

PHYSICAL THERAPY AND PUBLIC HEALTH

Aatik Arsh¹, Haider Darain²

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Physical therapy is closely related to public health because physical therapy is used in the prevention and management of many public health related issues. In 2016 Forouzanfar et al. gathered global data and reported 30 major public health issues in term of disability adjusted life years (DALY) and years of life lost (YLL).¹ In current paper, role of physical therapy in the prevention and management of leading 30 global risk factors for DALY and leading 30 causes of YLL are discussed.

The first and most important risk factor for DALY is high blood pressure. Though physical therapy interventions can't be used directly to treat high blood pressure, however physical therapy exercises can help in preventing and controlling high blood pressure.^{2,3,4} Thus, physical therapy has role in the utmost important public health issue i.e. high blood pressure. The second leading risk factor for DALY is smoking. Smoking directly affects lungs and thus badly affects overall health of the individual.⁵ However, smokers who perform regular aerobic exercises have good respiratory parameters i.e. vital capacity etc. as compared to those smokers who have sedentary lifestyle.^{6,7}

Another important risk factor for DALY is high fasting plasma glucose. Not surprisingly, physical activity improves quality of life of diabetes patients and helps in controlling high plasma glucose.^{8,9} The fourth leading risk factor for DALY which is increasing day by day is high body mass index. Indeed, obesity is alarmingly increased in past few decades.^{10,11} Obviously, physical activity including aerobic exercises and specific strengthening exercises are the main strategies for preventing high body mass index.^{10,12} Other leading risk factors for DALY in which physical therapy protocols can be used are high total cholesterol, low physical activity, and occupational ergonomic and occupational injuries.¹³⁻¹⁵

One of the most important causes of YLL in modern world is ischemic heart disease. There is not enough evidence to support the fact that whether physical activity and exercises can prevent, treat or minimize complications of ischemic heart disease.^{16,17} However, in general practice physical activity is always advised to some extent in ischemic heart disease.¹⁸ Another major cause of YLL is cerebrovascular disease. Physical therapy interventions such as motor relearning program, constraint induced movement therapy, gait training etc. are the main rehabilitation protocols for patients with cerebrovascular disease.^{19,20} Diabetes, which is associated with incredible human sufferings due to its sufferings, is also a leading cause of YLL. Physical activity only not helps in controlling diabetes but also improve quality of life by minimizing complications.^{8,9} Falls, which are common due to balance problems, is one of the leading causes of YLL. Balance training is a major domain of physical therapy rehabilitation which can prevent falls geriatric population and in those with compromised balance.^{21,22} Other leading causes of YLLs in which physical therapy protocols can be used are Lower respiratory infection, Chronic obstructive pulmonary disease (COPD), Tuberculosis and lung cancer, neonatal preterm birth complications, neonatal encephalopathy, neonatal sepsis, congenital anomalies, Meningitis, chronic kidney disease, liver, stomach and breast cancer, road injuries and alzheimers disease.²³

To sum up, it can be concluded that physical therapy has role in prevention and management of major public health issues. In some leading risk factors and conditions, physical therapy has direct role in prevention and management e.g. occupational ergonomic and cerebrovascular diseases while in some conditions it has adjunct role e.g. COPD and respiratory infections.

¹ Lecturer, Institute of Physical Medicine and Rehabilitation
Khyber Medical University, Peshawar

² Professor, Institute of Physical Medicine and Rehabilitation
Khyber Medical University, Peshawar

Correspondence

Aatik Arsh
Lecturer
Institute of Physical Medicine and Rehabilitation
Khyber Medical University, Peshawar
Email: aatikarshkmu@yahoo.com
Cell: +923446997046

REFERENCES

1. Forouzanfar MH, Afshin A, Alexander LT, Anderson HR, Bhutta ZA, Biryukov S, et al. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet.* 2016;388(10053):1659-724.
2. Dreeben O. Introduction to physical therapy for physical therapist assistants: Jones & Bartlett Learning; 2007.
3. Thompson PD, Buchner D, Piña IL, Balady GJ, Williams MA, Marcus BH, et al. Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease: a statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity). *Arteriosclerosis, thrombosis, and vascular biology.* 2003;23(8):e42-e9.
4. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo Jr JL, et al. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. *hypertension.* 2003;42(6):1206-52.
5. Sopori M. Effects of cigarette smoke on the immune system. *Nature Reviews Immunology.* 2002;2(5):372.

