CHAPTER 3

METHODOLOGY

Design

This investigation was planned to identify the role of stress and anger expression in migraine patients. This study was also aimed at assessing the effectiveness of Jacobson progressive muscular relaxation and EMG-biofeedback training in treating migraine. The variables included in the study are shown in Table 3.1.

Table 3.1
Variables/factors included in the study

<table>
<thead>
<tr>
<th>S.No</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Presumptive stressful life events</td>
</tr>
<tr>
<td>(i)</td>
<td>Personal events</td>
</tr>
<tr>
<td>(ii)</td>
<td>Impersonal events</td>
</tr>
<tr>
<td>(iii)</td>
<td>Desirable events</td>
</tr>
<tr>
<td>(iv)</td>
<td>Undesirable events</td>
</tr>
<tr>
<td>(v)</td>
<td>Ambiguous events</td>
</tr>
<tr>
<td>2.</td>
<td>Anger expression</td>
</tr>
<tr>
<td>(i)</td>
<td>Total Anger Expression</td>
</tr>
<tr>
<td>(ii)</td>
<td>Anger expression-in</td>
</tr>
<tr>
<td>(iii)</td>
<td>Anger expression-out</td>
</tr>
<tr>
<td>(iv)</td>
<td>Anger control</td>
</tr>
<tr>
<td>3.</td>
<td>Perceived intensity of migraine pain</td>
</tr>
<tr>
<td>4.</td>
<td>Perceived frequency of migraine attack</td>
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</table>
Perceived intensity of migraine pain and perceived frequency of migraine attack were the dependent variables representing migraine and the stressful life events consisting of five components (personal events, impersonal events, desirable events, undesirable events and ambiguous events) and anger expression consisting of four components (total anger expression, suppression of outward expression of anger, outward expression of anger and control of outward expression of anger), were the independent variables.

Sample

A sample of 200 participants (male = 108 and female = 92) was selected for the present study. All the participants were diagnosed migraine patients. The sample was selected from the civil and private hospitals/clinics located at Rohtak, Bhiwani, Hisar and Sirsa districts of Haryana. Total 108 male patients were selected of which 35 males were selected from Hisar, 30 from Rohtak, 23 from Bhiwani and 20 from Sirsa. Similarly 92 females were selected for the study out of which 30 were selected from Hisar, 27 from Rohtak, 16 from Bhiwani and 19 from Sirsa districts of Haryana. The age of the subjects ranged from 12 to 40 years with an average age of 26.23 years (SD=7.90years). Only those patients who were taking treatment for more than one year and not less than six months were selected. All these patients were taking medications regularly. For the second phase of the study 75 patients were randomly assigned in three groups. It was intended to take twenty five patients in each of the three groups but a few cases dropped out in between and thus finally sixty patients were there (twenty in each group). Efforts were also made to include equal number of male and female patients in each of three groups. Only those patients having at least two attacks in a fortnight period and scored three or more on a five point scale of perceived intensity of pain were selected for the intervention part of the study. All these sixty patients were randomly selected for the psychological intervention. Twenty patients were given relaxation training alternatively for fifteen days and twenty patients were given EMG-biofeedback therapy in the same way. One control group of twenty patients was also selected to which no psychological intervention was given. All these 60 patients were taking medications also during psychological interventions. The average age of the patients to which therapies were given was 24.30 years (SD=6.34years) and the average age of control group was 25.20 years (SD=6.09 years).
The Mean and S.D. of age of the sample is given in Table 3.2.

Table 3.2  
Mean's and S.D's of age in years

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
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<tbody>
<tr>
<td>Male (108)</td>
<td>26.26</td>
<td>8.12</td>
</tr>
<tr>
<td>Female (92)</td>
<td>26.19</td>
<td>7.67</td>
</tr>
<tr>
<td>Total:</td>
<td>26.23</td>
<td>7.90</td>
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</table>

Tools Used

Following tools were used for the present study:

1. State-Trait Anger Expression Inventory-2 (Spielberger, 1988) (STAXI-2)

   The state-trait anger expression inventory has been revised and expanded from 44 to 57 items on the basis of extensive research over the past 10 years. The new version of STAXI-2, provided concise measures of the experience, expression and control of anger. The STAXI-2 was developed for two primary reasons: (i) to assess the components of anger for detailed evaluations of normal and abnormal personality, and (ii) to provide a means of measuring the contributions of various components of anger to the development of medical conditions, particularly hypertension, coronary heart disease and cancer.

