



## **Evaluation of Various Stress Management Strategies among Chennai People - A Cross Sectional Study**

**A. N. K. Mitthun <sup>a</sup>, G. Sridevi <sup>b\*</sup> and S. Preetha <sup>b</sup>**

<sup>a</sup> Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai-77, Tamil Nadu, India.

<sup>b</sup> Department of Physiology, Saveetha Dental College and hospital, Saveetha Institute of Medical and Technical Sciences, Chennai-77, Tamil Nadu, India.

### **Authors' contributions**

*This work was carried out in collaboration among all authors. Author ANKM Literature search, survey, data collection, analysis, manuscript writing. Author GS Study design, data verification, manuscript drafting. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i58A34100

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/74444>

**Original Research Article**

**Received 02 August 2021**

**Accepted 08 October 2021**

**Published 14 December 2021**

### **ABSTRACT**

**Background:** Feeling stressed is a part of everyone's life. A feeling of emotional or physical tension is known as stress. Relaxation strategies play an important role in overcoming stress.

**Objective:** To evaluate the different stress patterns, their perceived stress and effects of different stress management strategies.

**Methods:** A cross sectional study was conducted through a convenience sampling method. The participants were administered with a self developed questionnaire consisting of 11 questions. The responses were collected using google forms. Descriptive statistics, frequency analysis and chi square test was used to analyse the data.

**Results:** The present study reported that the majority of respondents were stressed due to academic and personal reasons and among the various stress relaxation methods, respondents felt that music and yoga relieved them from stress.

**Conclusion:** The study concluded an innovative finding that music and yogic exercises when adopted provided a decent stress management strategy that suits the respondents.

*Keywords: Stress; symptoms; relaxing protocols; innovative finding.*

## 1. INTRODUCTION

Stress is a normal physiological reaction that happens to everyone in response to a stressor. By nature, the human body is designed to experience stress and react to it. When you experience changes or challenges (stressors), the body produces physical and mental responses [1]. There are various reasons that produces a stress response like poor sleep habits, working long hours, financial reasons, academic reasons, working long hours, problems in relationships or emotional problems. The fight or flight response is an automatic physiological reaction to an event produced by frightening[2]. The perception of threat activates the systema nervus system and triggers an acute stress response that prepares the body to fight or flight response[3]. Not only human studies, but animal models too were also observed by scientists that when animals were threatened by exposure to a predator for example, their bodies released the hormones like adrenaline or epinephrine which would lead to a series of bodily changes including increased pulse and respiration. The hormone that regulates a stress response is Cortisol. Cortisol regulates processes throughout the body including metabolism and immune reaction[4]. It also has a very important role in helping the body respond and overcome the reaction to stress. Studies report that Chronic academic stress results in decreased academic performance, depression, physical, irritability, drug or alcohol experimentation and illness[5]. Hypothalamic pituitary axis (HPA) ensures that the body can respond quickly to stressful events and return to normal state rapidly.[6] When an organism experiences stress, the HPA axis response begins with the discharge of corticotropin-releasing factor (CRF) from the hypothalamus, stimulating the discharge of adrenocorticotrophic hormone (ACTH) from the pituitary[7]. Stress coping methods are cognitive, behavioral and efforts to deal with stress. Stress leads to anxiety, irritability, depression and problems with memory and concentration. Physical effects of stress are Headaches, low energy, disturbed stomach, including constipation, diarrhea, and nausea, pains, tense muscles, Aches. Chest pain and rapid heartbeat, Insomnia, Frequent colds and infections, loss of sexual desire, Commonly used methods to relieve stress are Meditate, picture yourself relaxed, breathe deeply, look around you, drink hot tea, show some love, try self-Massage or Take a Time-Out[8]. Our team has extensive

knowledge and research experience that has translate into high quality publications [9–13].

The aim of the research is to evaluate the different stress patterns, their perceived stress and effects of different stress management strategies adopted by the participants for stress relaxation by cross sectional method.

## 2. MATERIALS AND METHODS

The present cross sectional study was conducted using an online questionnaire.

Questionnaire consisted of 11 closed ended questions. Survey was conducted in Google forms among the normal healthy population in Chennai. People suffering from depression or other psychotic illnesses were excluded from study because their response to stress and adopted methods would be quite difficult compared to normal healthy individuals. Frequency analysis and chi square test was done using SPSS version 23.

