




Traffic Congestion and Physical Health of Commuters: Perspective of Dhaka City

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ABSTRACT

The daily commute to the office is the most common scenario for office workers in urban areas. On the other hand, traffic congestion has become a growing concern while commuting. Traffic congestion hurts the environment and the countries economy. Some research found an adverse effect on the mental and physical health of daily commuters. However, the influence of traffic congestion when traveling is not identified yet. This review suggested that the association between road traffic delays and physical health are needed to be explored.

Keywords: Dhaka city, physical health, traffic congest

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INTRODUCTION

According to Traffic Index 2019, Dhaka is the top traffic-congested city in the world. Populous cities like Kolkata, Delhi, or Jakarta are also experiencing the same level of traffic congestion. Traffic congestion is the growing concern of the urban world, which is potentially intensifying the physical health concerns of commuters [1]. According to the World Bank, this notorious traffic congestion ruins 3.2 million working hours every day in Dhaka [2]. Now Dhaka city is experiencing 7km/h driving speed in an average, however, this speed was three times more than current speed in the last decade. If this trend continues, it would bring the city's driving speed slower than the walking speed, e.g.; 4km/h [3] (The Daily Star, 20 July 2017). Furthermore, traffic congestion produces an enormous amount of sound and noise, emits fossil fuel fume, and a long wait until reaching their destiny put mental pressure on commuters mind [4]. Thus, the impact of traffic congestion is widely negative. It is affecting commuters' mental and physical health besides its environmental and financial detriments. Some European cities ban private vehicles in the city Centre or impose high taxes to tackle traffic congestion. However, these measures have been taken to reduce air and sound pollution. One the other hand, effect of commuting on mental health has been justified by the researchers. Nonetheless, effect of long delays in traffic on musculoskeletal health has never been tested. This review would show necessity of research to determine effect of traffic congestion on physical health of passenger who faces traffic congestion in Dhaka city.

ACCOMMODATION IN TRANSPORT AND COMMUTERS ADAPTATION

Most of the public transports in Dhaka city are smaller in size and frequently overloaded which have an inadequate head clearance for the standees, fewer leg rooms for the seated that can force them to adopt a wrong posture. Popular private vehicles and rented cars or three-wheelers of Dhaka is also compact and provide minimal space for the seated passengers to alter their posture. But commuters need to wait for an extended period on the street during traffic jam adopting wrong or same posture. The research revealed that staying in one posture for a long time or adopting bad posture can produce musculoskeletal disorder (MSD) [5-7]. Thus increase numbers of low back pain, neck pain, knee pain patients in Dhaka might have a connection with long delays in traffic congestion. Because, office goers, regardless of male and female of different ages face traffic congestion at least five days a week. On the other hand, pavements of Dhaka are not suitable for walking and Dhaka's street did not get a separate lane for bicycle riders or pedestrians. Investigation of the physical health of Dhaka city dwellers could reveal the impact of traffic congestion on the musculoskeletal health status of its victim.

TRAFFIC CONGESTION, PHYSICAL AND MENTAL HEALTH

Public health researcher Urhonen et al. found that long commuting distance hurts the physical activity of commuters [8]. Furthermore,

during traffic congestion, an enormous amount of motorized vehicle produces an unbearable sound that is absorbed by traffic victims. Interestingly, Environmental researchers found that long exposure to noise and air pollution can produce anxiety and depression [9]. Additionally, Feng et al., (2014) found a positive relationship between worse mental health and a long journey to work [10]. Gottholmseder et al., (2009) and Wener et al., (2003) observed that commuters feel stress and become anxious during commute [11,12]. Finally, Maclachlan et al., (2017) and Karayannis et al., (2018) observed that anxiety and depression could exacerbate lower back pain and knee muscle discomfort [13,14].

Kunn-Nelen (2016) researched to find the relation between commuting time and commuters' health. She found poor health status among long commuters who see general practitioners more frequently than short commuters [4]. Similarly, Hoehner et al., (2012) found that commuting long-distance harms physical activity and cardiorespiratory fitness of commuters [15]. Our research would add further knowledge regarding the effect of a long time commute to the physical health of commuters.

Ironically, research work found that awkward posture in-vehicle is not adversely affecting driver's musculoskeletal pain though psychological factors are associated with drivers' muscle pain [16]. This might be drivers the adaptive ability to their sitting position in the vehicle because two other studies found prolonged sitting posture induce musculoskeletal problems [5,17].

CONCLUSION

From the above review, it can be concluded that further research is needed to explore the effect of traffic-related delays on the physical health of commuters. Reliable daily commuters who face traffic congestion regularly should be selected for conducting research.

