



## MANAGING STRESS AMONG WOMEN: A COMPARATIVE ANALYSIS OF THE EFFECTIVENESS OF RELAXATION TECHNIQUES

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**ABSTRACT** Present study was intended to compare the effectiveness of relaxation techniques in managing stress among women. Walking exercise (WE) and progressive muscles relaxation-modified (PMR-M) were compared to examine the effectiveness in managing stress among women. A 2 x 2 factorial design was employed in 100 women participated to examine the effect of relaxation techniques on stress. Findings of the study revealed significant positive effect of both WE and PMR-M. The degree of effect of PMR-M compared with WE was found much higher to manage stress among women.

### KEYWORDS :

#### INTRODUCTION

Stress is an important issue which nowadays growing at a rapid pace in every walk of life. Stress is something which makes one feels uncomfortable. It creates imbalance and individual makes an effort to restore the state of balance (Husain and Rashid, 2004). Patil (2016) emphasized that stress is a part of modern life. With the increase in complexity of life, stress is likely to increase. It is built in the concept of role, which is conceived as the position a person occupies in a system. Women's in modern global world have to play a dual role as housewife and career builder. Rajsekhar and Sasikala (2013) asserted that women are constantly under stress either at home or at workplace. At workplace coping with demands, time management, and completion of tasks before the deadlines are the problems which need to be handled skillfully. At home maintaining relationships, making ends to meet are factors that can cause stress. Stress is caused whenever any event, internal or external, is perceived as making demands over and above the copy resources possessed by the women. Stress make a person more susceptible to disease, which then aggravates any existing illness or chronic condition such as heart disease, depression, ulcers, irritable bowel disease, diabetics, the common cold, urinary tract infections. Some people seek comfort from stress by engaging in behaviours such as alcohol and drug abuse, smoking, or overeating, which have negative physical and emotional health consequences of their own.

Relaxation techniques are useful way to manage stress. Relaxation produces a comfortable condition of mind and body that leads to moderate pain or sorrow by making it easy to bear. Individual's surrounding world regularly putting challenges of various kinds making them tense and thereby producing stress and various other behavioral abnormalities. Women of almost each and every society either professional or nonworking are more susceptible to these problems. Out of two broad categories (professional and nonprofessional) working/professional women have greater tendency to develop behavioral problems like stress, anxiety, depression, poor quality of life, etc. Effective measures are required to alleviate the adverse effect of surrounding situations leading to behavioral problems. Relaxation techniques are the effective measures which therapists use to manage stress and other behavioural problems.

Sweeney (1978) described relaxation as a perceived state in positive direction giving a feel of relief of tension or strain. The psychological aspects of the relaxation involve the feeling of pleasantness and a reduced sensation of stressful and uncomfortable thoughts. Most often the word 'relaxed' is used to refer either to lax muscular body posture purported to peaceful and comfortable thoughts. According to Titlebaum (1988) relaxation technique is a specific way of physical movement of body that may include breathing in a rhythmic way, tensing and relaxing the muscle in categorization or in a specific sequence. This is supposed to be as a factor of lessening the perception of those stimuli which are stressful. This also calms down the feeling of anxiety as well as tension, feeling of depression, stress and pain. McCaffery and Beebe (1989) hold the view that relaxation exercises lead to freedom from anxiety and skeletal muscle tension. According to Ryman (1995), relaxation creates a state of balance and peace in the

mind of the participants. Whatever the technique is used, the crux of all techniques include the diversion of attention of the participant from the stress full environmental stimuli that impinge his thought patterns encompassing his expectations of ideal life. Once the attention of the participant is diverted from the adversely affecting stimuli of the environment, he feels relaxed and peaceful. Prolonged repetition of the relaxation techniques help individual to get rid of the stressful situations. Relaxation exercises are the supportive therapy that suggesting a way to reestablish a sense of well-being. It delivers a holistic healing effect in the daily routine, affecting body, mind and spirit. Therapists invariably use relaxation and imagery to treat various side effects of cancer, cardiovascular and other major diseases. In general term relaxation techniques/exercises are the potent means to manage stress and quality of life.