## 3. RESULTS

The present study observed that about 70% of respondents were students, 20% were professional workers, 5% of respondents were sports persons and 5% of respondents were homemakers (fig 1). About 60% of respondents were of age group 18-20, 20% were of age group 21-30, 20% were of age group 31-40. About 65% of respondents said academic reason is the main reason for stress, 20% of respondents said official reason is the main reason, 10% of respondents said personal reasons is the main reason (fig 4). If academic reason was the main reason, about 40% of respondents said huge syllabus and time management was the main reason, 28% of respondents said huge syllabus and time management, strict attitude of staff, pressure from parents to get good marks are the main reasons for stress. If personal problems were the main reason 40% of respondents said the problem with friends is the main reason, 28% of respondents said financial problems are the main reason for stress. About 52% of respondents said listening to music helped them to relieve stress, 12% of respondents said spending time with pet animals helps them relieve stress, 9% practise yoga, 7% of respondents exercises, 8% said they pray during stressful events, 6% of respondents said they keep quiet during problems (fig 2). About 56% of respondents said they consume antidepressant

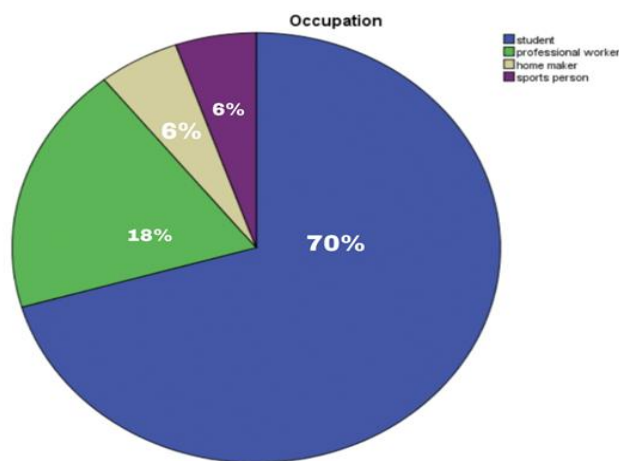
drugs. About 37% said drinking tea helps them relieve stress. About 28% of respondents said they experience insomnia, 23% of respondents said they experience headache, 20% of respondents said they forget things, and 18% of respondents said they experienced loss of appetite (Fig 3).

### 3.1 Cross Tab Evaluation

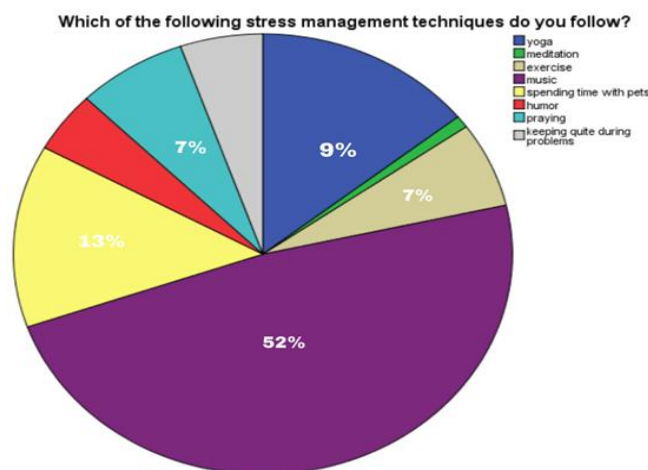
The association between gender and different stress management techniques was analysed. More number of male prefer listening to music and among females many responded

praying helps them escape stress. Pearson chi square value was found 0.000. Hence, it is statistically significant (Table 1).