6. Health UDO, Services H. The health consequences of involuntary exposure to tobacco smoke: a report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2006;709.
7. Penedo FJ, Dahn JR. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current opinion in psychiatry*. 2005;18(2):189-93.
8. Association AD. Physical activity/exercise and diabetes mellitus. *Diabetes care*. 2003;26(suppl 1):s73-s7.
9. Boulé NG, Haddad E, Kenny GP, Wells GA, Sigal RJ. Effects of exercise on glycemic control and body mass in type 2 diabetes mellitus: a meta-analysis of controlled clinical trials. *Jama*. 2001;286(10):1218-27.
10. Janssen I, Katzmarzyk PT, Boyce WF, King MA, Pickett W. Overweight and obesity in Canadian adolescents and their associations with dietary habits and physical activity patterns. *Journal of adolescent health*. 2004;35(5):360-7.
11. Arsh A, Ali A, Ullah I, Darain H, Khan A, Zaidi MU, et al. BODY MASS INDEX IN MEDICAL STUDENTS AND ITS ASSOCIATION WITH GENDER AND ACADEMIC YEAR. *Pak J Physiol*. 2017;13(3):18-21.
12. Jakicic JM, Davis KK. Obesity and physical activity. *Psychiatric Clinics*. 2011;34(4):829-40.
13. Warburton DE, Nicol CW, Bredin SS. Health benefits of physical activity: the evidence. *Canadian medical association journal*. 2006;174(6):801-9.
14. Andersen LB, Harro M, Sardinha LB, Froberg K, Ekelund U, Brage S, et al. Physical activity and clustered cardiovascular risk in children: a cross-sectional study (The European Youth Heart Study). *The Lancet*. 2006;368(9532):299-304.
15. Piegorsch KM, Watkins KW, Piegorsch WW, Reiningger B, Corwin SJ, Valois RF. Ergonomic decision-making: A conceptual framework for experienced practitioners from backgrounds in industrial engineering and physical therapy. *Applied ergonomics*. 2006;37(5):587-98.
16. Maron BJ, Chaitman BR, Ackerman MJ, Bayes de Luna A, Corrado D, Crosson JE, et al. Recommendations for physical activity and recreational sports participation for young patients with genetic cardiovascular diseases. *Circulation*. 2004;109(22):2807-16.
17. Nordestgaard BG, Chapman MJ, Humphries SE, Ginsberg HN, Masana L, Descamps OS, et al. Familial hypercholesterolaemia is underdiagnosed and undertreated in the general population: guidance for clinicians to prevent coronary heart disease: consensus statement of the European Atherosclerosis Society. *European heart journal*. 2013;34(45):3478-90.
18. Smith Jr SC, Jackson R, Pearson TA, Fuster V, Yusuf S, Faergeman O, et al. Principles for national and regional guidelines on cardiovascular disease prevention: a scientific statement from the World Heart and Stroke Forum. *Circulation*. 2004;109(25):3112-21.
19. Van Peppen RP, Kwakkel G, Wood-Dauphinee S, Hendriks HJ, Van der Wees PJ, Dekker J. The impact of physical therapy on functional outcomes after stroke: what's the evidence? *Clinical rehabilitation*. 2004;18(8):833-62.
20. Jette DU, Latham NK, Smout RJ, Gassaway J, Slavin MD, Horn SD. Physical therapy interventions for patients with stroke in inpatient rehabilitation facilities. *Physical therapy*. 2005;85(3):238-48.
21. Panel on Prevention of Falls in Older Persons AGS, Society BG. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. *Journal of the American Geriatrics Society*. 2011;59(1):148-57.
22. Belgen B, Beninato M, Sullivan PE, Narielwalla K. The association of balance capacity and falls self-efficacy with history of falling in community-dwelling people with chronic stroke. *Archives of physical medicine and rehabilitation*. 2006;87(4):554-61.
23. Morris PE, Goad A, Thompson C, Taylor K, Harry B, Passmore L, et al. Early intensive care unit mobility therapy in the treatment of acute respiratory failure. *Critical care medicine*. 2008;36(8):2238-43.