

# Effectiveness of Jacobson's progressive muscle relaxation techniques on enhancing sleep quality and psychological well-being among Veterinary Medical final year students

A study (Review of literature)

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## Abstract:

Lack of sleep is a major problem nowadays. Veterinary medical students are exposed to a significant level of pressure due to academic demands. Poor sleep quality has been found to affect not only academic performance but also psychological well-being. The National Sleep Foundation recommends 7 to 9 hours of sleep for young adults [18 - 25 years old] and 7 to 8 hours of sleep for adults [26 -64 years old]. According to the research sleep quality and psychological well-being has a strong association. Poor sleep quality is associated with poor psychological well-being. Jacobson's progressive muscle relaxation techniques can enhance sleep quality. Proper sleep can help to enhance psychological well-being. This study aims to summarise the effectiveness of Jacob's son's progressive muscle relaxation techniques in enhancing sleep quality and psychological well-being.

**Keywords:** sleep quality, psychological well-being, JPMRT, veterinary students.

## Introduction

Sleep is nothing but the body's reset cycle. In other words, sleep is a complex biological process that helps to process new information and feel rested. Sleep is also defined in physiology that sleep is a state of unconsciousness. Sleep states alternate between REM (rapid eye movement ) and non-REM sleep. Good hygiene and sleep is an essential parts of everyday life and humans spend one-third of their lifetime sleeping. Sleep disturbance interfered with physical function and results in fatigue; depression, irritability impaired cognitive functions and negative psychological well-being. Poor sleep quality is a symptom, and it is featured by difficulty in falling and remaining asleep. Extensive research has shown that sleep quality has become an increasing public health focus, and poor sleep quality leads to an increased risk of mental problems. including depression and anxiety.

Common sleep disorders include insomnia (difficulty falling and/or staying asleep), hypersomnia (excessive daytime sleepiness), and sleep apnea (airflow is limited while sleeping, causing low oxygen saturation and disrupted sleep). Many important physiological changes take place in all body systems and organs during sleep, but with insufficient sleep, physical and mental health problems ensue. Changes in sleeping patterns or difficulty sleeping: Insomnia is one of the most significant and common signs of disturbed mental health. Mood swings or irritability: Veterinarians are usually calm and patient, thanks to their profession. Mood swings or lack of patience is a big sign when it comes to the deteriorated mental health of veterinarians. In one study, 88% of practicing veterinarians who responded stated that veterinary medicine is very stressful, 66% stated that they had clinical levels of depression, and 20% reported seriously considering suicide. Veterinary students are not exempt from these problems. A survey of veterinary students revealed a bevy of wellness problems: headaches, sleep disturbance, overly busy thinking, inability to concentrate, increase or decrease in food intake, procrastination, depression, feeling overwhelmed, and chronic tiredness. Veterinary students, therefore, fall into a doubly at-risk category of both being students in a medical education program and being in the field of veterinary medicine. However, almost no information is available about the sleep health of veterinary students. The lone available study in this area revealed that >50% of students reported getting less than the recommended amount of sleep as well as having significant daytime sleepiness. In that study 28% of students reported having trouble sleeping, 42% rated their sleep quality as fair or poor, and 68% reported driving while drowsy.