   The experience of anger as measured by the STAXI-2 is conceptualized as having two major components-state and trait anger. State anger is defined as a psychological emotional state or condition marked by subjective feelings that vary in intensity from mild irritation or annoyance to intense fury and rage. Trait anger is defined in terms of individual differences in the disposition to perceive a wide range of situations as annoying or frustrating and by the tendency to respond to such situations with devotion in state anger. Individuals with high trait anger scores, experience state anger more often and with greater intensity than individuals who are low in trait anger. Anger expression and anger control have four major components. The first component is
anger expression-out which means the expression of anger toward other persons or objects in the environment. The second component is anger expression-in, which is the anger directed inward (i.e. holding in or suppressing angry feelings). The third component is anger control-out which is based on the control of angry feelings by preventing the expression of anger towards other person. The fourth component is anger control-in which is related to the control of suppressed angry feelings by calming down or cooling off when angered.

**STAXI-2 Scales and Subscales:**

The revised 57–item STAXI-2 consists of six scales, five subscales and anger Expression Index, which provides an overall measure of the expression and control of anger. In the STAXI-2, three of the five original STAXI scales remain the same. Trait Anger (T-Ang), Anger Expression-Out (AX-O) and Anger Expression-In (AX-I). The two T-Ang subscales, angry Temperament (T-Ang) and Angry Reaction (T-Ang/R) also are unchanged. The 8-item STAXI-2 Anger Control-Out (AC-0) Scale is comprised of 7 of the 8 original STAXI anger control items. The 8 items STAXI-2 Anger Control-In (AC-1) scale is entirely new. The original 10-item STAXI State Anger (S-Ang) Scale has been expanded to 15 items. The manual of STAXI-2 describes the test materials and procedures for administering and scoring. Detailed information on the development and validation of the inventory, guidelines for interpreting the STAXI-2 scale, subscale and Anger Expression Index scores and descriptions of current research on this inventory also are provided. In responding to each of the 57 STAXI-2 items, individuals rate themselves on a 4-point scale that assess either the intensity of their angry feelings at a particular time or how frequently anger in experienced, expressed, suppressed or controlled. The STAXI-2 yields scores for 6 scales, 5 subscales and the anger expression index. For the State Anger(S-Ang) items (part 1), examinee rate the intensity of the anger they feel “right now” on a 4-point scale, ranging from Not at all (1) to Very much so (4). For the 10 Trait Anger (T-Ang) items (Part-2), examinees rate how they “generally” feel on a 4-point frequency scale ranging from Almost never (1) to Almost always (4). For the 32 Anger Expression and Anger Control items (Part-3) examinees rate how often they generally react or behave in certain ways when they feel angry or furious. The same 4-point frequency scale used for Part-2 (i.e. Almost never to almost always) is used for the
Anger Expression and Anger Control items. The internal consistency of all scales were .84 or higher, median \( r = .88 \), except for the 4-items T-Ang/R subscale for normal adults, which was .76 and .73 for normal females and males respectively. Thus, the internal consistency reliabilities of the scales and subscales are satisfactory.

For the purpose of the present study the anger expression scale was used in Hindi for the convenience of the participants. Hindi translation was done by Promila Devi (2000). First of all, the English version of the scale was given to the 15 lectures in English and Psychology working in different colleges and M.D. University, Rohtak. These experts translated the English questionnaire in Hindi. After a gap of few days Hindi translated questionnaire was given to the same lecturers to retranslate it into English. No substantial difference was found between the English and Hindi translation by them. Relevant corrections were made in case there was slight difference existed.

To measure the re-test reliability of the Hindi version, a group of 50 subjects (25 male and 25 female) were selected at random from those who were originally administered the scale. These were again asked to fill the Hindi version of the scale after a gap of 30 days. Pearsons’s correlation was calculated between the first testing score and second testing score. The obtained co-efficient of correlation was 0.84. This indicates that the scale has high re-test reliability. To measure the validity of the scale, 50 subjects were given English and Hindi version of the inventory simultaneously one after the other, to 10 males and 40 females postgraduate students of psychology department, M.D. University, Rohtak. The score on Hindi version of the inventory was correlated with the score on English version employing Pearson’s correlation. The obtained co-efficient of correlation was 0.88 which indicates toward the criterion validity of the scale.

