



# “A Study To Assess The Effectiveness Of Jacobson’s Progressive Muscle Relaxation Technique In Reducing Stress Among Mpsc Aspirants In Selected Institution Of The City”

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**Abstract:** In India, competitive examinations play a crucial role in determining educational and career opportunities. The Maharashtra Public Service Commission (MPSC) conducts highly competitive examinations for recruitment to various state government services. Government jobs are considered secure, prestigious, and socially desirable, leading to intense competition among aspirants. Thousands of candidates compete for a limited number of posts, resulting in prolonged preparation periods, repeated attempts, and uncertainty regarding success. The aim of the study was to evaluate the effectiveness of Jacobson's progressive muscle relaxation technique on stress levels among MPSC aspirants in the experimental group compared to control group.

**Methods :** A quantitative research approach with a quasi-experimental pre-test post-test control group design was adopted. The study was conducted among MPSC aspirants enrolled in selected coaching institution of the city. Samples were selected by using non probability purposive sampling technique. Stress levels were assessed using a standardized perceived stress scale. The experimental group received Jacobson's Progressive Muscle Relaxation Technique, while the control group received routine activities only. Data were analyzed using descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, t-test, and chi-square test.

**Result :** The findings revealed that MPSC aspirants experienced moderate to high levels of stress during the pre-test. A statistically significant reduction in stress levels was observed in the experimental group after the administration of JPMR ( $p < 0.05$ ), whereas no significant change was noted in the control group. Age in the experimental group and area of residence in the control group showed a statistically significant association with pre-test stress levels ( $p < 0.05$ ). No significant association was found with other demographic variables.

**Conclusion :** The study concluded that Jacobson's progressive muscle relaxation technique is an effective, simple, and non-pharmacological intervention for reducing stress among MPSC aspirants. Jacobson's progressive muscle relaxation technique can be incorporated as a stress-management strategy for competitive examination aspirants to promote mental well-being.

**Keywords:** Jacobson's progressive muscle relaxation technique, stress, MPSC aspirants.

## INTRODUCTION

The Maharashtra Public Service Commission (MPSC), established on May 1, 1960, operates as an autonomous body under Article 315 of the Indian Constitution. Maharashtra Public service commission (MPSC) is a Government of Maharashtra organization which is responsible for conducting exams for recruitments to Maharashtra Government departments. The primary purpose behind this entrance exam is to recruit good candidates for the state and subordinate services or Group A, Group B and Group C posts of Maharashtra. Aspirants must have obtained a bachelor's degree from a recognized university or an equivalent qualification. Candidates in their final year of graduation are also eligible to apply to these exams.<sup>1</sup>

**Ramrathan rao R(2022).**Conducted the study on “Introduction: The Science of Stress.” State that’ stress is simply the body’s non-specific response to any demand made on it. Stress is not by definition synonymous with nervous tension or anxiety. Stress provides the means to express talents and energies and pursue happiness; it can also cause exhaustion and illness, either physical or psychological. Students in nation are confronted with new challenges, demands and problematic situations which they often experience as being a strain and stressful. Stress can be particularly acute for students because of their stage of development. It has also been found that students are more vulnerable to stress than adults and younger children. Ordinary stresses can be monumental at this stage of development. The positive dimension of mental health is stressed in WHO’s definition of health as “Health is a state of complete physical mental and social well-being and not merely the absence of disease or infirmity.” Stress is the emotional and physical strain caused as a result of our response to what happens around us. Stress is a multidimensional phenomenon which is focused on dynamic relationship between the individual and the environment. It is also defined as a stressor, individuals’ response to the stimuli and interaction between the individual and the environment. It should be noted that some degree of stress can be effective on increasing and improving individuals’ performance.<sup>2</sup>