Wells (1982) pointed out that there is an affiliation between muscle tension, autonomic hyper arousal, anxiety and pain. The relaxation techniques help reduce feeling of anxiety pain and stress. Researchers argue that the four basic principles are essential to obtain the relaxation response. These are:

1. An uninterrupted stimulus such as a word, sound, phrase which may facilitate a shifting from externally oriented thoughts. In other words we can say that the basic rudiment behind this practice is to divert the attention of individual.
2. A passive attitude and the skills are also required to discourage distracting thoughts and give new direction leading to calmness of mind of individual.
3. A reduced muscle tone to mitigate the effects of distracting thoughts
4. An environment to prevent from all other disturbances.

There are many different kinds of relaxation techniques/exercises. Whatever is the kind of relaxation exercise, the above four fundamental principles are commonly found in each and every one.

In the present research, Jacobson's exercise was the main concern of the investigator. It was used with some modifications to compare its effectiveness with walking exercise in managing stress among women. Description of these two exercises viz walking exercise and progressive muscles relaxation-modified is given in methodology.

A growing number of studies have demonstrated beneficial effect of different kind of relaxation exercises on stress, hypertension, cardiovascular response, anxiety and depression, pulse rate, blood pressure muscular strength and cardio-pulmonary fitness. physical and emotional well-being. (Aliasghary et al., 2011; Hart & Tracy, 2008; Murugesan, Govindarajulu, & Bera, 2000; Tracy & Hart, 2013). Farnaz, Nahid, Negar, and Shakeri (2015) designed a study with an aim to investigate the effect of progressive muscle relaxation on depression, anxiety and stress among the women with first time pregnancy. They found a beneficial effect of relaxation. Kaina, Xiaomei, Jin, Miao, Dang, Wang, and Xia (2015) conducted a study to

examine the effects of music therapy and progressive muscle relaxation training on feelings of stress, depression, anxiety and length of hospital stay among females suffering from breast cancer. Findings of the study revealed a beneficial effect of music therapy and progressive muscle relaxation training. Authors concluded that progressive muscle relaxation training taken in conjunction with music therapy can reduce depression, anxiety, feeling of stress and length of hospital stay in patients suffering from dangerous disease.

According to Kermene (2016) "stress is the non-specific response of the body to any demand placed upon it. The study conducted by him evaluated stress level of working women and house wives and its management through Progressive muscle relaxation (PMRT) and Mindfulness breathing. The study noted the significant decline in the stress level of experimental group of employed women and no decline in the control group. The stress level was reduced from moderate to low level of stress".

The above cited studies used specific exercise with pretest/post-test method to see its effect on a specific problem. But there is paucity of researches regarding the comparative analysis of exercise without specific problem. In the present investigation the relaxation exercise was executed on those women not having any health related problem.

### Significance of the present study

So far as the comparative analysis of the effectiveness of relaxation techniques particularly self managed techniques are concerned, there is lack of empirical evidences. Relaxation techniques have been found useful to manage stress. All those techniques which require supervisory care are time consuming and expensive and not affordable by everyone because of time and financial constraints. Expenses of self managed relaxation techniques are nil and the person can organize according to her/his suitability. Present study is an endeavor to assess the effectiveness of relaxation techniques in managing stress among women. Efforts will be made to select working and nonworking women in a balancing form as these two lifestyles have significant bearing on stress. Relaxation techniques selected for the present study were those which do not require supervisory care. More specifically, walking exercise (WE) and PMR modified up to the stage of no requirement of supervisory care (PMR-M) was used to assess their effectiveness to manage stress among women.

### Objectives of the Study:

The main objectives of the present study are to determine:

1. the effectiveness of WE in managing the stress among women.
2. the effectiveness PMR-M in managing the stress among women
3. the effectiveness of WE and PMR-M in managing the stress among women

### Hypotheses: The following hypotheses were formulated

H1 Walking exercise (WE) will have significant positive effects in managing stress among women.

H2 PMR-M will have significant positive effect in managing stress among women.

H3 Walking exercise (WE) as compared to PMR-M will have significantly differential effect in managing stress among women.

### METHOD

The major aspects of methodology include variables under study, manipulation of independent variables, measures used for dependent variable, participants involved and their selection criteria, procedure of collection the data and its analysis. As the present study is an endeavor to assess the effectiveness of relaxation techniques in management of stress of women, the main variables of the study was stress which served as the dependent variables and the types of relaxation techniques namely Walking Exercise (WE) and Progressive Muscles Relaxation-Modified (PMR-M) technique served as the independent variable. The dependent variable was studied under two conditions, pre-test and post-test, for each of the two independent variables.

