

# Commuting Stress in Medical Students

Dharuni Ramachandran<sup>1</sup>, Harish Rangareddy<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Biochemistry, Sapthagiri Institute of Medical Sciences & Research Center, Bengaluru

<sup>2</sup>Associate Professor, Department of Biochemistry, Sri Devaraj Urs Medical College, Kolar

Corresponding Author: Harish Rangareddy

## ABSTRACT

Medical education in India is challenging and can impose a significant quantum of psychological stress on undergraduates. The various contributors of perceived stress among medical students like the excessive workload and educational content, combined with high level of educational demands, a lack of time for leisure, family & friends, studying for residency, choice of specialty, and delayed income have been studied. However, the health effects of commuting have been surprisingly not elaborated upon at all in case of Indian medical students. There should be efforts to understand the complex interactions of medical education and commuting of students during pandemic with a planning to increase awareness of physical distancing, use of sanitizer and face mask among the general population as well as medical students.

**Keywords:** Stress, medical student, medical education

## INTRODUCTION

Hans Selye, an endocrinologist first used the term “stress” in the 1940s. Stress is defined as “a physical or psychological stimulus that can produce mental or physiological reactions that may lead to illness” [1]. Medical education in India is challenging and might impose a large quantum of psychological stress on undergraduates. Moreover, the study of medicine is life-long, limitless, extensive, and extremely nerve racking. Compared to the general population there is a tendency of increased psychological distress amongst medical students starting from stress, social

issues and suicidal ideations to psychiatric disorders [2].

Depression, burnout, and somatic complaints among medical students is associated with high levels of stress. Decreased empathy, serious thoughts about dropping out of medical school, suicidal ideation, and poor academic performance have been associated with high levels of stress [3]. Academics, relationships, poor student guidance, information overload, finances, uncertainty of the future, lack of time to oneself, time and responsibility, and the compulsion to succeed are implied as the cause for vulnerability to stress [4]. Adjustment, moral considerations, student mistreatment, personal life events, educational debt, exposure to patient suffering and death have been described as major cognitive schemas associated with student distress [5].

There is a great quantum of stress and fatigue, and perceived stress while, or immediately after commuting. This has been found to increase with duration, variability in commuting time, lack of predictability, lack of control and crowding. Commuting has also been associated with deleterious health outcomes though not directly linked to commuting itself [6]. For day scholars of a medical school who travel daily between home and medical school, commuting may turn into a source of stress and frustration. These negative health outcomes may be mediated by oxidative injury.

Oxidative stress is caused by imbalance between the productions of free radicals and human body’s ability to detoxify the reactive oxygen species.

Oxidative stress causes toxic effects through DNA damage, lipid oxidation and antioxidant capacity depletion. This oxidative injury may play an important role in mediating health risks associated with oxidative stress. Psychological stress in the form of anxiety, depression, adjustment difficulties, and various psychological conditions are directly correlated with oxidative stress. The determinants of oxidative stress are not only regulated by an individual's unique hereditary factors but also the person's environment and characteristic lifestyle. The present day scenario is such that lifestyle conditions trigger elevated levels of oxidative stress and thereby predisposing the individual to decline in both psychological and physiological functions [7].

There are broad categories of factors that give rise to commuter stress which includes Objective and Subjective stressors. First, there are objective or environmental stressors that negatively impact a person's control or comfort while commuting. Second, there is the subjective experience of these stressors, which are influenced by (for example) the satisfaction a person has with a mode of transport [8].

It has been observed that both objective and subjective stressors of the commute are contributing. Objective stressors that have been found to significantly predict commuting stress include: time spent commuting, speed, traffic congestion, and distance of the commute [9]. Impedance and its role in commuting stress has been the focus of notion for many. Impedance is defined as a behavioral constraint on the individual due to the time spent commuting and the distance of the commute. They found that those who spent longer time commuting combined with greater distance of the commute had significantly more negative moods (tense, irritable, nervous, and impatience) which they conceptualized as indicators of stress [10].

In the past the focus has been on the potential outcomes of antecedent

commuting stress on work and home domains. Commuting stress can be conceptualized as an environmental circumstance that actively distracts attention that one could otherwise be paying to the external commuting environment. This can be detrimental on the physical as well as psychological well-being of individuals. Accidents may occur due to increased distraction, cognitive failure, emotional exhaustion, and lowered concentration, resulting in a greater likelihood to commit errors and procedural violations. Research that has been conducted in the work environment demonstrates that such employees may be especially prone to accidents. Risky safety behaviors while commuting may be extrapolated from these findings among individuals [10].

Prior research focuses on the various factors causing perceived stress among medical students or commuting experience antecedents leading to increased commuter stress but there is paucity of data with respect to the impact of commuter stress in medical students. The various contributors of perceived stress among medical students like the excessive workload and educational content, combined with high level of educational demands, a lack of time for leisure, family & friends, studying for residency, choice of specialty, and delayed income have been studied [5]. However, the health effects of commuting have been surprisingly not elaborated upon at all in case of Indian medical students.

The wellness of the Medical student is a major concern that has recently received increased attention. Through individually focused interventions and medical students self-report stressors that may be better addressed through system-level changes may bring about a significant. In view of the lockdown during the pandemic this commuting stress might have been ignored but with the unlock process and the start of medical colleges this leaves the medical students facing tremendous challenges related to worrying about their own health. There should be efforts to understand the

complex interactions of medical education and commuting of students during pandemic with a planning to increase awareness of physical distancing, use of sanitizer and face mask among the general population as well as medical students.

## REFERENCES

1. Selye H. Stress and disease. *Science*. 1955 Oct 7; 122(3171):625-31.
2. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety & depression among medical undergraduate students & their socio-demographic correlates. *The Indian journal of medical research*. 2015 Mar; 141(3):354.
3. Hill MR, Goicochea S, Merlo LJ. In their own words: stressors facing medical students in the millennial generation. *Med Educ Online*. 2018 Dec; 23(1):1530558. doi: 10.1080/10872981.2018.1530558. PMID: 30286698; PMCID: PMC6179084.
4. Skipworth K. Relationship between perceived stress and depression in college students (Doctoral dissertation, Arizona State University).
5. Shah M, Hassan S, Malik S, Sreeramareddy CT. Perceived stress, sources and severity of stress among medical undergraduates in a Pakistani Medical School. *BMC Med Educ*. 2010; 10:2.
6. Hansson E, Mattisson K, Bjork J, Ostergren P, Jakobsson K. Relationship between commuting and health outcomes in a cross sectional population survey in southern Sweden. *BMC Public Health*. 2011; 11: 834.
7. Srivatsava R, Batra J. Oxidative stress and psychological functioning among medical students. *Ind Psychiatry J*. 2014; 23: 127-133.
8. Chatterjee K, Chng S, Clark B, Davis A, De Vos J, Ettema D, Handy S, Martin A, Reardon L. Commuting and wellbeing: a critical overview of the literature with implications for policy and future research. *Transport reviews*. 2020 Jan 2; 40(1):5-34.
9. Evans GW, Wener RE, Phillips D. The morning rush hour: Predictability and commuter stress. *Environment and behavior*. 2002 Jul; 34(4):521-30.
10. Novaco RW, Stokols D, Milanese L. Objective and subjective dimensions of travel impedance as determinants of commuting stress. *American journal of community psychology*. 1990 Apr 1; 18(2): 231-57.

How to cite this article: Ramachandran D, Rangareddy H. Commuting stress in medical students. *Gal Int J Health Sci Res*. 2020; 5(4): 82-84.

\*\*\*\*\*