Annually, MPSC conducts the Rajya Seva Examination to recruit for Class A, B, and C posts within the Maharashtra Government, known for its competitiveness and allure due to higher salaries and prestigious status. During 2019-20, MPSC conducted 22 competitive exams, admitting 533,154 candidates and finalizing 10 exams for 1,848 posts. They made 2,414 recommendations, processed 8 requisitions for direct recruitment involving 288 posts and 125,911 applications, interviewed 1,039 candidates, recommending 279. A screening test for one post had 1,549 applicants and 1,399 participants. Notably, 905 candidates from backward classes were recommended for 2,673 reserved posts, in addition to 504 recommended for unreserved posts, underscoring MPSC’s commitment to social equity (Government of Maharashtra, MPSC, 2022).<sup>3</sup>

The National Mental Health Survey (NMHS) 2015-16 reveals that 6.4% of adults aged 18- 29 in India suffer from mental disorders, with anxiety (3.1%) and mood disorders (2.9%) being most common. Each year, countless students from villages and towns migrate to cities to prepare for civil service exams, facing significant financial burdens from coaching fees, study halls, and living expenses, yet they persist in bearing these costs for years to succeed. Aspirants of competitive exams, including those for the Maharashtra Public Service Commission (MPSC), often face significant physical and mental health challenges due to rigorous study schedules. This can lead to long-term effects such as stress, anxiety, and depression, which are more prevalent among these students than the general population. According to WHO, 10-20% of children and adolescents experience mental health conditions, with most not receiving care, and suicide is the third leading cause of death among 15–19yearolds; the 2016 National Mental Health Survey also revealed that nearly 9.8 million young Indians aged 13-17 years need active interventions. As per the National Institute of Mental Health and Neuro Sciences, one in five Indian teenagers suffers from mental illness. Examination stress can lead to lower academic performance, depression, substance abuse, eating disorders, and psycho-physiological problems (Barmola & Shrivastava, 2010).<sup>4</sup>

Recent studies from 2024 and 2025 highlight alarming statistics regarding stress among students preparing for competitive exams, with **over 85% of Indian students experiencing moderate to severe exam stress** and a significant percentage suffering from anxiety and depression. The issue is particularly acute for those in coaching institutes and specific professional fields like medicine. In India, pursuing higher education is a challenging process that is frequently characterized by fierce rivalry. Many students encounter the intimidating obstacle of competitive exams, especially those hoping to enroll in undergraduate programs at prominent universities. These tests, which are intended to identify the most deserving applicants, put a great deal of strain on students and raise their stress and anxiety levels. Although stress is a normal human experience, excessive and persistent stress can be harmful to one's physical and emotional well-being. Depression, anxiety, and stress levels are considered important indicators for mental health, and the inability to detect and address these psychological disorders negatively affects individuals, according to the recent National Mental Health Survey carried out by NIMHANS, the prevalence of depression is estimated to be 1.5% and students who had suffered from depression any time in the past is estimated at 2.2%, aspirants of competitive examination work hard, study for longer period, students may also face challenges to their health, both physical and mental, that may have long-term effects, anxiety disorders are the most common mental illness among scholars who are preparing for examination (Pachole et al. 2023).<sup>7</sup>

Stress is an inevitable aspect of competitive exam preparation due to the high stakes involved. For Indian students, these exams often determine access to prestigious undergraduate programs and by extension, their future career opportunities. Factors contributing to this kind of stress are academic pressure, physical and mental health challenges, and several long-term effects. Aspirants tend to take on more workload than they can complete. This leads to frustration, disappointment, and an inability to complete any work. This behavior stems from the immense pressure to perform well, meet societal and personal expectations and secure a spot in prestigious institutions. The imbalance between workload and coping capacity leads to frustration, disheartens, decreased productivity, and willpower.<sup>8</sup>