In the present study the following measures of STAXI-2 are used.

(i) Anger Expression Out (AX-O), which measures how often angry feelings are expressed in verbally or physically aggressive behavior.

(ii) Anger Expression-In (AX-In), which measures how often angry feelings are experienced but not expressed (suppressed).
(iii) Anger control (AC-O) which measures how often a person controls the outward expression of angry feelings.

(iv) Anger Expression Index (AX-Index), which provides a general index of anger expression based on responses to the AX-O, AX-In and AC-O items. Anger expression index is also termed as total anger expression.

The Hindi version is also scored as the original scale. The Hindi version of anger expression scale is appended in Appendix-A.


The role of stressful life events in the etiology of various diseases has been a fertile field of research. 'Stress' as conceptualized by Selye (1956) is a broad and general concept like 'Anxiety'. In general, the purpose of life events research is to demonstrate a temporal association between the onset of illness and a recent increase in number of stressful events. The underlying assumption is that such events serve as predisposing and precipitating factors for the subsequent illness episode. A host of studies (Wolf, 1950, Holmes and Rahe, 1967) have suggested a positive relationship between stressful life events and subsequent illness. Presumptive stressful life event scale (PSLE scale) is one measure in this area. This scale consists of 51 life events. These 51 items were further classified according to (i) whether they were personal or impersonal. (ii) Whether they were desirable and undesirable and (iii) Ambiguous items.

In this scale the respondents have to tick stressful events in life time column, they experienced in their life. Then the numbers of events experienced by the subjects in life time were summed up separately. After this all the items were calculated separately as desirable items, undesirable items, personal items, impersonal items and ambiguous items into five categories. The scale is appended in Appendix-B.

3. Perceived intensity of migraine pain and frequency of migraine attack scale

In the present research, all the patients were diagnosed migraine patients and the study was aimed at assessing the effectiveness of psychological intervention on migraine. So for that purpose a special scale/checklist of the intensity of migraine pain
and frequency of migraine attack was designed. The scale was named as perceived intensity and frequency scale. Perceived intensity of migraine pain was measured by a single item to be endorsed on a five point scale ranging from very low (1), low (2), normal/so-so (3), much (4) and very much (5). A score of (1) was given for 'very low' and (5) for 'very much'. A score of (3) was given to 'normal pain' and it was the midpoint. The question was “how much pain you have experienced due to migraine in the last one year.” Similarly, the frequency of migraine attack was also measured by a single item scale. The question was, “did you have an attack of migraine in last fifteen days?” It was to be endorsed as four point scale i.e. ‘once’, ‘twice’, ‘two to five attacks’ and ‘more than five attacks’. A score of (1) was given for ‘one attack’, (2) for ‘two attacks’, (3) for ‘two-five attacks’ and (4) for ‘more than five attacks’. A lower score indicate low or lower perceived intensity of migraine pain and high score indicate high intensity of pain. Similarly, low score indicate less frequency of attack whereas high score indicate greater/high frequency of migraine attack. Several researchers have used single item measures in the health and well being (Easterlin, 2001; Veenhoven, 1993). The items are appended in Appendix- C.

PSYCHOLOGICAL INTERVENTION:

In the present study 60 diagnosed migraine patients were selected from the whole sample (i.e. N=200) to assess the effectiveness of psychological intervention i.e. Jacobson progressive muscular relaxation and EMG-biofeedback and all the 60 patients were randomly assigned to three groups. One group was given Jacobson progressive muscle relaxation and the other group was given EMG-biofeedback training. The third group was the control group. The groups were randomly assigned to each of the treatment and control group condition.