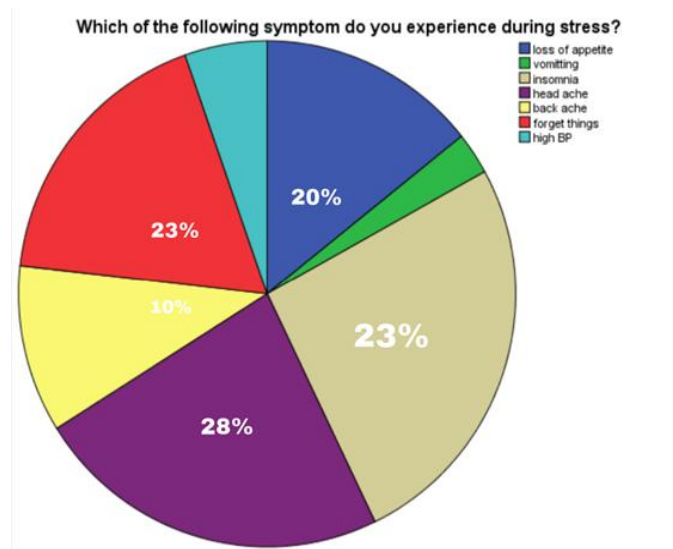
The association between gender and reason for stress was analysed and males responded that huge syllabus and time management was the main reason for stress and the value was statistically significant. Pearson chi square value was found 0.000. Hence, it is statistically significant (Table 1).



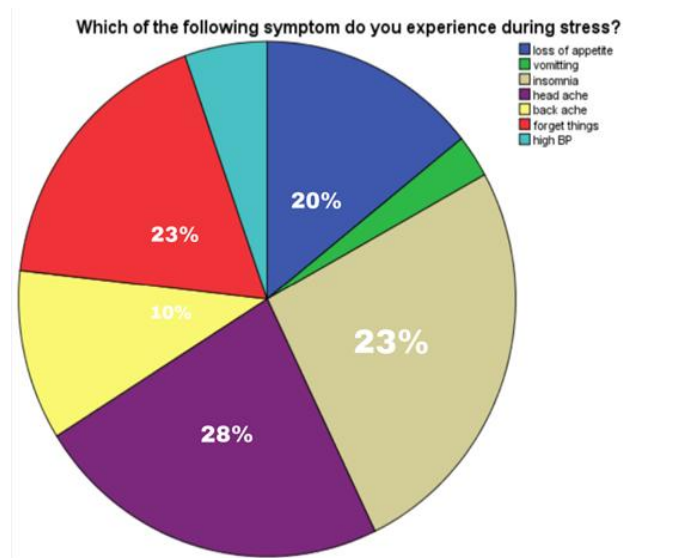
**Fig. 1. Shows occupation of respondents. Blue denotes student, green denotes professional worker, purple denotes sports person and brown denotes home maker. About 70% of respondents were students, 18% were professional workers, 6% were homemakers and 6% were sports persons**



**Fig. 2. Shows stress management techniques followed by respondents. Purple denotes music, blue denotes yoga, yellow denotes spending time with their pets, gray denotes keeping silent in problems, red denotes humour, cyan denotes praying and brown denotes exercise**



About 51% of respondents listen to music, 12% spend time with their pet, 10% do yoga to relieve stress, 8% pray to relieve stress and 7% of respondents exercise



**Fig. 3. Shows symptoms experienced by respondents during stress. Purple denotes headache, brown denotes insomnia, yellow denotes back ache, red denotes forget things, cyan denotes high bp, blue denotes loss of appetite and green diabetes vomiting. About 28% of respondents experienced insomnia, 23% experienced back ache, 19% experienced forgetting things, 10% experienced headache, 11% experienced high bp**

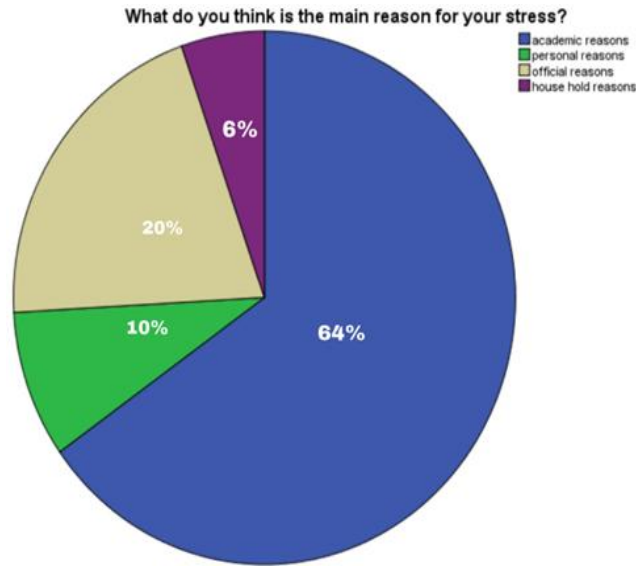
#### 4. DISCUSSION

Stress is a threatful experience that every individual experiences in every part of his life to meet his financial, occupational, family and personal demands. The reasons for stress in different professional groups may be attributed to conflicts among workers and companies, lack of security, poor communication, urgent deadlines, too much workload, longer working hours,