Government job is considered as a secure and permanent job that is why everyone wants to get that. But in India job opportunities are very less for one single post thousands of students are competing to each other because of over population. Due to those students are entering in a new academic and competitive world where they are confronted with multiple transition challenges. The challenges are compounded as they experience higher academic work load and family expectations. These challenges are coupled with the stress which covered a person for the future security of life. Due to their immaturity and future uncertainties, they seem not to have any control over the situation. Recent findings of UNESCO (United Nations Educational, Scientific and Cultural Organization) in 2019 revealed that students preparing for competitive exams are undergoing severe stress, which results in mental stress. Statistics revealed that suicide rates among students preparing for entrance examinations and professional colleges are on the rise. According to reports of National Crime Records Bureau (NCRB), in 2019, at least one student died by suicide every hour in India. The year recorded the highest number of student suicides, 10,335, in the past 25 years for which data is available. Maharashtra state reported 2,046 students' suicides in 2023, approximately 14.7% of the total students suicide across India. Student's suicide nationally 13,892 in 2023. The NCRB (National Crime Records Bureau) data shows that 10,159 students died by suicide in 2018, an increase from 9,905 in 2017, and 9,478 in 2016.<sup>9</sup>

## NEED FOR STUDY

India has the first largest population in the world. Therefore, competition is high in all fields. Better qualification and good graduation colleges gives better job in future. Parents pressure and peer pressure is reason for stress among students. Parents create pressure on students for preparation of competitive exam for government jobs like MPSC, UPSC examination under the pressure students start to preparation of study with expensive coaching classes and spend lots of precious time in study. Ongoing stress related to education shows negative impact on students' capacity, academic performance, physical health, sleep, mental health. Examination related anxiety also shown in psychiatric problems.<sup>10</sup>

**Nursing DR et al. (2019)** conducted a study to find out the personality traits among students facing competitive examination. Sample size was 60 students. Among them 30 students were new and 30 students were old. Students were included from among various examinations such as MPSC, UPSC. Age range was 18 years to 40 years. Samples were selected using non probability purposive sampling technique. Tool used for this study was personality traits inventory. Study concluded that the new students facing high openness than old students facing competitive examination. There was significant difference found between new students and old students on dimension neuroticism.<sup>11</sup>

## PROBLEM STATEMENT

“A study to assess the effectiveness of Jacobson's progressive muscle relaxation technique in reducing stress among MPSC aspirants in selected institution of the city.”

## OBJECTIVES OF THE STUDY:

The objectives of the study were -

- ❖ To assess the stress levels among MPSC aspirants in the experimental and control groups.
- ❖ To evaluate effectiveness of Jacobson's progressive muscle relaxation technique on stress levels among MPSC aspirants in the experimental group compared to control group.
- ❖ To determine the association between pre test stress levels with selected demographic variables in the experimental and control groups.

## HYPOTHESIS:

1. **H01:** There is no difference in stress levels of experimental group before and after Jacobson's progressive muscle relaxation technique among MPSC aspirants.
2. **H02:** There is no association of pretest stress levels with selected demographic variables in the experimental and control group.
3. **H1:** There is significant difference in stress levels of experimental group before and after receiving Jacobson's progressive muscle relaxation technique among MPSC aspirants.
4. **H2:** There is significant association between pre-test stress levels with selected demographic variables among MPSC aspirants in the experimental and control group.

## MATERIALS & METHODS

Researcher methodology defines what the activity of research is, how to proceed, how to measure progress and what constitutes success.

**Research Design:** Quasi-experimental Non randomized pre-test post-test control group design

**Research Approach:** Quantitative Research Approach

**Sample:** MPSC aspirants who are preparing for the Maharashtra Public Service Commission (MPSC) examination.

**Sample Size:** The sample size was 130 (65 in Experimental group and 65 in control group) MPSC aspirants who are preparing for the Maharashtra Public Service Commission (MPSC) examination who fulfil the required inclusion and exclusion criteria.

**Sampling Technique:** Non-probability - purposive sampling technique.

**Data collection tool:** Perceived Stress Scale (PSS) was used for data collection.

**Criteria for Sample selection:**

**a. Inclusion criteria:**

1. MPSC aspirants whose age between 19yr to 45yr.
2. MPSC aspirants who are enrolled in the selected coaching institution of the city.
3. MPSC aspirants are present at the time of data collection.
4. MPSC aspirants willing to participate in the study.
5. MPSC aspirants can read and understand Marathi and English language.