JACOBSON PROGRESSIVE MUSCULAR RELAXATION (JPMR)

Edmund Jacobson was the pioneer, who developed progressive muscle relaxation in 1930. Large group of muscles in the body are brought into tension and subsequent relaxation systematically in a sequential order. When a particular group of muscles is taken up, the tension is gradually increased of that part of the body for about 10 seconds and immediately after let go and relaxed for at least 20 seconds. This mean ratio of time spent on tensing and relaxation is to be approximately 1:2. This means
that if one gets tense for 10 seconds one should relax at least for 20 seconds. The most important feature of this method is that persons must direct his attention to the feelings and sensation of tension while a particular part of the body is being tensed and to the feeling and sensations of relaxation when the particular part of the body is being relaxed. Thus, one will be able to find the distinction between what is tension like and what is relaxation like. This is called differential relaxation. As the individual go on doing it, at the end, the individual will be able to find that the entire body is relaxed. The most crucial point of this technique is that mind and body are closely interlinked. One can’t exist apart from the other. One can’t work apart from the other. When complete bodily relaxation is to be achieved, it invariably brings about complete mental relaxation also. The inevitable unity of the mind and body is to be appreciated.

The whole procedure may approximately take about 40 minutes. But there are certain important things that should be remembered. Set apart about an hour when one is free from all other engagements. One should not in hurry. Have breakfast or lunch or dinner at least half an hour after the exercise, otherwise there may be interference with the digestive process. It is preferable to do it in the early morning hours as one would like to feel free and relaxed through the day. Choose a convenient room where light and fresh air is easily available. Let the atmosphere also be distraction free. Let not others disturb while one is practicing. If necessary close the door. One should wear loose garments, remove shoes, wristwatch, spectacles and contact lenses, if wearing them. It is preferable to lie down the cotton bed without the pillow so that the body is horizontal. Lie down on the bed facing the ceiling. Stretch the hands and legs a little part from the body. Take as comfortable a posture of the body. Take as comfortable a posture of the body as one’s like. Also keep the mind cool and calm. Keep other thoughts and worries away from the mind. At least during the period of exercise, keep the eyes closed during that time. Before starting the exercise and at the and just like down peacefully on the bed at least for a few minutes. One more important thing, just before starting to take a group of muscles for tensing in that part of body for about 10 seconds (one can even mentally count 1001, 1002, .... 1010, to be sure that about 10 seconds have elapsed. Then immediately let go the tension drop that part of the body on the bed and go to relaxation, simultaneously breathing out. This should be done for every group of muscle. This is highly advantageous and beneficial. It helps one for concentrating better, remembering better and to have a more flexible and adoptable stance and dealing with things or people. Thinking reasoning and judgments become
better. One will be able to sleep better. In general the health and well-being become enhanced.

For the purpose of convenience the human body may be divided into four parts: the hands, the head muscles, the leg muscles and lastly the trunk muscles, including the muscles of back stomach, abdominal and chest muscles. One will be taking up group of muscles in each of these four parts and carrying out the procedure in sequence.

One must start with the muscles of the hands first, as they are more easily under one's voluntary control than the other parts. The sequential orders as described by Jacobsen in 1938 and used in the study in which the muscles of the body are to be tensed and relaxed are presented below.

**Hand muscles:**

(i) Lift both your hands straight by about 90° and make tight fists of both hands.

(ii) Lift both of your hands by about 90° and extend the palmer surface of the hands stretching the fingers apart.

(iii) Lift both of your hands by about 45° and bend both hands at elbow tensing muscles of forearms.

(iv) Straighten your hands more than side wards by 90° and start gradually bending the hands exercising pressure on biceps and triceps.

(v) Keep both hands in the normal resting position.

**Muscles of Head:**

1. Pull the eye brows up wrinkling the forehead muscles and start pulling these muscles over the top of your head and at the back of the head (by pressing head to the bed).

2. Open both eyes widely, rotate the eye balls in the clockwise direction.

3. Open both eyes widely and rotate the eye balls in the anti-clock wise directions.

4. By pressing the eye lids close the eyes tightly.

5. Protrude the lips and nose tightly pushing them forward as if you are making a face of another.
6. Protrude the tongue and push it as forward as you can.

7. Pull the tongue as fare aback as you can by pressing the tongue to the back of the mouth.

8. Press the tongue to the roof of the mouth.

9. Press the tongue to the floor of the month. Tightly press the jaws and pull the corners of the mouth as far back as you can.

10. Open the mouth; bring the jaws in opposition several times.

11. Straighten the heads and start bending the head forward so as to nearly touch the chest.

12. Move the head completely to the left shoulder and start making semi circular movement of the head backward from left to right by tensing them muscles of back neck.

