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Dr. Sharmila Gunpal
Associate Professor,
Department of Psychology,
Dayanand College, Hisar,
Haryana, India

Corresponding Author:
Dr. Sharmila Gunpal
Associate Professor,
Department of Psychology,
Dayanand College, Hisar,
Haryana, India

The effect of psychological intervention Jacobson progressive muscular relaxation (JPMR) and EMG-biofeedback on migraine: An analysis

Dr. Sharmila Gunpal

Abstract
This research was intended to understand the influence of psychological intervention mainly Jacobson Progressive Muscular Relaxation technique and EMG-Biofeedback on migraine patients. It was observed in the literature review that allopathic treatment alone is not effective in treating migraine. But when medications are taken along with some other treatment procedures like stress management, relaxation techniques or other cognitive behavioral therapies they are proved more effective. So keeping this in mind a study is done to analyze the influence of psychological intervention on migraine. For the current investigation, 60 migraine candidates were taken and randomly divided into three groups. All the candidates received psychological intervention. A scale was used that was specifically designed to understand the intensity of migraine pain that is perceived by the respondents and number of migraine attacks. Progressive Muscular Relaxation Training and EMG-Biofeedback were administered to the candidates. ANOVA with Duncan's post-hoc test was used for the analysis purpose. Paired sample t-test was also used to compare a number of migraine attack, EMG-biofeedback, perceived pain intensity, and the retest scores after intervention in the form of JPMR and control group. The significance level was 0.05. The scores acquired at the time of the first testing on the problem of migraine pain and the frequency of migraine attacks were used as the baseline or pre-test values. All three groups were retested after the conclusion of the intervention and scores on subjective migraine pain severity and attack frequency were once again obtained for all candidates in all three groups.

Keywords: EMG-biofeedback, JPMR, migraine

Introduction
Many people are experiencing headaches regularly and it seems that around 50 percent of individuals have identified headaches as a major issue. Leonard, *et al*., (2005) [120] found a size of the public health issues including the critical problem was migraine. Migraine is considered a medical disorder that somewhere is causing headaches and also correlated to vomiting, nausea or irritation from smell, sound may be with light also. According to "The Ad Hoc Committee on Classification of Headache," migraine headaches are recurrent headache attacks that may vary greatly in terms of their severity, frequency and length. The attacks are generally unilaterally and are often correlated with vomiting or nausea in addition to appetite loss. Sensory, motor and emotional abnormalities may be before or concurrent with certain candidates' conditions. WHO considered migraine as a worldwide problem for that people take various treatments. Before starting any medicine some headache candidates may consider non-pharmacological care for their condition. While some people sometimes take drugs to relieve their headaches however, all of them don't always benefit from conventional pharmacological treatments. Additionally, not all candidates may respond well to all pharmaceutical therapies. So many individuals go for treatments other than medication to treat their headaches. For the last 20 years many headache patients use several behavioral therapies for the prevention of migraines such as Jacobson progressive muscular relaxation training (JPMR), EMG-biofeedback, stress-management training and cognitive-behavioral training etc. For ex. in JPMR it was found that by tensing and relaxing muscles for a brief period of time are proved beneficial for headaches. Similarly with the help of EMG-Biofeedback patients learn how to control their neuromusculoskeletal systems. Due to biomedical technology and advances in psychological and medical research in 1970s, biofeedback treatments were become popular (Goleman & Gurin, 1993) [33].

This is a non-pharmacological approach in that candidates use some monitoring devices to detect as well as to amplify the psychological information. It takes deliberate mental effort to regulate the heartbeat, temperature, blood pressure, muscular changes and other uncontrollable body-related processes after becoming aware of them.