**b. Exclusion criteria:**

1. MPSC aspirants who are practicing any other relaxation techniques (yoga, meditation, pranayama) regularly.
2. MPSC aspirants who have severe physical illness or chronic medical conditions.
3. MPSC aspirants who will be not available at the time of data collection.
4. MPSC aspirants are unwilling to participate or withdraw consent.

The researcher approached the subjects, informed regarding the objectives of the study and obtained informed consent after assuring the subjects about the confidentiality of the data. Purpose and important of research study explain before collection of data. The stress level was assessed by using perceived stress scale. Descriptive and inferential statistics was used for data analysis. The collected data was organized and tabulated by using descriptive statistics, i.e. frequency, percentage, mean and SD. The inferential statistics i.e., paired t test was used to the effectiveness of Jacobson's progressive muscle relaxation technique in reducing stress among MPSC aspirants in selected institution of the city, and chi-square test was used to find the association between pre-test level of stress score with their selected demographic variables. The data was planned and presented in the form of tables and figures.

## RESULT

The data collected is entered in the master sheet for tabulation and statistical processing. In order to find out relationship, the data was tabulated, analysed and interpreted using descriptive and inferential statistics.

**Table 1 : Description of the security guards according to their demographic Variables**

**n=65,65**

| Demographic variable  | Experimental group |            | Control group |            |
|-----------------------|--------------------|------------|---------------|------------|
|                       | Frequency          | Percentage | Frequency     | Percentage |
| <b>AGE (IN YEARS)</b> |                    |            |               |            |
| 19 – 24 years         | 42                 | 64.61%     | 48            | 73.84%     |
| 24.1 – 29 years       | 17                 | 26.15%     | 12            | 18.46%     |
| 29.1 – 34 years       | 04                 | 6.15%      | 05            | 7.69%      |
| 34.1 – 39 years       | 01                 | 1.53%      | 0             | 0%         |
| 39.1 – 45 years       | 01                 | 1.53%      | 0             | 0%         |
| <b>GENDER</b>         |                    |            |               |            |
| Male                  | 42                 | 64.61%     | 34            | 52.30%     |

|   |    |        |    |        |
|---|----|--------|----|--------|
| Female  | 23 | 35.38% | 31 | 47.69% |
| <b>EDUCATION STATUS</b>                                       |    |        |    |        |
| Graduate  | 53 | 81.53% | 60 | 92.30% |
| Post-graduate   | 12 | 18.46% | 05 | 7.69%  |
| <b>PER CAPITA MONTHLY INCOME OF THE FAMILY</b>                |    |        |    |        |
| <10000  | 11 | 16.92% | 12 | 18.46% |
| 10001-20000   | 18 | 27.69% | 28 | 43.07% |
| 20001-30000   | 27 | 41.53% | 12 | 18.46% |
| >30001  | 09 | 13.84% | 13 | 20%    |
| <b>AREA OF RESIDENCE</b>                                      |    |        |    |        |
| Hostel  | 12 | 18.46% | 15 | 23.07% |
| Home  | 21 | 32.30% | 23 | 35.38% |
| Rental  | 26 | 40%    | 25 | 38.46% |
| Paying guest  | 06 | 9.23%  | 02 | 3.07%  |
| <b>TYPE OF FAMILY</b>   |    |        |    |        |
| Nuclear   | 35 | 53.84% | 40 | 61.53% |
| Joint   | 27 | 41.53% | 22 | 33.84% |
| Extended  | 0  | 0%     | 0  | 0%     |
| Separated   | 03 | 4.61%  | 03 | 4.61%  |
| <b>HOW MANY HOURS SPENT IN STUDY?</b>                         |    |        |    |        |
| 1-6HRS  | 14 | 21.53% | 17 | 26.15% |
| 7-12HRS   | 30 | 46.15% | 29 | 44.61% |
| 13-18HRS  | 17 | 26.15% | 19 | 29.23% |
| >18HRS  | 04 | 6.15%  | 0  | 0%     |
| <b>YEARS OF PREPARATION</b>                                   |    |        |    |        |
| 6 months  | 10 | 15.38% | 08 | 12.30% |
| 1-2 years   | 20 | 30.76% | 33 | 50.76% |
| 2.1-4 years   | 33 | 50.76% | 24 | 36.92% |
| >5years above   | 02 | 3.07%  | 0  | 0%     |
| <b>TIME SPEND ON INTERNET AND SOCIAL MEDIA SITES IN A DAY</b> |    |        |    |        |
| No access   | 0  | 0%     | 0  | 0%     |
| < 1hr   | 35 | 53.84% | 35 | 53.84% |