### JPMR

Progressive muscle relaxation (PMR) is a well-known technique for reducing muscle tension. It entails a series of exercises that involve tensing and relaxing muscle groups (Khanna et al., 2007). It was created in the early 1920s by American physician Edmund Jacobson and consists of two parts: physical and mental (Pawlow and Jones, 2002). Relaxation improves concentration, increases the feeling of control, improves the ability to block inner talk, decreases the cardiac index, lowers blood pressure, warms or cools body parts, and creates a pleasant mental state. Progressive muscle relaxation works because when your muscles are fully relaxed, it's natural for your body to move from an alert state to a resting state. When you encourage each muscle group to relax – in tandem with slow, diaphragmatic breathing. As a result, Progressive Muscular Relaxation offers long-term effects that improve patients' quality of life (Sharma et al., 2013; Varvogli and Darvini, 2011). Relaxation techniques have numerous physical, biological, and psychological advantages. Progressive muscle relaxation is based on the observation that muscles relax easier from a high tension posture than from a low tension state. Muscle tension associated with headaches and body problems, for example, is a type of moderate residual tension that goes unnoticed by people for days. PMRT has also been shown in numerous trials to improve feelings of self-control (Chen et al., 2009; Molassiotios, 2000). Progressive muscle relaxation restores the nervous system to its active state. Relaxation improves blood circulation, promotes endorphin secretion, and reduces tension and anxiety induced by the formation of a positive attitude due to increased brain activity and helps to sleep better. These exercises lower one's heart rate and blood pressure, slow and deepen breathing, and create an increased sense of well-being. Research has shown that these changes help us fall asleep, demonstrating that relaxation techniques can help reduce the symptoms. The researcher also stated that PMR is most effective when practised for a single session of 25 to 30 minutes. The goal of this study is to see how efficient progressive muscle relaxation is to enhance sleep quality and psychological well-being.

## Methods

An electronic search was done in the Google Scholar. The search was filtered down to articles published in the last 10 years. The keywords used for the search are sleep quality, psychological well-being, JPMR. The selection of the article was based on the title and abstract and restricted to articles only published in English.

## REVIEW OF LITERATURE

**Michel T. Happier, Lara Bartt-Wilson, Tiffany shoop and Shelby Borowski's (2019)** study measures the sleep quality and sleepiness among veto Medical students over an Academic year. The sample included 312 students currently enrolled in veterinary school statistical tools used were Pittsburgh Sleep Quality Index. Students were found to have overall poor sleep quality and above-average to excessive daytime sleepiness. Further investigation is necessary to determine specific causes as well as what action can be taken to improve student sleep health.

**Kenneth D. Royal, Suzanne A. Hunt (...), And Mathew Gerard's (2018)** study was to better understand Veterinary Medical students, Sleep Hygiene and Identity the extent to which sleep hygiene. The sample was 187 doctors of Veterinary Medical in the United States. Statistical tools Epworth Sleep Scale and Daytime Sleepiness Scale. A significant percentage of veterinary medical students exhibit poor sleep hygiene habits that may be detrimental to both their health and academic endeavours.

**Marking veldi, Anu Aluoja, and Veiko Vasar (2005)** aim this paper to conduct a survey based on a questionnaire. The title sleep quality and more common Sleep-Related problems in Medical Problems. The sample (413) students of the University of Tarata 19-33 years aged people. Statistical tools used were The Self-Reported Sleep and Daytime Habits Questionnaire. The study demonstrate that complaints about sleep problems are common in young medical students.

**Asmaa Jniene, sounds Abouddrar Leila Ereguig, Hanan Rkain Mohammed cherti and Taoufiq Dakka (2018)** This study aims to determine Relationship between poor quality sleep excessive daytime sleepiness and low academic performance in Medical Students. The sample 457 Medical students from the faculty . Statistical tools used Pittsburgh Sleep Quality Index and Epworth Sleepiness Scale to determine the quality of sleep and excessive daytime Sleepiness responsibility. A poor sleep quality determined by PSQI  $\geq 5$  was related to poor academic achievement at the end of the study year in medical students.

**Daniel John D. Arboleda (2022)** evaluated a study on "the quality of sleep and psychological well-being senior high school students". The sample included 328 senior high school students. Statistical tools used were the Pittsburgh sleep quality index (PSQI) and Ryff's scale of psychological well-being (RPSWEB).descriptive and inferential were employed in this study for statistical analysis. The results showed that significant relationship between psychological well-being and academic strand; and no significant relationship between sleep quality and psychological well-being.

**Kunal Deal, Pratibha, et.al.(2021)** Evaluated a study on "Impact of simast heart fillness mediation program on stress, quality of sleep, and psychological well-being during the COVID-19 pandemic. A Mixed-method study" The sample included 63 participants in the tody Tools used were perceived stress scale (PSS) and Pittsburgh sleep quality index (PSQI) ANOVA was implemented in this study for statistical analysis. The results showed that a significant reduction in perceived stress score and improvement in sleep quality index was noted at the end of a virtual heartfulness meditation program.