Review of Literature

Constant findings of literature reviews show that behavioral therapies provide positive changes in migraine headache symptoms. Psychological treatments for headaches, such as relaxation therapy, cognitive behavioral therapies and stress reduction methods, have also been shown to be effective. These methods have sometimes been successful in lowering headache pain on their own, although pharmaceutical intervention provides the greatest benefits. Relaxation methods may help alleviate headaches in both adults and children, according to Mehta and Primavera's 1992 [79] study. Between 40% and 80% of people with headaches may benefit from relaxation techniques and biofeedback training, according to Blanchard, Ahles, and Shaw in 1979 [18]. According to Rains and Penzien (2002) [55], behavioral therapies are now used as major therapy for migraine headaches. The therapy includes mind and body relaxing training and cognitive-behavioral and biofeedback therapies were well supported by empirical data. These therapies may be employed alone or in conjunction with the more popular pharmaceutical headache treatments. A review of the above 100 types of research studies involved relaxing training, cognitive-behavioral, biofeedback therapies and stress-management training for the treatment of headaches by Holroyd and Penzien (1986, 1990) [45, 116], Blanchard (1992) [14], and McCrory, Penzien, Rains, and Hasselblad (1996) [55] revealed that these methods are highly effective. According to Blanchard (1987, 1992) [11, 14] and Holroyd and French (1995) [117], behavioral treatments for headaches reduced headache activity by around 50%, and the effects seemed to last for a long time following therapy. There is a dearth of data about behavioral therapy's efficacy in treating headaches in kids and teenagers. However, the research that is now available indicates that certain behavioral interventions are just as effective with adults. Migraine control supports to use of relaxation and biofeedback training including biofeedback treatment seems to be especially helpful. According to Mathew, Beng, Kralik, and Claghorn (1979) [95], biofeedback and relaxation techniques are very important in the management of headaches due to migraine. A research conducted on eleven candidates having persistent anxiety, platelet monoamine oxidizing activity was assessed through conditional treatment. Comparing post-treatment enzyme activity levels to pre-treatment values revealed a considerable decline. The physiological underpinnings of migraine biofeedback therapy are explained by a theory. Reductions in migraine headache frequency are seen as a result of these metabolic alterations. The study on the immediate effects of psychological treatments for migraine headaches was done by Sorbi, Tellegen, and Long in 1989 [70]. The research shows that 50% of migraine sufferers get improvements. These studies looked at the advantages of psychological interventions. They evaluated how different psychosocial treatments for migraine were performed. After 3 years of the conclusion on relaxation as well as stress management, this research presented the findings from 24 candidates. Results showed clear proof of the effects of retention in migraine. Both stress-coping and relaxation training were equally beneficial and both groups showed no evidence of medication use once training was complete. SCT was reported to lessen depressed response and increase assertiveness and active problem solving, among other side benefits. Research of contemporary migraine treatment approaches, including biofeedback methods and rational emotive therapy, was undertaken by Marrazo, Hickling, and Sison in 2006 [71]. The investigation produced fruitful outcomes. The biofeedback and RET components of therapy were both thought to be crucial for reducing migraine symptoms. The respondent said that coping with stresses connected to the start of migraine attacks was much easier with both RET and biofeedback training.

Biofeedback and relaxation were shown to be effective migraine treatments by Holroyd and Penzien (1990) [116].and They both greatly outperformed the placebo and no therapy. According to the Standards of Care for Headache Diagnosis and Treatment published by the National Headache Foundation, which was also mentioned by Goslin, Gray and McCrory (1999) [36] that biofeedback is considered an excellent treatment in proper treatment for migraine headaches and disorders. According to Blanchard, *et al*., (1985) [15], biofeedback for headaches offers several distinct benefits over the majority of medical therapies. It may not only provide long-term symptom remission, but it also does so without causing any negative side effects. Contrarily, weight gain, drowsiness and poor focus are regular adverse effects of pharmacological headache therapies and many headache drugs lose their potency with time. Even early research points to the potential for significant cost reductions from effective biofeedback and relaxation therapies. According to McGrath (1999) [77] psychological therapies, particularly biofeedback and relaxation training have been scientifically shown to be useful in treating recurrent migraines. These medicines are important for adults who do not use preventative drugs, as well as for teenagers when migraine necessitates. Therefore, using psychological interventions as a kind of therapy is successful. The creation and comprehension of quality-of-life measures as well as the analysis of candidates' decision-making about medication use depend heavily on psychological assessment. Concerning the research of migraines and the treatment of migraine sufferers, contemporary clinical psychology has a lot to contribute.