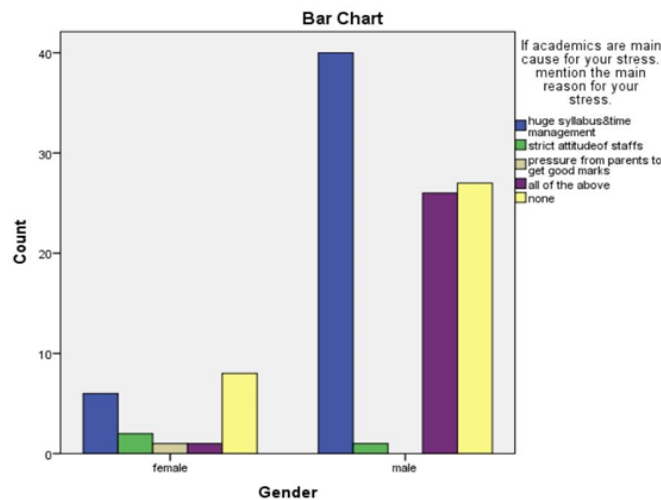
company policies etc.[14] Stress management is a wide arena consisting of different techniques and psychotherapies that help to control the person's level of stress. The present study reveals that male were more stressed and the majority of them suffered from insomnia and headache. The reasons for their stress were mainly academic and official reasons. Among the various stress relaxing methods, our participants responded more with music, yoga and spending

time with pet animals. Previous studies reported that there are many Stress-management techniques including relaxation techniques, time-management skills, counseling or group therapy, exercise therapy techniques for maintaining an overall healthy lifestyle. They also reported that

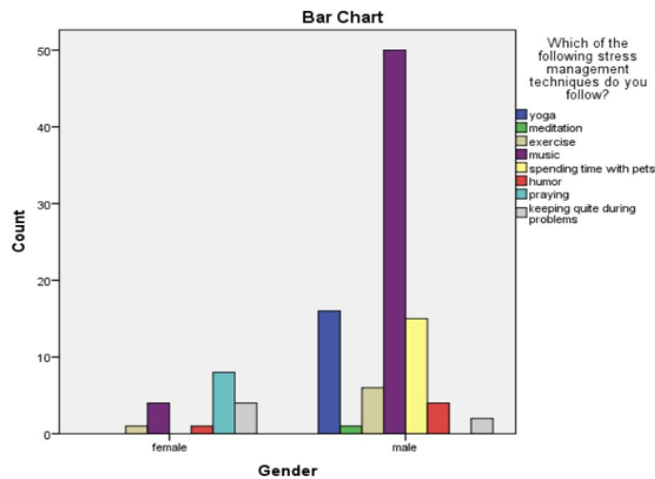
there are hundreds of various relaxation techniques that help to combat stress like yoga, guided imagery, biofeedback, qigong, tai chi and progressive muscle relaxation.[15,16,17,18,19–23].



**Fig. 4.** Show the main reason for stress in respondents. Blue denotes academic reason, green denotes personal reasons, brown denotes official reasons and purple denotes house hold reasons. About 64% of respondents said academic reasons, 20% said official reasons, 10% of respondents said personal reasons and 6% said household reasons



**Fig. 5.** The bar graph represents the association between gender and the main reason if academics is the main reason for stress. X axis represents the gender and the y axis represents the number of respondents. Blue denotes huge syllabus and time management, green denotes strict attitude of staff, brown denotes pressure from parents, purple denotes all of the above and yellow denotes none. Male responded that the huge syllabus and time management was the main reason for stress. Pearson chi square value was found 0.000 ( $p < 0.05$ ). It is statistically significant



**Fig 6. The bar graph shows the association between gender and stress management techniques. X axis represents the gender and the y axis represents the number of respondents. Followed. Blue denotes yoga, green denotes meditation, brown denotes exercise, purple denotes music, yellow denotes spending time with pets, red denotes humor, cyan denotes praying and grey denotes keeping quiet during problems. It is evident that majority of male prefer listening to music compared to females and the value was found to be statistically significant as in chi square test, p value = 0.000. (p<0.05)**