**Munashe chigerwe, Linda Barter Julie E. Dechant, Jonathan D. Dear Karen A. Boudreaux. (2017-2018)** . Mental wellness is an important topic among practicing veterinarians. Peer reviewed studies focusing on veterinary house officers' wellbeing are lacking in veterinary medicine. The aim of this study was to assess wellbeing of house officers using validated surveys for anxiety, burnout, depression, and quality of life. A cross-sectional survey of 103 house officers (residents, interns, and fellows) was performed.

Tools used Generalized Anxiety Disorder (GAD-7), Maslach Burnout Inventory (MBI), Patient Health Questionnaire (PHQ-9), and Short Form-8 (SF-8), respectively. Veterinary house officers experience high levels of burnout characterized by high levels of emotional exhaustion and lack of personal accomplishment, and mild levels of anxiety and depression.

**Rachel E. Whittington n Susan Rhind n Daphne Loads n Ian Handel (2017)** This study set out to improve our understanding of potential pedagogical factors that may influence the mental health of veterinary students. Previous research has demonstrated that the type of feedback given to children by parents and teachers can strongly influence young people's beliefs in their ability to modify their intelligence their "mindset." There is also evidence that we can change the mindset of students relating to their intelligence by changing the methods by which we teach and assess. We used a paper-based questionnaire to assess mindset and psychological well-being in veterinary students (n ¼ 148). We found an association linking students' mindset to their intelligence and their psychological well-being. Students who believed that their level of intelligence was fixed had significantly lower scores on five out of six areas of psychological well-being compared to students who believed that their intelligence was malleable. Giving process rather than person feedback and reducing assessment methods that encourage comparison with other students could increase the proportion of our students with a growth mindset and, if the association we identified is causal, improve their psychological well-being.

**McArthur Hafen Jr et al J vet Med Educ (2022)** This study evaluated associations between healthy activities of daily living, common stressors, and psychological well-being among 230 veterinary medical students at Kansas State University. Psychological Well Being Scale This study identifies potential activities that students can engage in to improve psychological well-being. The discussion section provides specific suggestions for intervention.

**L Fritschi, D Morrison, A Shirangi and L day (2009)** To use established psychological scales to measure levels of distress, anxiety and depression in veterinarians, and compare these levels between different veterinary subgroups and other professional groups. The sample of this study is 2125 veterinary students A cohort of veterinarians was identified through contact with veterinary schools in Australia. Participants completed a self-reporting questionnaire that included queries about general health and

demographics, psychological well-being, job-specific perceptions of health, dispositional characteristics and social support. Poor psychological health is common in the profession and professional veterinary bodies may wish to consider providing training in dealing with work-related distress, anxiety and depression.

**Mohammad-Hossein Kaveh Vida Behmanesh, et.al. (2021)** examined a study on "The impact of educational intervention on sleep quality and psychological well-being among the elderly people". The sample included 90 elderly people with the sleep disorder. Tools used were the Pittsburgh sleep quality index and the Ruff's psychological well-being scale. Systematic random samplings were employed in this study for statistical analysis. In sleep quality, sub scales of sleep efficiency, sleeping time, and taking sleeping pills in experimental and control groups after the intervention.

**Idat Muqodas et.al. (2020)** examined a study on "psychological well-being: A preliminary study of guidance and counselling services development of preservice teachers in Indonesia". The sample included 132 teachers as subjects randomly selected. Tool used was Ryff psychological well-being. Classical twin designs were employed in this study for statistical analysis. The results showed that guidance and counselling services had to develop psychological well-being of the pre-service teachers.

**K Srivastava et al (2007)** examined the study on "psychological wellbeing of medical students". The sample included 105 medical students. Tools used were psychophysiological state inventory, institute for personality ability testing (IPAT), anxiety and depression scale, locus of control, achievement motivation scale and 16 personality factors test. T test and ANOVA were employed in the study for statistical analysis. The results showed that the majority of the students had average achievement, motivation and adaptability, anxiety and depression scores that fell within normal limits.