According to Deffenbacher, McNamara, Stark, and Sabadell (1990) [24] meditation, autogenic training, and other relaxation techniques are effective therapy to reduce thesymbols of aggression that is considered a significant tool for treatment of the migraines. The effectiveness of the behavioral and biofeedback treatment for headaches has been analyzed in above 100 research cited by McGrady, *et al*., (1999) [76]. According to their analysis, biofeedback, relaxation treatment, and stress management training result in a 50% decrease in headaches. A research conducted to study the prevention of migraine, Kaushika, *et al*., (2005) [61] assessed the usefulness of biofeedback aided by systematic relaxing techniques with diaphragmatic breathing to treat the migraine. Candidates with migraines were classified into two classes at random basis. One class was having the electromyogram as well as diaphragmatic breathing including a proper 6 months' home practice, the propranolol group was given 80 mg of propranolol per day. With

biofeedback in 66.66% of candidates and propranolol in 64.58%, the data show a strong therapeutic response. At six months, both groups saw a substantial reduction in attack frequency, intensity, length, and number whereas intergroup differences were statistically insignificant. In comparison to the propranolol group 38.54%, the biofeedback group 9.37%, and the biofeedback responders in the biofeedback group 53.22% both experienced significantly lower rates of recurrence of migraine during the one-year post-treatment period. Therefore, it can be said that systematic relaxations and diaphragmatic breathing with the assistance of biofeedback were highly effective in treating migraines and had a substantially greater long-term preventive effect than propranolol.

Using a technique known as meta-analysis, Blanchard, *et al*., (1980) [10] assessed the effectiveness of several psychological therapies for headaches as well as compared and assessed the pharmaceutical placebo. Results demonstrated that EMG biofeedback alone, relaxation training alone, or EMG biofeedback coupled with autogenic training were all considerably more effective than a pharmaceutical placebo for treating migraine headaches. According to the findings, frontal EMG biofeedback was considerably more successful than either a pharmacological placebo or a psychological placebo for treating tension headaches, whether it was used alone, in combination with relaxation training, or both. While the latter two are far preferable to just continuing to monitor headaches, they do not vary from one another. The scope for the improvements in treatment conditions was identified in the findings. The results of the research showed a strong Groups impact. Further, every comparison revealed that all treatment conditions considerably outperformed the medicine placebo in terms of improvement.

They also supported this finding. Pre- and post-treatment were used to determine treatment outcomes and summary effect size estimates. Behavioral therapies reduced migraine frequency by 32% to 49% compared to no-treatment controls' 5% decrease.

Results of the other meta-analyses, according to Blanchard (1992) [14], closely resemble those of the AHRQ study, which shows a behavioral intervention regarding migraine headaches become effective 35% to from 55% and found that all actions are superior to control circumstances. Research suggested that behavioral therapies have long-lasting benefits, at least among candidates who first react, with the longest follow-up happening 7 years after therapy.

Sovak, *et al*., (1981) [119] found that 91% of migraine candidates continued to have substantial improvement after 5 years of completing the headache therapy. Pharmaceutical vs behavioral migraine treatments have been compared and found a rare direct effect on each other. The most popular and efficient protective pharmacologic treatments for migraine, flunarizine, and a combination of relaxation and biofeedback training with 35 trials, however, have shown same scope for the progress in migraine. Candidates getting placebos for migraines, in contrast, only had an average improvement of 12%. Therefore, the most effective behavioral and pharmacological preventative treatments seem to be equally effective for individuals with simple migraines.