### Specification of Variables: Stress

#### Independent Variables: Types of Relaxation Techniques

- i. Walking Exercise (Denoted as WE).
- ii. Progressive Muscle Relaxation- Modified (Denoted as PMR-M).

**I. Progressive Muscle Relaxation:** Progressive muscles relaxation is one of the widely used relaxation technique. It is also known as

Jacobson's progressive muscle relaxation or deep muscle relaxation. It is more popular with modern physical therapists. This technique involves lying down and focusing on a particular group of muscles. The procedure involves, first consciously relaxing the group of muscles, then tensing them for a while, and then completely relaxing them again.

Progressive muscle relaxation may be done in either ways, sitting or lying down.

### Description of Method involved in PMR and Modification

- **Tense up a group of muscles:** It involves tense hard but don't strain a group of muscles and hold for about 5 to 10 seconds.
- **Modification:** Tensing hard a group of muscles was replaced by a sequence of easy movements of body.
- **Release:** It involves the release of tension from the muscles all at once.
- **Modification:** It involves gradual release of tension.
- **Stay relaxed:** It involves staying relaxed for 10 - 20 seconds.
- **Modification: Discarded**
- **Shifting:** It involves shifting from one group of muscles to another group of muscles either from lower to upper side or from upper to lower side.
- **Modification:** Instead of shifting from one group of muscles to another group of muscles, subjects were required to open and close fists of both hands and to move around both feet.
- **Repetition:** It involves repetition of same exercise on another group of muscles.
- **Modification:** Taking the group of muscles one by one was discarded. Subjects were instructed to recite the name of God during the body movement as suggested above.

Finally, the modified procedure for the technique was as follows

- Participants were advised to take a comfortable position either sitting or laying down.
- They were advised to have a complete faith in God
- They were advised to recite name of God
- Time duration was 15 to 20 minutes.
- They were advised to remember the God for their betterment
- They were advised to open and close their fist and move feet around during the recitation of name of God
- They were allowed to change their position during the recitation of name of God. The purpose was that the participant must feel relaxed.
- At the end participants were free to do anything.

All efforts were made to simplify the technique so that the participant could use it independently without the supervisory care of an expert.

Walking exercise is most easy but takes more time compared to above proposed modified PMR. Few years back it was assumed that walking is good "to lose weight" and "to get in shape." But walking exercise can also be used for emotional benefits particularly to relieve stress. In order avail the benefits of walking to manage stress, person don't need to pound the pavement or push himself/herself really hard. In fact, a comfortable stroll can be just as effective as a brisk walk. Here the key is to use the mind while person moving the body.

Measurement of Stress: Stress was measured with the help of Stress Symptom Checklist developed by Husain, department of Psychology, AMU Aligarh. The checklist contains 126 stress-related symptoms and subjects are required to write 1 to 5 score for each symptom depending

on the intensity of experiencing that particular symptom.

**Reliability Statistics of the Stress Scale**

Reliability Statistics of the Stress Scale			
Cronbach's Alpha	Part 1	Value	.953
		N of Items	63a
	Part 2	Value	.950
		N of Items	63b
	Total N of Items	126	
Correlation Between Forms		.751	
Spearman-Brown Coefficient	Equal Length	.858	
	Unequal Length	.858	
Guttman Split-Half Coefficient		.856	
The stress related symptoms in the checklist were selected from the research findings of various studies and on the bases of opinion of experts.			

**Research Design:** In the present study a quasi experimental design was used. Pre-test and post-test measures were taken for stress. There were four groups of participants. In order to know the effectiveness of relaxation techniques, walking exercise and modified version of progressive muscles relaxation were taken as the two levels of independent variable that is type of relaxation technique. There were two assessment conditions: 1) Pretest and 2) Pos-test condition. Two levels of independent variable and two assessment conditions created a 2x2 factorial.

**Sample:** In the present study Purposive Sampling (A non-probability sampling method) was used. The sample size for main purpose was 100 subjects, consisted of 2 groups having 50 subjects in each group. A pool of 100 women was selected from various localities of Aligarh (UP). Selection was based on the willingness of subjects to participate. Out of these 100 women, 50 subjects (Group 1) participated in walking exercise and remaining 50 (Group 2) participated in PMR-M

**Study Design for Dependent Variable Stress**

The sample was systematically segregated into two sub groups- 1 and 2. For this purpose the stress score of the whole group was serially arrange in ascending order and odd number subjects were placed in group 1 and even number subjects were place in group 2. In this way similar level of stress of these two groups was ensured. For verification of similarity of stress level of these two groups, 't' test was applied to examine the difference between mean stress score obtained by group 1 and 2 under pre test condition. Results are given in table 1.