|  |    |        |    |        |
|--|----|--------|----|--------|
| 1-3hr                                      | 24 | 36.92% | 30 | 46.15% |
| 4-5hr                                      | 06 | 9.23%  | 0  | 0%     |
| >5hr                                       | 0  | 0%     | 0  | 0%     |
| <b>HOW MANY TIMES ATTEMPTED MPSC EXAM?</b> |    |        |    |        |
| First attempt                              | 10 | 15.38% | 08 | 12.30% |
| Second attempt                             | 20 | 30.76% | 33 | 50.76% |
| Third attempt                              | 33 | 50.76% | 24 | 36.92% |
| More than third attempt                    | 02 | 3.07%  | 0  | 0%     |

The above table 1 shows that the In the experimental group, the majority of participants (64.61%) were in the age group of 19–24 years, followed by 26.15% in the age group of 24.1–29 years. In the experimental group, 64.61% of the participants were male and 35.38% were female, indicating a higher proportion of males. In the control group, 52.30% of the participants were male and 47.69% were female. In the experimental group, the majority of participants (81.53%) were graduates, while 18.46% were postgraduates. In the control group, most participants (92.30%) were graduates, and 7.69% were postgraduates. In the experimental group, 16.92% of participants had a monthly income of less than ₹10,000, 27.69% had an income between ₹10,001 and ₹20,000, 41.53% belonged to the ₹20,001–₹30,000 income group, and 13.84% had a monthly income of more than ₹30,001. In the control group, 18.46% of participants had a monthly income of less than ₹10,000, 43.07% belonged to the ₹10,001–₹20,000 income group, 18.46% had a monthly income between ₹20,001 and ₹30,000, and 20% reported a monthly income of more than ₹30,001. In the experimental group, 18.46% of the participants were residing in hostels, 32.30% were living at home, 40% were staying in rented accommodations, and 9.23% were paying guests. In the control group, 23.07% of the participants were residing in hostels, 35.38% were living at home, 46% were staying in rented accommodations, and 3.07% were paying guests. In the experimental group, 53.84% of the participants belonged to nuclear families, 41.53% belonged to joint families, and none belonged to extended families. In the control group, 61.53% of the participants belonged to nuclear families, 33.84% belonged to joint families, none belonged to extended families, and 4.61% belonged to separated families. In the experimental group, 46.15% spent 7–12 hours, 26.15% spent 13–18 hours spent in study per day In the control group, 26.15% of the participants spent 1–6 hours studying, 44.61% spent 7–12 hours, 29.23% spent 13–18 hours spent in study per day. In the experimental group 30.76% had been preparing for 1–2 years, 50.76% had been preparing for 2.1–4 years. In the control group, 12.30% of the participants had been preparing for less than 6 months, 50.76% had been preparing for 1–2 years. In the experimental group, 15.38% of the participants were appearing for the examination for the first time, 30.76% were appearing for the second time, 50.76% were appearing for the third time, and 3.07% had attempted the examination more than three times. In the control group, 12.30% of the participants were appearing for the first time, 50.76% were appearing for the second time, 36.92% were appearing for the third time, and none had attempted the examination more than three times.