Kang, Ahn, Koo, Park, and Yu (2008) [58] analyzed the effectiveness of the training program focused on biofeedback-centered autogenic for Korean migraine women. The study found a correlation between the improvement of psychological variables, i.e. stress, tension, anxiety and headache in migraine suffering candidates who taken biofeedback treatment. The study identified an autogenic training with biofeedback assistance is successful in treating female migraine sufferers in the Korean population. Thus, it was discovered that biofeedback therapy helped female migraine sufferers' headaches and emotional states including worry and sadness. Additionally, the level drop and the therapeutic response to biofeedback were associated. These findings imply that biofeedback therapy may be significant for non-pharmacological cures for candidates suffering from migraine and decrease in headache problems may be significantly aided by the alleviation of anxiety states made possible by biofeedback therapy.

Hermann, Kim, and Blanchard's (1995) [43] contrasted psychological therapy with pharmaceutical therapies such as calcium channel blockers, propranolol, serotonergic medications, dopaminergic medicines, ergotamine, clonidine and placebo. They concluded that there was enough data to show that interventions combining thermal biofeedback as well as progressive relaxation training were more effective than other behavioral therapies than more widely utilized preventive medication therapies.

Goehring and Sarafino (1998) [98] analyzed the efficacy regarding behavioral therapy for children vs adults with migraine and tension-type headache were compared. The analysis related to biofeedback training in available literature showed that children (ages 7 to 19) who received thermal and EMG biofeedback saw a significant reduction in their headaches. Children responded more enthusiastically than adults, on average. For thermal and EMG biofeedback, the average headache reduction in pediatric trials was 62% and 81%, compared to 34% and 48% for adults.

The evaluation of research in this section made it abundantly evident that psychological treatments such as stress releasing strategies, EMG-biofeedback, relaxation programs, and rational emotive therapy may significantly reduce migraine headaches in sufferers. Progressive muscle relaxing programs as well as EMG-biofeedback have both been shown in trials to be significant in decreasing headaches. These methods assist in reducing headache frequency by allowing headache candidates to alter their physiological reactions to headaches. Research has shown that psychological counseling is helpful in the cure for headache due to migraine in addition to pharmaceutical therapy.

Objectives

- To analyze the effect of psychological intervention Jacobson Muscular Relaxation and EMG-Biofeedback in migraine.
- To compare the effect of psychological intervention Jacobson Muscular Relaxation and EMG-Biofeedback on perceived intensity and frequency of migraine pain.

Hypotheses

- Relaxation Training would have a significant and positive effect on migraine patients.
- EMG-Biofeedback would have a significant and positive effect on migraine patients.

Sample

60 migraine candidates were divided into three groups at random for the current investigation. In each of the three groups, twenty candidates were expected to participate. Additionally, efforts were taken to ensure that each of the three groups had an equal number of candidates of each gender. For the intervention portion of the trial, only candidates who had at least two attacks in a fifteen days and rated 3 or higher on a five-point scale of subjective pain severity were chosen. These sixty individuals were all chosen at random to get psychological treatment. For fifteen days, twenty candidates received alternate sessions of relaxation training, and twenty candidates received alternate sessions of EMG-biofeedback treatment. A control group of 20 candidates was likewise chosen, although they received no psychological assistance. Additionally, to receiving medicine during psychological sessions, all 60 of these individuals did. The mean value for the age of respondents who received treatments was 24.30 years (SD: 6.34 years), while it was 25.20 years (SD: 6.09 years) for the control group.

Tool used

Perceived intensity of migraine pain and frequency of migraine attack scale

All the participants in this research had been diagnosed as having migraines, and the study's goal was to evaluate the influence of psychological intervention on migraine. Therefore, a unique scale was created to understand the problems due to migraine pain and number of migraine attacks. Perceived Intensity and Frequency Scale is the name of the scale. Five-point scale was used to quantify the perceived severity of migraine. 'Very low' received a score of 1, while 'Very much' received a score of 5. 'Normal pain' received a score of (3), which was the middle. How much pain from migraines have you experienced over the last year was the query. Similarly, a single-item scale was applied to measure the frequency of migraine attacks. Did you have a migraine episode in the last fifteen days? The scale was to include four categories: "once," "twice," "two to five attacks," and "more than five attacks." One assault received a score of 1, two attacks received a score of 2, three attacks received a score of 2, and more than five attacks received a score of 4. A lower score indicates a migraine's perceived intensity is low or low, whereas a higher score indicates a migraine's felt intensity is high. Similar to this, a low score denotes a less frequent assault while a high score denotes a more frequent or severe attack. Single-item measures for health and well-being have been employed by several researchers (Easterlin, 2001) [26].