**Table 1. Chi square table of association graphs**

Pearson Chi square test	P value
Association between gender and the main reason if academics is the main reason for stress.	0.004
Association between gender and stress management techniques.	0.000

In the present study, most of the respondents reported that they felt better with stress relaxation after yoga and exercise. Previous reports also suggested that physical activity can help improve your sleep And better sleep improves stress management. Physical Exercise also improves the mood changes in a person and the reason being the stimulation of the body to release a number of hormones like endorphins and endocannabinoids that block pain signals and also improve sleep, and sedate you. Few reports suggested that release of endocannabinoids may be responsible for the euphoric feeling of stress relaxation.[24] Previous reports claimed that Listening to good music can produce a tremendous relaxing effect on our minds and bodies. This is more with slow, quiet classical music. They can produce a beneficial effect on our physiological functions with reduction in pulse and heart rate, low blood pressure, and decreasing the levels of stress hormones. Thus previous report suggest that Music, in short, can act as a powerful stress relaxing strategy [25].

**5. CONCLUSION**

Thus the present study concluded that male were more stressed and they majority of them suffered from insomnia and headache. The reasons for their stress were mainly academic and official reasons. Among the various stress relaxing methods, our participants responded more with music, yoga and spending time with pet animals.

**LIMITATIONS OF THE STUDY**

The limitations of study include only participants of the age group 18-40 years were included in the study. This population does not represent the total population.

**DISCLAIMER**

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and

producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

## CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Manjone MJ. Stress Relaxation Characteristics and Data Utilization. Residual Stress and Stress Relaxation 1982;519–30. Available:https://doi.org/10.1007/978-1-4899-1884-0\_29.
2. Koenig SM. Beyond Fight or Flight: Responding to Stressful Student Comments in Class. Teaching Theology & Religion 2013;16:51–51. Available:https://doi.org/10.1111/teth.12005.
3. Plaford GR. Fight or Flight: The Ultimate Book for Understanding and Managing Stress. Xlibris Corporation; 2013.
4. Cortisol and Stress. Encyclopedia of Applied Developmental Science n.d. Available:https://doi.org/10.4135/9781412950565.n113.
5. Kumari N. Religious coping strategies for relieving stress. International Journal of Advanced Academic Studies 2020;2:706–8. Available:https://doi.org/10.33545/27068919.2020.v2.i3j.273.
6. Wingenfeld K, Wolf OT. HPA Axis Alterations in Mental Disorders: Impact on Memory and its Relevance for Therapeutic Interventions. CNS Neuroscience & Therapeutics 2011;17:714–22. Available:https://doi.org/10.1111/j.1755-5949.2010.00207.x.
7. Oki Y. Physiology of the HPA Axis. Cushing's Syndrome 2002;1–28. Available:https://doi.org/10.1007/978-1-4615-1103-8\_1.
8. Anshel M, Anderson D. Coping With Acute Stress in Sport: Linking Athletes' Coping Style, Coping Strategies, Affect, and Motor Performance. Anxiety, Stress & Coping 2002;15:193–209. Available:https://doi.org/10.1080/10615800290028486.
9. Sathish T, Karthick S. Wear behaviour analysis on aluminium alloy 7050 with reinforced SiC through taguchi approach. Journal of Materials Research and Technology. 2020;9:3481–7.
10. Campeau PM, Kasperaviciute D, Lu JT, Burrage LC, Kim C, Hori M, et al. The genetic basis of DOORS syndrome: an exome-sequencing study. Lancet Neurol 2014;13:44–58.
11. Dhinesh B, Niruban Bharathi R, Isaac JoshuaRamesh Lalvani J, Parthasarathy M, Annamalai K. An experimental analysis on the influence of fuel borne additives on the single cylinder diesel engine powered by Cymbopogon flexuosus biofuel. J Energy Inst 2017;90:634–45.
12. Parthasarathy M, Isaac JoshuaRamesh Lalvani J, Dhinesh B, Annamalai K. Effect of hydrogen on ethanol-biodiesel blend on performance and emission characteristics of a direct injection diesel engine. Ecotoxicol Environ Saf. 2016;134:433–9.
13. Gopalakannan S, Senthilvelan T, Ranganathan S. Modeling and Optimization of EDM Process Parameters on Machining of Al 7075-B4C MMC Using RSM. Procedia Engineering 2012;38:685–90.
14. Sears WH. Managing the Knowledge Culture: A Guide for Human Resource Professionals and Managers on the 21st Century Workplace 2005 Philip Robert Harris, PhD. Managing the Knowledge Culture: A Guide for Human Resource Professionals and Managers on the 21st Century Workplace. Amherst, Massachusetts, USA: HRD Press, Inc. 2005. pp. 289, ISBN: 0-87425-859-6. European Business Review 2005;17:367–9. Available:https://doi.org/10.1108/09555340510607406.
15. Kamath SM, Manjunath Kamath S, Jaison D, Rao SK, Sridhar K, Kasthuri N, et al. *In vitro* augmentation of chondrogenesis by