**Table 1**

Statistic	Group 1 N=50	Group 2 N=50	t value
Mean stress score (Pretest Cond.)	221.68	222.62	0.94, p=NS
S D	44.6	44.24	

It is evident from table that above two groups are similar with respect to stress level as there was no significant difference in mean stress score of group 1 and 2 obtained under pretest condition. Group 1 was assigned walking exercise and group 2 was assigned PMR-M. After 6 weeks of the execution of relaxation exercise, each group was tested again for stress score on the same scale. Execution of two different relaxation exercises were 2 conditions of independent variable and pre/post test conditions were 2 separate observations. In this way the design of study became 2 x 2 factorial design. Thus, there were 4 observation conditions described as below:

**Observation Condition 1:** Assessment of stress score of group 1 before execution of WE

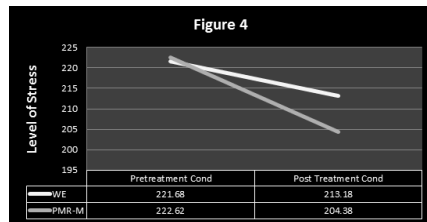
**Observation Condition 2:** Assessment of stress score of group 1 after execution of WE

**Observation Condition 3:** Assessment of stress score of group 2

before execution of PMR-M

**Observation Condition 4:** Assessment of stress score of group 2 after execution of PMR-M

**Diagrammatic Presentation of the Study Design**



**Procedure:** Before administering the scales of measurement, the purpose of the study was explained to the subjects and they were assured that their responses will be kept confidential and will be used only for research and academic purpose only. A good rapport was build up with the participants for obtaining correct responses. Some necessary instruction and guidelines were provided to them for properly filling the questionnaire. After this, the questionnaire was provided to them and they were requested to fill it up as per the instructions. After carrying out the scoring, investigator got in touch again with the participants falling under the criteria of selection the sample unit as stated above. The score obtained for stress was used as the score for observation 1 and 3. All the subjects used assigned relaxation technique individually and independently. Prior to use the assigned relaxation exercise they were trained up and each and everything was explained to them. In case of any doubt/problem, they were advised to contact the investigator. The investigator also tried to keep in touch with the participants regularly.

**Statistical Analysis:** The data obtained was statistically analyzed with the help of analysis of variance. One subject was assessed under two conditions, thus ANOVA for correlated observations was employed.

**Results and Discussion:** Results are presented in table 1 and 2

**Table 2: Showing Mean Stress Score of WE and PMR-M group under Pre/Post Treatment Conditions**

	Pre Treatment Condition	Post Treatment Condition	M Comb.
WE	M= 221.68 OC1 (Group 1)	M= 213.18 OC2 (Group 1)	217.43
PMR-M	M= 222.62 OC3 (Group 2)	M= 204.38 OC4 (Group 2)	213.50
M Comb.	222.15	208.78	

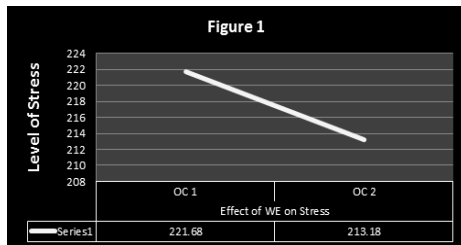
OC: Observation Condition

**Table 3: Showing ANOVA for Stress Score**

Sources of Variation	SS	Df	MSS	F
Pre/Post Treatment Conditions (Effect of Relaxation techniques)	8937.845	1	8937.845	77.80985
Effect of Type of Relaxation Techniques (WE v/s PMR-M)	772.245	1	772.245	6.722903
Interaction (Exercise Type x Pre/Post Treatment Condition)	1185.845	1	1185.845	10.32356
Subject (Individual Differences)	356180.3	49	7268.985	
Residual (Subject x Treatment interaction)	16885.56	147	114.8678	
Total	383961.8	199		