Progressive Muscular Relaxation Training

A methodical method for obtaining a profound state of relaxation is progressive muscle relaxation. Dr. Jacobson found that by tensing a muscle for a short time before letting it go, a muscle may be made to relax. A profound state of relaxation is produced by releasing some muscle types in the whole body. Dr. Jacobson introduced a series of 200 different muscle-relaxing exercises in his book "Progressive Relaxation." The technique has subsequently been condensed to only 15-20 simple exercises, which, when consistently performed, have been proven to be equally as effective as the previous, more complex approach. People whose anxiety is closely linked to muscular tension benefit most from progressive muscle relaxation. The behavioral exercise utilized for the cure of headache issues is muscle relaxing training. The process of relaxation training teaches people to become aware of and take control of their physiological reactions.

EMG Biofeedback

Biofeedback is a non-invasive, non-pharmacological cure that teaches people how to control their neuromuscular and skeletal systems. When breakthroughs in biomedical technology and advances in psychological and medical research came together in the 1970s, biofeedback therapies were born (Goleman &Gurin, 1993) [33]. This is very important therapy that is a non-pharmacological approach in which patient learns self-regulation technique with the help of a monitoring instrument that fetch out required physiological information. Candidates are well trained to recognize and adjust parasympathetic reactions which are frequently linked to pain due to migraine (Stern and Ray, 1977) [107]. It takes deliberate mental effort to control the blood pressure, muscle tension, skin temperature, heart rate, and other uncontrollable body functions after becoming aware of them.

Procedure

The respondent’s name, age, gender, family back ground, educational background, income level, residence, marital status, career and the hospital from where they are receiving treatment were all acquired using a demographic profile. They were also asked about the ailment they suffer from and how long they had been taking medicine. To build rapport with the candidates, the demographic profile was utilized. The individuals received assurances that their identities would remain anonymous. They were given their unofficial approval. The respondents were then given basic instructions about surveys, and their replies were recorded. After providing clear and thorough explanations to the participants who had trouble comprehending the questions, their replies were recorded. The responders' inquiries were appropriately explained. Each responder receives a personalized copy of each questionnaire. Candidates who had minimum two attacks in a fifteen days and rated three or higher on a scale of one to five for perceived intensity were chosen for psychological treatment. As a starting point, the scores on the scales measuring reported pain intensity and perceived attack frequency were used. These sixty candidates were divided into three groups at random. Three different treatment conditions were allocated at random to the three groups. Jacobson Progressive Muscular Relaxation Training (JPMR) was applied to first group and the second group was received EMG-Biofeedback training. There would also be a control group to which no training was given. For fifteen days, the JPMR relaxation group's members received daily relaxation instruction. The candidates in the EMG-biofeedback group similarly received training every day for fifteen days. Throughout the psychological intervention the candidates were also taking medication. Following the completion of the psychological intervention, all candidates had a second assessment of their perceptions of pain and attack severity. Following that, candidates received suitable psychological therapy. This was done in a separate, quiet area that had been constructed just for it. EMG-biofeedback and relaxation therapy was administered separately to each participant. The success of

the psychological therapy was accepted by the candidates. The treatments were administered in a welcoming setting. For each topic, the process for administering the exam was the same.

Statistical Analysis

ANOVA with Duncan's post-hoc test which is appropriate for multi-group designs was used to analyze the impact of psychological intervention. Paired sample t-test was also used to compare a number of migraine attack, EMG-biofeedback, perceived pain intensity and the retest scores after intervention in the form of JPMR and control group. The significance level was 0.05. The scores acquired at the time of the first testing on the problem of migraine pain and the frequency of migraine attacks were used as the baseline or pre-test values. All three groups were retested after the conclusion of the intervention and scores on subjective migraine pain severity and attack frequency were once again obtained for all candidates in all three groups. The findings of the paired t-test used to examine the data are shown in Table 1. The mean difference between the pre-testing and post-testing ratings for migraine pain intensity and migraine attack frequency in the JPMR, EMG-biofeedback and control groups was analyzed using a paired t-test and the findings are shown in the tables below.