**Kai Liu, Ying Chen, Duozhi Wu, Ruzheng Lin, Zaisheng Wang, Living Pan (2019)** To investigate the effect of progressive muscle relaxation on anxiety and sleep quality of COVID-19. In this randomized controlled clinical trial, a total of 51 patients who entered the isolation ward were included in the study and randomly divided into experimental and control groups. The experimental group used progressive muscle relaxation (PMR) technology for 30 min per day for 5 consecutive days. During this period, the control group received only routine care and treatment. Before and after the intervention, the Spielberger State-Trait Anxiety Scale (STAI) and Sleep State Self-Rating Scale (SRSS) were used to measure and record patient anxiety and sleep quality. Progressive muscle relaxation as an auxiliary method can reduce anxiety and improve sleep quality in patients with COVID-19.

**Bhumi Reddy Chetan Kumar (2017)** conducted study to assess the effectiveness of Progressive Muscle Relaxation Technique on inducing sleep among cancer patients and to associate the effect of Progressive Muscle Relaxation Technique with the selected demographic variables. Quantitative approach and Quasi-Experimental one group Pre-test and Post-test research design was employed. Non-probability convenient sampling technique was employed to select 40 samples. Sleep Assessment Scale & Sleep problem assessment tool was used. All the 40 subjects of the study majority of them were falling in Dissatisfied Sleep 31(77.5%), 9[22.5%] subjects were falling under Disturbed sleep and none were falling under Sound Sleep category. There is a significant decrease in the post-test score (mean 30.7) of subjects after

administration of Progressive Muscle Relaxation Technique compared to pre- test score (mean 55.62). Hence the Hypothesis H1 is accepted that is Progressive Muscle Relaxation Technique is effective to induce sound sleep. There is no significant association between the Effect of Progressive Muscle Relaxation Technique and the demographic variables. Hence regular muscle relaxation exercise can help the patient induce sleep and maintain their healthy sleep pattern.

**Francis et al (2012)** conducted a study to evaluate the effectiveness of progressive muscle relaxation (PMR) on the quality of sleep of hospitalized medical patients of a selected hospital in Mangalore. Randomized control trial was used to test the effectiveness of Jacobson's Progressive Muscle Relaxation Technique on quality of sleep (QOS) among 60 medical patients. Both the groups (Experimental and Control) were observed with pre-test and post-test. Demographic proforma, Modified Pittsburgh sleep quality index and 3 point rating scale on assessing factors affecting Quality of sleep were used to collect data from the sample. Hence, the study revealed a significant improvement in the QOS in the experimental group after PMR. No significant association was found between QOS and selected demographic variables. The present study revealed that days of progressive muscle relaxation therapy was very effective for medical patients with poor quality of sleep.

## Conclusion

The research articles contribute to a better understanding of the progressive muscle relaxation response, which shows that relaxation can help with a variety of psychological issues, including depression, stress, and aggression and sleep problem. The benefits of JPMRT on overall health outcomes have been shown in the literature. Several studies have verified the usefulness of Progressive Muscle Relaxation Technique in lowering anxiety, stress, sadness, hypertension, blood pressure, sleep problems. All these research studies have shown that gradual muscle relaxation is useful in lowering anxiety, stress, and depression. Only a few researches have looked into the usefulness of gradual muscle relaxation in lowering these figures. Taking all of the facts into account, the present study aims to assess the efficacy and prospective usefulness of JPMRT in enhancing sleep quality and improving psychological well-being in veterinary students. These exercises lower one's heart rate and blood pressure, slow and deepen breathing, and create an increased sense of psychological well-being. Research has shown that these changes help us fall asleep, demonstrating that relaxation techniques can help reduce the symptoms. Regular practice of JPMRT can help reduce stress, anxiety, increase muscle relaxation and make a blood flow it help. Studies have also proved that JPMR can enhance sleep quality and psychological well-being. There's is no exact research on veterinary students sleep quality and psychological well-being but Veterinarians are an at-risk population for poor psychological wellness which can result in burnout, substance abuse, depression, anxiety, and suicide and sleep issues.

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