**Table 2 : Frequency and percentage distribution of stress levels among MPSC aspirants in the experimental and control groups during the pre-test.**

| LEVEL OF STRESS (SCORE)       | Pre-Test Experimental group |            | Pre-Test Control group |            |
|-------------------------------|-----------------------------|------------|------------------------|------------|
|                               | Frequency                   | Percentage | Frequency              | Percentage |
| Low stress level (0-13)       | 3                           | 4.61%      | 2                      | 3.07%      |
| Moderate stress level (14-26) | 7                           | 10.76%     | 19                     | 29.23%     |
| High perceived level (27-40)  | 55                          | 84.61%     | 44                     | 66.69%     |

Table 2 shows that, according to the level of stress (score) in experimental group, 3(4.61%) had low stress level, 7(10.76%) had moderate stress level and 55(84.61%) had high perceived level score. And the frequency and percentage distribution of samples according to the level of stress (score) in control group, 3(4.61%) had low stress level, 7(10.76%) had moderate stress level and 55(84.61%) had a high perceived level score.

**Table 3 : Frequency and percentage distribution of stress levels among MPSC aspirants in the experimental and control groups during the post-test**

| LEVEL OF STRESS (SCORE)       | Post-Test Experimental group |            | Post-Test Control group |            |
|-------------------------------|------------------------------|------------|-------------------------|------------|
|                               | Frequency                    | Percentage | Frequency               | Percentage |
| Low stress level (0-13)       | 54                           | 83.07%     | 0                       | 3.07%      |
| Moderate stress level (14-26) | 11                           | 16.92%     | 32                      | 49.23%     |
| High perceived level (27-40)  | 0                            | 0%         | 33                      | 50.76%     |

The above table 3 depicts that according to the level of stress (score) in experimental group, 54(83.07%) had low stress level, 11(16.92%) had moderate stress level and 0(0%) had a high perceived level score. And the frequency and percentage distribution of samples according to the level of stress (score) in control group, 0(0%) had low stress level, 32(49.23%) had moderate stress level and 33(50.76%) had a high perceived level score.

**Table 4 : Comparison of pre-test and post-test stress levels of MPSC aspirants in the experimental group to evaluate the effectiveness of Jacobson's Progressive Muscle Relaxation Technique**

#### EXPERIMENTAL GROUP

| VARIABLES                                     | MEAN           | STANDARD DEVIATION |
|---|----------------|--------------------|
| Pre-test stress levels of experimental group  | 28.21          | 4.9                |
| Post-test stress levels of experimental group | 10.64          | 3.11               |
| t-value=23.09                                 | P value = 0.01 |                    |

Above table 4 shows a marked reduction in the mean stress score among MPSC aspirants in the experimental group following the administration of Jacobson's Progressive Muscle Relaxation Technique. The mean stress score decreased from 28.21 in the pre-test to 10.64 in the post-test, with the standard deviation decreasing from 4.90 to 3.11, indicating a significant reduction in stress levels after the intervention. The calculated p value is 0.01, which is less than the level of significance ( $p < 0.05$ ), indicating a statistically significant reduction in stress levels among MPSC aspirants in the experimental group following the administration of Jacobson's Progressive Muscle Relaxation Technique.

**Table 5 :** Comparison of pre-test and post-test stress score of MPSC aspirants in the control group.

**CONTROL GROUP**

| VARIABLES                                | MEAN           | STANDARD DEVIATION |
|--|----------------|--------------------|
| Pre-test stress levels of control group  | 27.26          | 4.13               |
| Post-test stress levels of control group | 26.46          | 2.59               |
| t-value=1.22                             | P value = 0.18 |                    |

Above table 5 shows that there was a minimal change in the mean stress score among MPSC aspirants in the control group, with the mean stress score decreasing slightly from 27.26 in the pre-test to 26.46 in the post-test. The standard deviation decreased from 4.13 in the pre-test to 2.59 in the post-test. The calculated t value was 1.22 at 64 degrees of freedom, with a p value of 0.18, which was not statistically significant. Hence, there was no significant difference between pre-test and post-test stress scores in the control group.