Table 1: Shows the pre and post-testing significance difference for perceived frequency and intensity of migraine for relaxation group

	Mean	SD	T
Pre testing of perceived intensity of migraine	4.05	0.88	12.34** (df=39)
Post testing of perceived intensity of migraine	1.75	0.63	
Pre testing of perceived frequency of migraine	3.30	0.47	9.41** (df=39)
Post testing of perceived frequency of migraine	1.40	0.50	

**= Significant at .01 level of significance

According to the findings (Table No.1) for the pre-relaxation condition's mean of pain perception intensity was higher than the post-relaxation condition's mean pain perception intensity (mean=4.05, SD=0.88). The combined mean score (pre-post) difference was significant where t was 12.34 and df was 39.01. There was a significant difference between the pre-relaxation training condition and the post-relaxation training condition in terms of the frequency of migraine attacks with mean value 3.30 and S.D. was 0.47.

Table 2: Shows the pre and post-testing significance difference for perceived frequency and intensity of migraine for EMG- biofeedback group

	Mean	SD	T
Pre testing of perceived intensity of migraine	3.95	0.68	11.38** (df=39)
Post testing of perceived intensity of migraine	1.65	0.58	
Pre testing of perceived frequency of migraine	3.50	0.60	10.69** (df=39)
Post testing of perceived frequency of migraine	1.45	0.60	

**=Significant at .01 of significance

It is shown in Table No. 2 that before training with EMG-biofeedback, the perceived intensity of migraine pain was higher with mean value 3.95 and S.D. 0.68 than it was after training with mean value 1.65 S.D. was 0.58. The statistical significance of this difference was shown (t=11.38 df=39, p.01). Following EMG-biofeedback training, there was a similar substantial decrease in reported migraine attack frequency (10.69, df=39, p.01). Before EMG-biofeedback training, the mean frequency of migraine attacks was 3.50 and S.D. was 0.60, and after training, it was 1.45 (SD=0.60). As a result, the perceived severity of migraine pain and the frequency of migraine bouts were dramatically decreased by EMG-biofeedback.

Table 3: Shows pre and post-testing significance of difference for perceived frequency and intensity of migraine for control patient group

	Mean	SD	T
Pre testing of perceived intensity of migraine	3.35	0.98	0.45^{ns}
Post testing of perceived intensity of migraine	3.60	1.14	
Pre testing of perceived frequency of migraine	3.15	0.67	0.74^{ns}
Post testing of perceived frequency of migraine	3.35	0.71	

ns=Non-significant

It was clear that there was no significant change in the mean frequency of migraine attacks and intensity of migraine pain for control group (Table no.3).

Table 4: Mean and SD of pre and post-testing for perceived intensity of migraine pain for all three groups

	Pre-testing		Post testing	
	Mean	SD	Mean	SD
Relaxation condition	4.05	0.88	1.75	0.63
EMG-Biofeedback	3.95	0.68	1.65	0.58
control condition	3.35	0.98	3.60	1.14

Additionally, the JPMR technique for relaxation and EMG-biofeedback training for migraine were to be compared in the research. Tables Nos. 4 and 5 provide the mean and standard deviations for the effects of relaxation and EMG-biofeedback training program on migraine pain intensity and attack occurrence. Figures No. 1 and Figure No. 2 also show the mean values for reported migraine pain severity and perceived migraine attack frequency.

