the coping strategies than the pharmacotherapy. It enhances the emotional approaches of coping, when individual encounter situation that strain or exceed their psychosocial resources. They typically engage in efforts to change aspects of the situation itself (Problem Focused Coping) and to manage their emotions regarding the situation (Emotion Focused Coping). The effective coping abilities lead to improve the symptoms like anxiety, depression and stress in patients.

Findings in a recent study supported that, examination of emotion-oriented, task-oriented, and avoidance coping strategies provided insight into the various coping strategies. Avoidance coping strategies were further divided into social diversion and distraction. African-American women who reportedly experienced high levels of stress and low levels of anxiety and depression used a combination of coping strategies. Emotional-oriented coping was found positively correlated with anxiety and depression. Task-oriented and avoidance coping were

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also correlated with lower levels of anxiety and depression. (**Adrienne D. Gilmore G. Solomon Osho & Angela B. Heads , 2008**)

A recent study in medical science concluded that 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. (**Subhash M Khatri & Colleagues, 2013**)

Pharmacotherapy alone (Group – A) provides little support for the study when compared to the combined intervention of both PMR and Pharmacotherapy (Group – B). It alone affects depression and only two dimensions of coping strategies. 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. 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. (**Yunping Li et al., 2015**)

Patients treated for depressive disorders in stressful situations more often than healthy people use coping strategies based on behavioral disengagement and problem denial, and have more difficulties in positive reinterpretation of stressful events. In the entire population, women and men do not significantly differ in preferred ways of coping with stress. Mood disorders like recurrent depressive disorder or depressive episode may be an important factor contributing to the negative assessment of ability to cope with difficult situations and a greater tendency to perceive stressful events as overwhelming (**Agata Orzechowska & Colleagues, 1987**)

Coping strategies are important in determining the psychological impact stress will have on individual. Coping strategies are psychological patterns that individuals use to manage thoughts, feelings, and actions encountered during various stages of ill health and treatments. These are behavioral and cognitive tactics used to manage crises, conditions, and demands that are appraised as distressing. Coping strategies are employed when the demands of a situation are perceived as taxing, exceeding one's resources to reduce the negative emotions and conflict caused by stress (**APA, 2006; Matheny, et al., 2003**). Research suggests coping mediates the effects of anxiety and depression. Stress, anxiety, and depression are psychological responses individuals experience as a result of their coping strategies. Resiliency to stress is when coping strategies prevent feelings of anxiety and depression.

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When individual fails to cope with stress, exhaustion occurs, in which bodily resources are depleted and the organism loses its ability to resist – and further exposure to stress can lead to illness and death. So it has been argued that the way in which one responds to stress and negative life events may be more directly connected to mental health and psychopathology. When people experience anxiety, stress or depression in life, one of the ways our body responds is with muscle tension. Progressive muscle relaxation is a method that helps to relieve that tension. When our body is physically relaxed, we cannot feel anxiety. 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.

So the findings of present study revealed that in combination of both Pharmacotherapy and Progressive Muscle Relaxation (Group – B) has significant effect on dimensions like depression, anxiety, stress and coping strategies.

PMR was efficient enough to improve the coping strategies in patients like - the Problem Focused Engagement coping efforts. These are the cognitive and behavioral strategies to change the situation or to change the meaning of the situation for the individual. The problem focused engagement coping efforts are focused on the stressful situation itself. It also improves the Emotion Focused Engagement dimensions of coping strategies. These coping efforts are focused on the individual's emotional reaction to stressful situation. It helps to reflect open communication of feelings to others and increased social involvement, especially with family and friends. The Problem Focused Disengagement coping efforts are also affected by PMR. It focuses on cognitive and behavioral strategies to avoid the situation. It reflects denial, avoidance, and an ability or reluctance to look at the situation differently. Also affects the Emotion Focused Disengagement coping efforts. It involves shutting oneself and one's feelings off from others, and criticizing or blaming oneself for what happened.

Henriques *et al* argue that the skills, which are convenient and available and have few complications, are welcomed better by individuals and applied in their life to solve their problems and fulfill their needs. **White *et al*** believe that when individuals are under pressure, they should try to reduce its effects through psychological and social skills. One of the suggested methods to reduce anxiety is relaxation, of which one of the most applicable techniques is progressive muscle relaxation (PMR). PMR or active relaxation is a technique in which the individuals attain relaxation through active contraction of a group of special muscles and then releasing them in a progressive manner and reach self-peace. (**Henriques *et al***)

Progressive Muscle Relaxation Therapy was a systematic therapy for managing stress and achieving a deep state of relaxation. It was effective for both physical and psychological challenges and widely used strategy for stress relief. With regular practice it gives a complete relaxation. (**Patel,P, 1998**)

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The difference between pre test and post test was found significant. This supports the first hypotheses of the study that, there exists a significant difference between pre and post scores of coping strategy, stress, anxiety and depression by the combination of PMR + pharmacotherapy interventions. Since, the difference between the pre and post test of PMR + Pharmacotherapy (Group – B) is significantly higher than the pre and post test of pharmacotherapy only Group – A). So, therefore we can infer that, PMR can improve symptoms and coping abilities in combination with pharmacotherapy.