REFERENCES

- Smith O. Commute well-being differences by mode: Evidence from Portland, Oregon, USA. *J Transp Heal*. 2017 Mar; 4: 246-54. (doi: 10.1016/j.jth.2016.08.005).
- Bird J, Li Y, Rahman HZ, Rama M, Venables AJ. Toward Great Dhaka: A New Urban Development Paradigm Eastward. *Toward Great Dhaka: A New Urban Development Paradigm Eastward*. The World Bank; 2018. (doi: 10.1596/978-1-4648-1238-5).
- World Bank ready to help transform Dhaka. *The Daily Star*. 2020. Available at: <https://www.thedailystar.net/frontpage/world-bank-ready-help-transform-dhaka-1436368> (Accessed: 25 August 2020).
- Künn-Nelen A. Does Commuting Affect Health? *Health Econ*. 2016 Aug; 25(8): 984-1004. (doi: 10.1002/hec.3199).
- Beach TA, Parkinson RJ, Peter Stothart J, Callaghan JP. Effects of prolonged sitting on the passive flexion stiffness of the in vivo lumbar spine. *Spine J*. 2005; 5: 145-54. (doi: 10.1016/j.spinee.2004.07.036).
- Curran M, Dankaerts W, O'Sullivan P, O'Sullivan L, O'Sullivan K. The effect of a backrest and seatpan inclination on sitting discomfort and trunk muscle activation in subjects with extension-related low back pain. *Ergonomics*. 2014 May 4; 57(5): 733-43. (doi: 10.1080/00140139.2014.897378).
- Scannell JP, McGill SM. Lumbar Posture—Should It, and Can It, Be Modified? A Study of Passive Tissue Stiffness and Lumbar Position During Activities of Daily Living. *Phys Ther*. 2003; 83(10): 907-17. (doi: 10.1093/ptj/83.10.907).
- Urhonen T, Lie A, Aamodt G. Associations between long commutes and subjective health complaints among railway workers in Norway. *Prev Med Reports*. 2016 Dec; 4: 490-5. (doi: 10.1016/j.pmedr.2016.09.001).
- Tzivian L, Jokisch M, Winkler A, Weimar C, Hennig F, Sugiri D, et al. Associations of long-term exposure to air pollution and road traffic noise with cognitive function—An analysis of effect measure modification. *Environ Int*. 2017 Jun; 103: 30-8. (doi: 10.1016/j.envint.2017.03.018).
- Feng Z, Boyle P. Do Long Journeys to Work Have Adverse Effects on Mental Health? *Environ Behav*. 2014; 46(5): 609-25. (doi: 10.1177/0013916512472053).
- Gottholmseder G, Nowotny K, Pruckner GJ, Theurl E. Stress perception and commuting. *Health Econ*. 2009 May 1; 18(5): 559-76. (doi: 10.1002/hec.1389).
- Wener RE, Evans GW, Phillips D, Nadler N. Running for the 7:45: The effects of public transit improvements on commuter stress. *Transportation (Amst)*. 2003; 30(2): 203-20. Available at: <http://link.springer.com/10.1023/A:1022516221808> (Accessed: 4 July 2019).
- Maclachlan LR, Collins NJ, Matthews MLG, Hodges PW, Vicenzino B. The psychological features of patellofemoral pain: a systematic review. *Br J Sports Med*. 2017 May; 51(9): 732-42. (doi: 10.1136/bjsports-2016-096705).
- Karayannis N V, Jull GA, Nicholas MK, Hodges PW. Psychological Features and Their Relationship to Movement-Based Subgroups in People Living with Low Back Pain. *Arch Phys Med Rehabil*. 2018 Jan; 99(1): 121-8. (doi: 10.1016/j.apmr.2017.08.493).
- Hoehner CM, Barlow CE, Allen P, Schootman M. Commuting Distance, Cardiorespiratory Fitness, and Metabolic Risk. *Am J Prev Med*. 2012 Jun; 42(6): 571-8. (doi: 10.1016/j.amepre.2012.02.020).

16. Bahri S, Tamrin M, Yokoyama K, Jalaludin J, Aziz NA, Jemoin N, et al. The Association between Risk Factors and Low Back Pain among Commercial Vehicle Drivers in Peninsular Malaysia: A Preliminary Result. *Ind Health*. 2007; 45: 268-78. (doi: 10.2486/indhealth.45.268).
17. THER Mueller-Klaus P, Oatis Patricia Griegel-Morris CA, Larson K, Grlegel-Morris Keith Larson Krlssann Mueller-Klaus Carol Oatls PA. Subjects Association with Pain in Two Age Groups of Healthy Cervical, Shoulder, and Thoracic Regions and Their Incidence of Common Postural Abnormalities in the Incidence of Common Postural Abnormalities in the Cervical, Shoulder, and Thoracic Regions and Their Association with Pain in Two Age Groups of Healthy Subjects. 1992; 72: 425-31. (doi: 10.1093/ptj/72.6.425).