## DISCUSSION

### Objective 1: To assess the stress levels among MPSC aspirants in the experimental and control groups

The present study revealed that **the majority of MPSC aspirants in the experimental and control groups experienced moderate to high levels of stress during the pre-test.** This finding indicates that MPSC aspirants are exposed to considerable stress due to intense academic pressure, prolonged preparation periods, uncertainty regarding examination outcomes, repeated attempts, and fear of failure.

This finding is **consistent with Kalavathi B. (2022)**, who reported that a majority of first-year B.Sc. nursing students experienced moderate to severe stress. Similar findings were also reported by **Kaur and Guleria (2021)** and **Sunandha M. (2021)**, who identified high levels of academic stress among nursing students.

Further, studies conducted among competitive examination aspirants, such as **Pardhi (2024)** and **Ramteke et al. (2025)**, also reported a high prevalence of stress, anxiety, and depression among aspirants preparing for competitive examinations. These similarities suggest that stress is a common phenomenon among students facing competitive academic environments.

### Objective 2: To evaluate the effectiveness of Jacobson's progressive muscle relaxation technique on stress levels among MPSC aspirants

The findings of the present study demonstrated a **statistically significant reduction in stress levels among MPSC aspirants in the experimental group after the administration of Jacobson's Progressive Muscle Relaxation Technique.** The mean post-test stress score was markedly lower than the pre-test stress score, and the difference was statistically significant ( $p < 0.05$ ).

In contrast, the control group showed **only minimal changes in stress levels**, and the difference between pre-test and post-test scores was **not statistically significant**, indicating that the reduction in stress observed in the experimental group was attributable to the JPMR intervention.

These findings are **strongly supported by Shandily et al. (2021), Palkar et al. (2021), and Mushtaq (2021)**, who reported significant reductions in stress levels following the practice of JPMR among nursing and medical students. Similar effectiveness of JPMR has also been reported among teachers, patients, caregivers, and school students by **Margawati (2019), Essa et al. (2017), and Umarani et al. (2015)**.

The consistent findings across various populations indicate that **JPMR is a simple, cost-effective, non-pharmacological, and evidence-based stress management technique**, making it suitable for routine use among competitive examination aspirants. Thus, the research hypothesis related to the effectiveness of JPMR was accepted.

### **Objective 3: To determine the association between pre-test stress levels and selected demographic variables**

**Present study finding**, Age showed a statistically significant association with pre-test stress levels among MPSC aspirants, with higher stress observed among younger age groups.

**Comparison with similar study**, a similar finding was consistent with studies reviewed by **Wenjuan G. et al. (2020)** and **Yumba W. (2020)**, which reported that younger students experienced higher stress levels due to academic pressure, fear of failure, and uncertainty regarding future career prospects.

**Present study finding**, No statistically significant association was found between gender and pre-test stress levels among MPSC aspirants.

**Comparison with similar study**, similar finding is supported by studies conducted by **Sutar S. & Patil J.R. (2018)** and **Londhe P. (2019)** among MPSC aspirants, which reported no significant gender difference in stress, anxiety, and depression levels, indicating that competitive examination stress affects both genders equally.

**Present study finding**, Educational status did not show a statistically significant association with pre-test stress levels.

**Comparison with similar study**, Similar findings were reported by **Kareem M. (2019)** and **Bag R. (2016)**, who found that stress levels among students were not significantly influenced by educational qualification. The competitive nature of examinations was identified as a dominant stressor.

**Present study finding**, No statistically significant association was found between family income and pre-test stress levels.

**Comparison with similar study**, This finding is consistent with studies by **Al-Qahtani & Alsubaie (2020)** and **Kareem M. (2019)**, which reported that stress levels were not significantly associated with family income, as academic workload and performance expectations played a greater role.