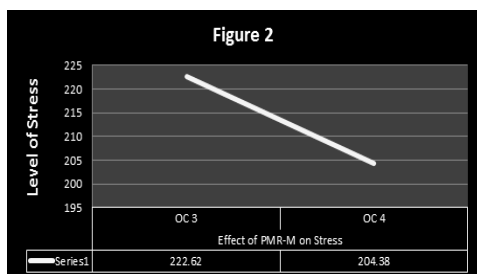
Table 3 reveals that F ratio for difference in pre/post treatment conditions is 77.80 which is significant at 0.01 level of significance. Finding suggests that there is significant effect of execution of relaxation exercise on stress level of women. Ignoring type of relaxation technique, we find in table 2 that mean of means of stress

score  $\{(213.18 + 204.38)/2 = 208.78\}$  obtained under post treatment condition is significantly less ( $F= 77.80, df 1/199, p< 0.01$ ) than mean of means of stress score  $\{(221.68 + 222.62)/2 = 222.15\}$  obtained under pre treatment condition. Result indicates that execution of relaxation exercise irrespective of its type have positive effect on stress level of women. Table 2 further reveals that mean stress score ( $M= 213.18$ ) of group 1 obtained under observation condition 2 is less than mean stress score ( $M= 221.68$ ) of the same group obtained under observation condition 1. Since the F ratio is significant at 0.01 level it can safely be concluded that walking exercise have significant positive effect on stress level of women. The objective 1 of the study was, "To assess the effectiveness WE in managing the stress among women" is met and the hypothesis H1 that the walking exercise (WE) will have significant positive effects in managing stress among women is accepted. The above finding is diagrammatically depicted in figure 1.



In the figure 1 observation conditions are shown on x axis. OC 1 is level of stress of group 1 under pre treatment condition and OC 2 is the level of stress of the same group under post treatment condition. Level of stress is indicated on y axis. The straight line shows variation in stress level of women. The figure clearly indicates downward movement in the level of stress of women when shifting from pre treatment to post treatment condition. In other words we can say that stress level reduced after the execution of relaxation exercise (WE).

Table 2 also reveals that mean stress score ( $M= 204.38$ ) of group 2 obtained under observation condition 4 is less than mean stress score ( $M= 222.62$ ) of the same group obtained under observation condition 3. Since the F ratio is significant at 0.01 level, we can safely conclude that PMR-M have significant positive effect on stress level of women. The objective 2 of the study was, "To assess the effectiveness PMR-M in managing the stress among women" is met and the hypothesis H2 that PMR-M will have significant positive effect in stress among women is accepted. The above finding is diagrammatically depicted in figure 2.

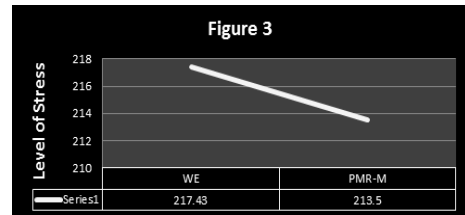


In the figure 2 observation conditions are shown on x axis. OC 3 is level of stress of the group 2 under pre treatment condition and OC 4 is the level of stress of the same group under post treatment condition. Stress level of women is indicated on y axis. The straight line shows variation in stress level of women. The figure clearly indicates downward movement in stress level of women when shifting from pretreatment to post-treatment condition. In other words we can say that stress level reduced after the execution of relaxation exercise (PMR-M).

A perusal of table 3 further reveals that F ratio for variation in type of relaxation technique is 6.72 which is significant at 0.01 level of significance. Finding suggests that there is differential effect of WE and PMR-M on stress level of women. When combine pre/post treatment conditions (OC 1 & OC 2) and (OC 3 & OC 4), we find in table 3 that mean of means of stress score  $\{(222.62 + 204.38)/2 = 213.50\}$  obtained by PMR-M group (group 2b) is significantly less ( $F= 6.72, df 1/199, p< 0.01$ ) than mean of means of stress score  $\{(221.68 + 213.18)/2 = 217.43\}$  obtained by WE group (group 2a). At the initial stage i.e. before treatment, the level of stress of group 1 and 2, OC 1&3, was not significantly different (Ref. Table 2.). After executing relaxation exercises (WE and PMR-M), the level of stress of group 1

and 2, OC 2&4, became significantly different. The stress level of group 2 compared with group 1 reached at much lower level after treatment. Certainly this difference is due to difference in type of relaxation techniques. These results suggest that PMR-M compared with WE has better effect on stress of women. This finding is diagrammatically depicted in figure 3.