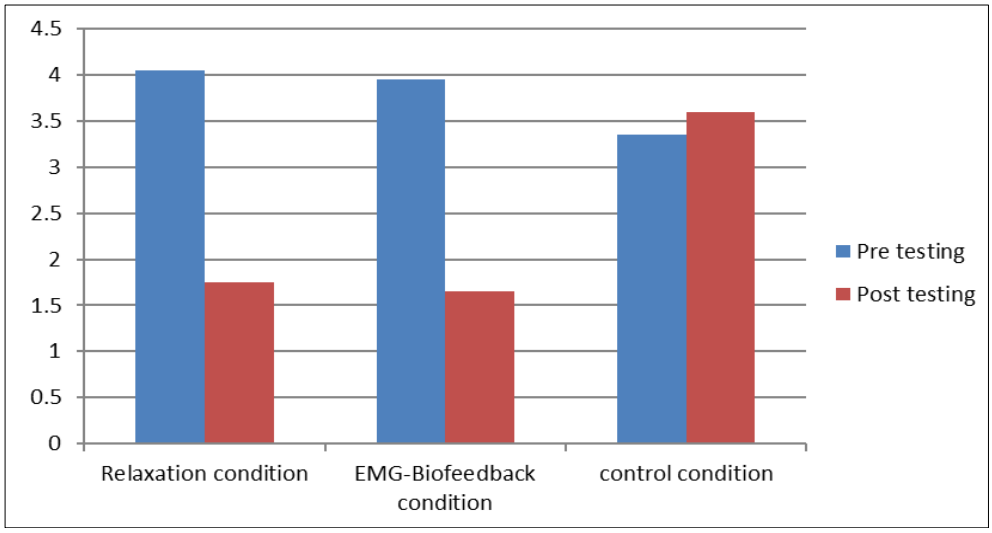

Fig 1: Mean of Pre and post-testing for perceived intensity of pain in all three conditions

Table 5: Mean and SD of pre and post-testing for perceived frequency of migraine pain for all three groups

	Pre-testing		Post testing	
	Mean	**SD**	**Mean**	**SD**
Relaxation condition	3.30	0.47	1.40	0.50
EMG-Biofeedback	3.50	0.60	1.45	0.60
Control condition	3.15	0.67	3.35	0.71

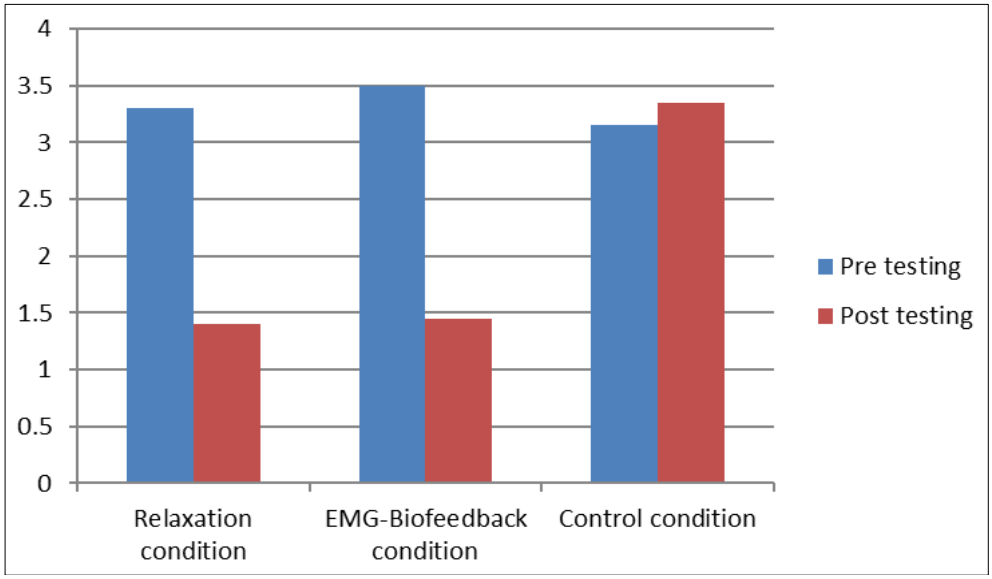

Fig 2: Mean of pre and post-testing for perceived frequency of pain in all three conditions

ANOVA analysis with Duncan's post-hoc test was conducted to understand the significance of mean difference between perceived intensity of migraine pain and frequency of migraine attack, and the analysis results are given in Table nos. 6&7.