- Epigallocatechin gallate in primary Human chondrocytes - Sustained release model for cartilage regeneration. *Journal of Drug Delivery Science and Technology* 2020;60: 101992.  
Available: <https://doi.org/10.1016/j.jddst.2020.101992>.
16. Barabadi H, Mojab F, Vahidi H, Marashi B, Talank N, Hosseini O, et al. Green synthesis, characterization, antibacterial and biofilm inhibitory activity of silver nanoparticles compared to commercial silver nanoparticles. *Inorganic Chemistry Communications* 2021;129:108647. Available: <https://doi.org/10.1016/j.inoche.2021.108647>.
  17. Bharath B, Perinbam K, Devanesan S, AlSalhi MS, Saravanan M. Evaluation of the anticancer potential of Hexadecanoic acid from brown algae *Turbinaria ornata* on HT-29 colon cancer cells. *Journal of Molecular Structure* 2021;1235: 130-229. Available: <https://doi.org/10.1016/j.molstruc.2021.130229>.
  18. Gowhari Shabgah A, Ezzatifar F, Aravindhan S, Olegovna Zekiy A, Ahmadi M, Gheibihayat SM, et al. Shedding more light on the role of Midkine in hepatocellular carcinoma: New perspectives on diagnosis and therapy. *IUBMB Life* 2021;73:659-69.
  19. Sridharan G, Ramani P, Patankar S, Vijayaraghavan R. Evaluation of salivary metabolomics in oral leukoplakia and oral squamous cell carcinoma. *J Oral Pathol Med* 2019;48:299-306.
  20. R H, Hannah R, Ramani P, Ramanathan A, Jancy MR, Gheena S, et al. CYP2 C9 polymorphism among patients with oral squamous cell carcinoma and its role in altering the metabolism of benzo[a]pyrene. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 2020;130: 306-12. <https://doi.org/10.1016/j.oooo.2020.06.021>.
  21. J PC, Pradeep CJ, Marimuthu T, Krithika C, Devadoss P, Kumar SM. Prevalence and measurement of anterior loop of the mandibular canal using CBCT: A cross sectional study. *Clinical Implant Dentistry and Related Research* 2018;20: 531-4. <https://doi.org/10.1111/cid.12609>.
  22. Wahab PUA, Abdul Wahab PU, Madhulaxmi M, Senthilnathan P, Muthusekhar MR, Vohra Y, et al. Scalpel Versus Diathermy in Wound Healing After Mucosal Incisions: A Split-Mouth Study. *Journal of Oral and Maxillofacial Surgery* 2018;76:1160-4. Available: <https://doi.org/10.1016/j.joms.2017.12.020>.
  23. Mudigonda SK, Murugan S, Velavan K, Thulasiraman S, Krishna Kumar Raja VB. Non-suturing microvascular anastomosis in maxillofacial reconstruction- a comparative study. *Journal of Cranio-Maxillofacial Surgery* 2020;48:599-606. Available: <https://www.webmd.com/balance/stress-management/stress-management> (accessed June 5, 2021).
  24. Collingwood J. *The Power of Music To Reduce Stress* 2016. Available: <https://psychcentral.com/lib/the-power-of-music-to-reduce-stress> (accessed June 5, 2021).

© 2021 Mitthun et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
The peer review history for this paper can be accessed here:  
<https://www.sdiarticle5.com/review-history/74444>