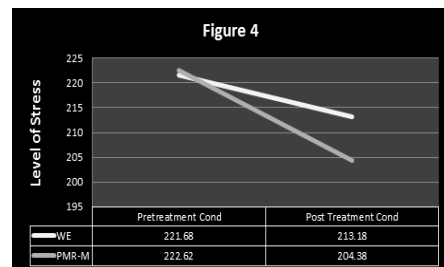
Figure 3: Showing Effect of Type of Relaxation Technique on stress



In the figure 3 WE/PMR-M type of relaxation exercises are shown on x axis and average of pre/post treatment quality of life level is indicated on y axis. The straight line shows variation in stress level of women. The figure clearly indicates much lower level of stress after executing PMR-M compared with WE.

The interaction between pre/post treatment conditions and type of relaxation exercise is also an evidence of differential effect of WE and PMR-M. A perusal of table 3 reveals that F ratio for interactional effect between these two variables is 10.32 which is significant at 0.01 level of significance. Finding suggests that both the variables have different value and effect on stress level of women. Finding indicates that both PMR-M and WE have positive effect on stress but the degree of effect of PMR-M compared with WE is higher. In other words we can say that PMR-M is a more effective relaxation technique to manage stress. The objective 3 of the present investigation was, "To carryout comparative analysis of the effectiveness of WE and PMR-M in managing the stress among women" is met and the hypothesis H3 that "Walking exercise (WE) as compared to PMR-M will have significantly differential effect in managing stress among women" is accepted. Finding can better be explained with help of below given figure 4.

Figure 4: Showing Interactional effect between pre/post treatment conditions and Type of Relaxation Exercise on Stress



In the figure 4 pre treatment and post treatment conditions are shown on x axis and level of stress is indicated on y axis. White straight line shows effect of walking exercise (WE) on stress and grey line is showing effect of PMR-M on stress level of women. In the beginning (pretreatment conditions OC 1&3) stress level of group 1 and 2 is at similar level. The figure clearly indicates much higher magnitude of downward movement of grey line compared with white line from pretreatment to post treatment condition. This evinces higher degree of effect of PMR-M compared with WE. In other words we can say that stress level decreased after the execution of relaxation exercises but the degree of reduction in level of stress is much greater after execution of PMR-M compared with WE.

**DISCUSSION**

Findings related with stress demonstrate the main effects of relaxation exercises and type of relaxation exercises (WE and PMR-M) on the feeling of stress among women. The interactional effect of relaxation exercises and their types is also significant. Both WE and PMR-M have positive effect on stress. These findings support the views that relaxation techniques are a great way to help with physical as well as psychological health problems like stress management and other psychological problems. Relaxation techniques are not merely exercise or enjoying hobby. Rather these techniques include specific



process to decrease the adverse effects of stressful surrounding environment that impediment individuals' wellbeing and other physical and psychological functioning. Relaxation techniques have been emerged as complementary and alternative therapy to manage various psychological disorders. Present investigation proves relaxation exercises as a useful technique to manage stress among women.

Similar findings have been obtained by Karmane (2016). The study demonstrated positive effect of relaxation techniques on the feeling of stress among women. The stress level of women was reduced from moderate to low level. Findings of the present investigation lend support to many previous researches including Sharma (2011), Patel (2014) and Banerjee (2016). These researchers also found that stress level decreases after execution of relaxation techniques.

The second main effect reveals that PMR-M is more effective than walking exercise. Besides, the interactional effect (Execution of Relaxation Technique x Type of Relaxation Techniques Interaction) also demonstrate that both PMR-M and WE have positive effect on feelings of stress. The stress level was reduced after execution of WE as well as PMR-M but the degree of effect of PMR-M on stress was much higher compared with WE. This finding simply suggests that person involved in PMR-M compared with WE are more able to shift attention from unpleasant experiences to the pleasant feelings of relaxation technique. Finding is in consonance with Patel (2014) in which he demonstrated significant effect of progressive muscles relaxation on the feelings of stress of staff nurses of various hospitals of Vadodra.

### Suggestions

In the present investigation walking exercise was executed in open air environment which is uncontrolled environment. What will happen if we execute this exercise on jogger machine under controlled condition? It is supposed to give different results. Future studies may be conducted in this direction.

Some demographic variables such as working/nonworking lifestyle, joint/nuclear family, education and socio-economic status may also give differential effects with PMR-M and WE under controlled/uncontrolled conditions. Future studies in this direction may highlight some more facts.

Further studies may also be conducted to determine effectiveness of relaxation techniques to manage QoL and stress for the persons handicapped naturally or after an incidence.

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