Table 6: Summary of ANOVA for perceived frequency of migraine attack in all three groups (n=60)

Sources of Variance	Sum of Square	df	Mean Square	F
The perceived frequency between Groups	45.63	2	22.81	74.96*
Perceived frequency within Groups	39.25	57	0.3	(df=59)
Total	80.18	59		

**= Significant at .01 level of significance

The perceived frequency of migraine attacks in the relaxation training, EMG-biofeedback training and control groups varied considerably (F=74.96, df=59, p.01), according to the results (Table no. 6). Significant group comparisons were performed using Duncan's post hoc analysis. It was noticed that there was a higher perceived frequency of migraine attacks in comparison to a controlled group than in the relaxation training and EMG-biofeedback groups, according to the results of Duncan's post hoc test. The frequency of migraine attacks did not vary between the EMG-biofeedback and relaxation groups.

Table 7: Duncan's test for significant perceived frequency of migraine attack group comparison

S. No	Perceived frequency	N	Subset for alpha=.05	
			1	2
1	Progressive muscle relaxation Group	20	1.40	
2	EMG Biofeedback Group	20	1.40	
3	Control Group	20		3.25

According to Table No. 7, there was a significant difference between the relaxation, EMG-biofeedback and control groups in terms of the mean felt the severity of migraine pain (F=29.72, df=59, p.01).

Table 8: Summary of ANOVA for the perceived intensity of migraine pain in relaxation, EMG-biofeedback, and control groups (n=60)

S. No	Sources of Variance	Sum of Square	Df	Mean Square	F
1	Perceived Intensity between Groups	40.93	2	20.46	29.72**
2	Perceived Intensity within Groups	39.25	57	0.68	(df=59)
	Total	80.18	59		

**= Significant at .01 level of significance

Duncan's posthoc test was used to determine the significance of the mean difference between groups, and the results are shown in Table no. 8.

Table 9: Duncan's test for the significant perceived intensity of migraine pain group comparison

S. No	Perceived Intensity	N	Subset for alpha=.05	
			1	2
1	EMG Biofeedback Group	20	1.65	
2	Progressive Muscle Relaxation Group	20	1.75	
3	Control Group	20		3.45

It was discovered that the control group's subjective migraine pain intensity was significantly higher than that of the relaxation training and EMG-biofeedback training groups. It was noticed that mean scores on perceived migraine pain intensity did not vary between the relaxation training and EMG-biofeedback training groups.

Conclusion

Thus, it was clear by the results that EMG-biofeedback training and JPMR relaxation training are both efficient in lowering migraine attack frequency as well as perceived pain intensity. The efficiency of EMG-biofeedback training and relaxing training program, however, were equal. Therefore, the findings of this research unambiguously show that psychological interventions, such as Jacobson progressive muscular relaxation and EMG-biofeedback, are effective for curing migraines in conjunction with existing medications. Therefore, there was a substantial decrease in the perceived intensity of migraine pain and perceived frequency of migraine attacks in migraine candidates who received Jacobson progressive muscular relaxation and EMG-biofeedback compared to that of the control group. This shows that medication is not as effective when taken alone as it is when paired with psychological intervention.

Limitations and Suggestions

The psychological intervention was provided to migraine candidates who were receiving treatment in the form of Jacobson progressive muscle relaxation and EMG-biofeedback, which was one of the study's primary drawbacks. Giving psychological assistance to migraine sufferers who weren't using medication would have been preferable. Future research should attempt to include several groups, such as the control group, migraine candidates who are not taking medication, migraine candidates who are taking medication, and migraine candidates who are not. Research like this will undoubtedly aid in a better understanding of psychological intervention and will thus be more broadly applicable. Additionally, as virtually all of the study's participants were adults, it is important to proceed with extreme care when extrapolating the results to groups other than adults. Future studies should use samples that allow for a wider range of generalizations.

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