MAJOR FINDINGS

- There exists a significant difference by PMR sessions and pharmacotherapy (Group – B) in pre and post scores of coping strategies, stress, anxiety and depression.
- There exists a significant difference by pharmacotherapy (Group – A) in pre and post scores of depression.
- There exists a significant difference by pharmacotherapy (Group – A) in pre and post scores of emotion focused disengagement dimensions of coping strategies like self criticism and social withdrawal.
- Difference between the pre test and post test scores of dimensions like anxiety, depression, stress and coping strategy of patients who were given PMR+ Pharmacotherapy (Group – B) was found higher than the pre and post scores of dimensions like anxiety, depression, stress and coping strategy of patients who were given only Pharmacotherapy (Group – A)

Limitations & Future Suggestions

- The study was limited to 60 samples. The establishment of larger sample will provide more generalized results.
- The study could also include a comparison between male and female population.
- The study could also include factors such as difference in SES, levels of education attainment, types of family etc.
- The study could also examine the effect of PMR and time on anxiety, depression, stress and quality of life (QOL).
- The study could also analyze the effect of PMR with different medications.

CONCLUSION & IMPLICATIONS

The way in which individual manage and regulate emotion is central to mental health. The results of the present study revealed the effect of PMR on reduction of depression, anxiety and stress. PMR is an efficient method to enhance individual's ability to cope with their daily life pressure and to use specific coping strategies in response to stressful events. PMR is a primary method that can be easily learned to achieve relaxation. It is an effective intervention in reducing emotional distress. Regular practice of PMR has been proven to decrease or delay the onset of conditioned symptoms and enhance coping ability in a variety of stressful situations and improves feelings of self-control. This study provides evidence for supporting psychosomatic intervention in the psychological health and well being of the patients. It

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implies that, the combination of PMR + Pharmacotherapy can provide better results than individual interventions.

REFERENCES

- Ah Min, Jung & Yu Jin; (2013). "Cognitive Emotion Regulation Strategies Contributing to Resilience in Patients with Depression & Anxiety", *Psycho Linguo*. Vol 39, pp 12 -16
- American Psychological Association (2006). *APA dictionary of psychology*. APA.
- Bakhshayesh , Ali ; (2012). "A comparison of general health and coping strategies in fertile and infertile women in Yazd", *Iran J Reprod Med* . Vol 10 (6), pp 601 – 606
- Basharat, Amira & Zubanb, Aisha; (2005). "Psychological distress and coping strategies among families of missing persons in Pakistan". *Pakistan Journal of Psychological Research*. Vol 1(2)
- Folkman, S., & Lazarus, R. S. (1981). "An analysis of coping in a middle aged community sample". *Journal of Health and Social Behavior*, Vol 21, pp 219 -239
- Gilmore, D. Adrienne & Osho, G. Solomon; (2013). "Stress, anxiety, depression and psychological responses among African Americans: Empirical Investigation and Coping Strategies". *American Journal of Health Sciences – Third Quarter 2013* .Vol 4, Number 3
- Howell, D. C. (2007). "Statistical Methods for Psychology" (6th ed.). California: Thomson Wadsworth
- ICD – 10; Classification of mental and Behavioral Disorders. WHO, Geneva
- Leandro, Pedro González; (2010). "Coping with stress and its relationship with personality dimensions, anxiety, and depression", *Procedia Social and Behavioral Sciences*. Vol 5. pp 1562–1573
- Lovibond, S. H, & Lovibond, P.F. (1995). "*Manual for the Depression Anxiety & Stress Scales*" (second edition). Psychology Foundation.
- Matheny, K., Aycock, D., Curlette, W., & Junker, G. (2003). "The coping resources inventory for stress: a measure of perceived resourcefulness". *Journal of Clinical Psychology*. Vol 59(12). pp 1261-1277.
- Sadock, J. B & Sadock, A.V; (2007). *Synopsis of Psychiatry*. Ed (10). Lippincott Williams & Wilkins. New York. P - 379
- Schneiderman, Neil ; (2005). "STRESS AND HEALTH: Psychological, Behavioral, and Biological Determinants" *Annu Rev Clin Psycho*. Vol 1, pp 607– 628.
- Tobin, D.L., Holroyd, K. A., & Reynolds, R. (1982). "*The assessment of coping: Psychometric development of the Coping Strategies Inventory*". Paper presented at the meeting for the Advancement of Behavior Therapy, Los Angeles.
- Tobin, D.L., Holroyd, K. A., & Reynolds, R. V. C. & Wigal, I. (1985). "*Coping and depression: A predictive discriminant classification.*" Presented at the meeting of the Midwestern Psychological Association.
- Zargarzadeh, Maryam & Shirazi, Maryam ; (2014). "The effect of progressive muscle relaxation method on test anxiety in nursing students", *Iran J Nurs Midwifery Res* . Vol 19(6), pp 607–612

How to cite this article: Jacob S & Sharma S (2018). Efficacy of Progressive Muscular Relaxation on Coping Strategies and Management of Stress, Anxiety and Depression. *International Journal of Indian Psychology*, Vol. 6, (1), DIP: 18.01.013/20180601, DOI: 10.25215/0601.013