**Present study finding**, Area of residence showed a statistically significant association with pre-test stress levels in the control group.

**Comparison with similar study**, This finding is in agreement with studies by **Ribeiro et al. (2021)** and **Nebhinani M. et al. (2020)**, which reported higher stress levels among students residing in hostels or rented accommodations due to lack of emotional support and adjustment difficulties.

**Present study finding**, Type of family did not show a statistically significant association with pre-test stress levels.

**Comparison with similar study**, This finding is supported by **Kareem M. (2019)** and **Anchala M. et al. (2016)**, who reported no significant association between family type and stress levels, emphasizing that academic stressors outweigh family structure influences.

**Present study finding**, No significant association was found between hours spent in study and pre-test stress levels.

**Comparison with similar study**, Studies by **Nebhinani M. et al. (2020)** and **Sunandha M. (2021)** reported similar findings, indicating that stress was influenced more by examination pressure and fear of failure rather than the number of study hours.

**Present study finding**, Years of preparation did not show a statistically significant association with pre-test stress levels.

**Comparison with similar study**, This finding aligns with studies among competitive examination aspirants by **Londhe P. (2019)** and **Chayanlal R. Pardhi (2024)**, which indicated that prolonged preparation does not necessarily reduce stress and may increase anxiety due to repeated attempts.

**Present study finding**, No statistically significant association was observed between time spent on internet/social media and pre-test stress levels.

**Comparison with similar study**, This finding is consistent with **Rehman & Baluja (2021)** and **Yumba W. (2020)**, who reported that moderate internet and social media use did not significantly influence stress levels compared to academic stressors.

**Present study finding**, Number of attempts in the MPSC examination did not show a statistically significant association with pre-test stress levels.

**Comparison with similar study**, This finding supports the observations of **Londhe P. (2019)** and **Chayanlal R. Pardhi (2024)**, which reported comparable stress levels among first-time aspirants and repeaters, highlighting persistent examination pressure regardless of attempt number.

### **Experimental Group**

In the experimental group, **age showed a statistically significant association with pre-test stress levels**, indicating that younger aspirants experienced higher stress levels. This may be due to limited experience in handling competitive examinations, higher expectations, and uncertainty regarding future career prospects.

This finding is **supported by Castelino (2016)** and **Premeelarani et al. (2014)**, who reported significant associations between age and stress levels among nursing students and adolescents. However, this finding contrasts with **Al-Qahtani and Alsubaie (2020)**, who reported no significant association between age and stress, possibly due to differences in study population and academic context.

Other demographic variables such as gender, educational status, family income, area of residence, type of family, hours of study, years of preparation, internet usage, and number of examination attempts **did not show a statistically significant association with pre-test stress levels**. This indicates that stress among MPSC aspirants is largely influenced by examination-related factors rather than personal demographic characteristics.

### **Control Group**

In the control group, **area of residence showed a statistically significant association with pre-test stress levels**. Aspirants residing in hostels or rented accommodations experienced higher stress compared to those staying at home. This may be attributed to lack of emotional support, adjustment difficulties, financial constraints, and an unfavorable study environment.

This finding is **consistent with Sunandha M. (2021) and Sunandha JS (2018)**, who reported that students residing away from home experienced higher levels of academic stress and anxiety.

Other demographic variables did not show a statistically significant association with pre-test stress levels in the control group, leading to the acceptance of the null hypothesis for these variables.

## CONCLUSION

Based on the findings of the present study, the following conclusions were drawn:

1. MPSC aspirants experience **considerable levels of stress** during the preparation phase.
2. Jacobson's progressive muscle relaxation technique is **effective in significantly reducing stress levels** among MPSC aspirants.
3. Demographic variables such as gender, education, income, study hours, years of preparation, and number of attempts **did not significantly influence stress levels**.
4. **Age and area of residence** were found to have a significant association with stress levels.
5. JPMR is a **simple, cost-effective, and non-pharmacological intervention** that can be easily practiced by aspirants.

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