13. Do the same as above but now the semi circular movement should be from right to left.

**Leg Muscles:**

1. Lift both legs straight at least by about one foot from the bed, bend the feet and toes toward you.

2. Bend both the legs at knees, thrust the back of the feet to the bed and bend the toes forward arching both feet.

3. Bend both the legs at knees, thrust the back of the feet to the bed and start stretching the toes apart.

4. Keep both the legs straight, alternatively push and pull the legs towards and away from you.
Trunk Muscles:

1. Turn towards your right side on the bed, bring the hands to the back, close your hands and try to make your body like a bow (muscles of the back are tensed).

2. Lie down on your back, breath in and past out the stomach as much as you can.

3. Lie down on your back but this time without breathing in pull the stomach muscles inwards.

4. Take a deep breath, held it as long as you can in the chest and then let go.

This procedure completes the entire muscles group to be brought into tension and relaxation and it is progressive muscular relaxation.

EMG - BIOFEEDBACK

Electromyography biofeedback is the process of monitoring and displaying to an individual, the ongoing contraction and relaxation patterns generated by his or her skeletal muscles. Its objective is to heighten proprioceptive awareness of the mechanisms of muscle flexure and to develop voluntary control over dysfunctional, semi-voluntary or involuntary muscle actively. The achievement of muscle skeletal control skills has direct clinical applications in both physical medicine (neuromuscular reduction) and in the redress of psychological, psychosomatic and stress-related disorders (EMG-biofeedback “Biotrainer”, Medicaid System, Chandigarh).

Electromyography feedback can play a major role in improving the patient’s awareness of both the objective physiological indications of inappropriate stress response and the mechanisms involved in their generation and maintenance. By learning to voluntarily control affected muscles, patients can achieve significant clinical improvement.

These improvement results from a variety of factors: Firstly when acute or chronic muscle tension directly contributes to the patient’s distress and relaxation of the affected muscles can relieve the discomfort. Secondly the feedback of observable and objective indications of the patient’s condition can facilitate the patient’s acceptance and understanding of the nature of his problem. Thirdly, the achievement of deep
muscle relaxation can contribute to the patient’s overall level of relaxation and have significant clinical impact on stress-related disorders. Fourthly, direct control of previously involuntary muscle actively serves to improve the patient’s sense of self-control, self responsibility and self-image. Another major application of feedback electromyography is in the neuromuscular retaining of partially to seriously dysfunctional muscles.

Some important preparations before the treatment are as follows:

The room, where Bio-feedback training is to be given should be neat and clean and there should not be any disturbing sounds and glaring lights. The subject is seated in a comfortable chair and is explained about the treatment. His goal is to glow the maximum number of green color bars through his mental powers. More number of glowing green bars shows higher level of relaxation and pitch of audio feedback i.e. sound also becomes pleasant. Glowing of red bars shows higher level of tension and pitch of sound also becomes shrill. The subject is also told to repeat autogenic phrases while at the same time receiving biofeedback from glowing bars and sound. Typical autogenic phrases are ‘I feel quite, my hands are heavy and warm and my ankles, my knees, my hips feel heavy and relaxed.” After a few training sessions on the machine, chronically tense people would learn to alter their state of mind and relax quickly at will.

Some important features of biofeedback instrument are as follows:

Input impedance = 50 M

Sensitivity ranges =2000, 200, 20, 2u v

Input noise = 0.2 u v and less

Sound = direct tone, BI tone

EMG display= LCD Meter Display, 17 light steps (green 11, yellow 1, red 5 steps).

Power = 220 V, 50Hz.

Accessories = Set of electrodes, Headphone, Electrode jelly, Electrode tape.
The operating guidelines for the machine are given below:

1. Play the mains lead in the mains socket.

2. Keep the volume, balance and level controls at minimum position and feedback gain control at maximum position.

3. Insert electrode lead plays in the Electrode sockets.

4. Apply small quantity of jelly on the three electrodes.

5. Place these three electrodes, on the forehead of the individual and the distance between electrodes should be 15 mm. on the muscle where relaxation therapy is required.

6. Switch ‘On’ the machine and the green bars of the screen starts glowing.

7. Select required sensitivity on senility selector.

8. Selecting level mode: Rotate control in clockwise direction till the required number of green bars is glowing. Now rotate level control in clockwise direction till level indicator starts glowing.

9. Bring the feedback gain control in the middle position to start with.

10. Selecting Audio feedback mode: Select BI-Tone or direct tone as per the requirement. In case of Direct Tone, EMG signal of the subject is directly feedback to the subject after amplification. But in case of BI-Tone, EMG signals after implicitly is processed and converted into melodic clarification and feedback to the subject. For the present study only the visual mode was used.

11. Rotate Balance Control in clockwise direction and bring it to the position that yellow bar of the screen starts glowing.

12. Now volume control is slowly increased to a level that audio feedback i.e. sound level is pleasant for the subject.

13. If surrounding environment of the room is not be disturbed then headphone can be used for audio feedback.
14. For using headphone, plug it in the headphone receptacle when volume control is minimum. Put on the headphone the ears of the subject and increase volume to a level which is pleasant to the subject.

15. Then the subject under training is asked to relax.

16. The ongoing EMG activity of the subject can be seen on the LCD panel meter.

17. If the subject is able to glow all the green bars then Feedback Gain is reduced and the subject is asked to try for glowing more green bars.

18. One therapy session is for about 30 minutes and if the subject is not able to glow more green bars then present average value of EMG activity can be noted down from the LCD panel meter.


20. Switch 'OFF' the machine.

21. Remove the electrodes and headphone from the subject.

22. Clean the Electrodes by cotton or tissue paper.

PROCEDURE

The study was conducted in two phases. In the first phase of the study two hundred diagnosed patients of migraine were selected and measures of presumptive stressful life events and Spielberger's anger expression scale and specially designed perceived intensity of pain on five points scale and frequency of attack on four point scale, was administered all the patients. For the second phase of the study a sample of seventy five patients was selected out of these. Only those patients having at least two attacks in a fortnight period and scored three or more on a five point scale on the perceived intensity scale were selected for psychological intervention. The scores on perceived intensity of pain and perceived frequency of attack scale were taken as baseline scores. These seventy five patients were randomly assigned to the three groups. Thus, there were twenty five participants in each of the three groups. The three groups were randomly assigned to three treatment condition. One group was given Jacobson progressive muscular relaxation training (JPMR). The second group was
given EMG-biofeedback training and the third group was taken as the control group. The participants in the JPMR relaxation group were given relaxation training as designed above in every alternative day for fifteen days. Similarly, the participants in EMG-biofeedback group were also given training for every alternative day for fifteen days. But because of dropouts of some patients in between, finally there were twenty patients in each of the three groups. The patients were also taking medication during psychological intervention. All the patients were retested on perceived intensity of pain and severity of attack scale after the end of the psychological intervention. A demographic profile was used with the patients to gather general information about their name, age, sex, family, educational qualification, income, residence, marital status, profession and hospital from which they are taking treatment were gathered. The information about their illness with which they suffer and for how long they were on medication was also taken. The demographic profile was used to establish rapport with the patients. The subjects were assured about the anonymity of their personal identification. Their informal consent was obtained. After that the general instructions related to questionnaires were given to the respondents and their responses were recorded. The subjects who had difficulty in understanding the items were explained in easy and comprehensive language and their responses were noted down. Queries put by the respondents were properly clarified. All the questionnaires were administered individually to each respondent.

During the second phase of the study, the psychological interventions were properly given to the patients. A separate room was specially prepared for this purpose where there was no disturbance. Each participant was given relaxation and EMG-biofeedback individually. The patients were convinced about the effectiveness of the psychological treatment. The therapies were given in a comfortable environment. The test administration procedure was kept strictly uniform for all the subjects.

SCORING

All the test/questionnaires were scored according to the scoring procedures laid down in their respective manuals. For the presumptive stressful life events scale (PSLE), and anger expression scale, perceived frequency of attack and intensity of migraine pain the scoring was done as described in earlier section (along with description of respective scale/checklist).
STATISTICAL ANALYSIS

The obtained data were analyzed by employing measures of central tendency and variability as descriptive statistics. Pearson product moment correlation coefficients and stepwise multiple regressions were also calculated. For the effect of psychological intervention, ANOVA suitable for multi-group designs with Duncan's post-hoc test was used. Paired sample t-test was also used for comparing the baseline scores on perceived intensity of pain and frequency of migraine attack and the retest scores after intervention in the form of JPMR, EMG-biofeedback and control group. Level of significance was kept at .05.