

Medication Adherence: Fact or Fictions?

Mohiuddin AK

Alumni, Faculty of Pharmacy, Dhaka University, Bangladesh

1. Introduction

Proper use of medicine or taking medicine in correct order is essential to cure any disease. According to the WHO, lack of adherence to treatment regimens leads to major problems among patients, mostly with chronic illnesses. "Right administration" depends on at least 5 right factors—right patient, right drug, right time, right dose and right route [1]. "Medicines won't work if you don't take it right"—This simple fact is not understood by most people in the world, as a result still more than half of the patients with chronic diseases in the developed world do not take their medicine correctly—says WHO [2].

Patients with chronic diseases may find it particularly difficult to adhere because they frequently need to take their medications for an extended period of time, sometimes for the remainder of their lives. There are several reasons why patients may find it challenging to adhere to treatment regimens, and CDC estimates that medication non-compliance leads to 30 to 50% of chronic disease treatment failures. Poor adherence may cause treatment outcomes to not be achieved, symptoms to worsen, and one's health to deteriorate [3].

In the UK, up to 50% of medicines are not taken as intended and 60% of NHS patients failed to receive the right treatment within 18 weeks [4-6]. According to a New Zealand-based Journal medication non-adherence alone accounts for at least 10% of hospitalizations, \$300 billion in annual medical costs, and more than 1,25,000 deaths in the US alone [7]. A recent Canadian study found that 30% of patients stop taking their medication before it is instructed, and one in four do not fill their prescription or take less than prescribed [8]. Medication non-adherence contributes more than half of the \$500 billion total avoidable costs attributed to suboptimal medicine use globally each year [9].

A strange similarity can be found in under-developed, developing

countries and the so-called developed world in the West or the Middle-East when it comes to not taking medicine properly. More than half of the antibiotics worldwide are sold without a prescription and CDC stated, 30-50% of antibiotics prescribed in hospitals are inappropriate or unnecessary [10, 11]. A recent study published by The Lancet, funded by the Bill & Melinda Gates Foundation, Wellcome Trust, states that nearly 5 million deaths worldwide in 2019 were related to bacterial resistance, which is expected to double by 2050 [12].

Globally, NSAIDs are responsible for at least 650,000 hospitalizations and 165,000 deaths annually [13]. Overuse of this class of drugs can cause kidney injury, and their side effects can be 3 to 4 times higher in kidney compromised patients [14]. Many studies have reported widespread misuse of these drugs in Dengue, Chikungunya and Covid-19 patients. Especially in Dengue or Covid-19 patients, it is more important to maintain the hydration level of the body than to bring down the fever with the pain killers. In children, the use of excess Paracetamol syrup or suppositories may cause stomach irritation, which hampers digestion and led to vomiting and ended up with hospitalization. Most hospitalizations or ICU admissions among those patients could be prevented, with few exceptions, simply by preventing dehydration at home with saline and fruit juice or simply by drinking more water. More or less 40% of Covid-19 patients report sleep disturbances—use of Benzodiazepines in Covid-19 patients increases the incidence of delirium, depresses the system in patients with compromised respiratory functions, and contraindicated with some anti-viral medications [15, 16]. Around 300 metric tons of morphine-type painkillers are used worldwide each year, less than 1% of which distributed to low-and-middle income countries, says the American Journal of Public Health [17]. So their misuse and related side effects are also retained by the developed world.

***Correspondence to:** Abdul Kader Mohiuddin, Alumni, Faculty of Pharmacy, Dhaka University, Bangladesh, Tel: +01935183385; E-mail: trymohi@yahoo.co.in

Received date: Nov 19, 2022; **Accepted date:** Nov 25, 2022; **Published date:** Dec 02, 2022

Citation: Mohiuddin AK (2022). Treadmill Testing- "Episodic Ischemia" in a Middle-Aged Woman Aged 46 years. *Insig of Clin and Med Case Rep* 2022; v1(1): 1-3

Copyright: © 2022 Mohiuddin AK. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

According to a WHO report, only half of patients in developed countries adhere to treatment guidelines for chronic diseases, which is much less in developing countries [18]. Several studies among diabetic patients in South Asian countries have shown that nearly half of patients do not adhere to their prescribed medication and are at risk of acute and long-term complications, resulting in increased hospitalization rates and medical costs [19, 20]. Three-quarters of elderly patients worldwide are unable to adhere to appropriate long-term treatment regimens due to multiple physical complications and additional medication burden [21]. Elderly patients taking at least 5 medications are at increased risk of mild cognitive impairment, dementia, falls, frailty, disability, and mortality, while ADEs are estimated to be 5% to 28% of acute geriatric medical admissions [22, 23].

A recent study by the American Heart Association revealed that patients with high blood pressure do not follow treatment guidelines because of—(1) suboptimal dosing or prescribing the wrong medication (2) lack of insurance or lack of health care access and (3) patient failure to comply prescribed medication or other lifestyle guidelines [24].

“Medical costs are barriers to adherence to proper clinical guidelines for long-term diseases in poor countries”—although discussed in many forums but forgetfulness, confusion about the duration required for medication use and mistrust about the overall efficacy of medication are among the reasons for non-adherence to diabetes management protocols in Middle Eastern countries [25].

Epilepsy is still seen in most countries of the world as an evil spirit—although two-thirds of patients can become seizure-free with adequate treatment, poor adherence to proper guidelines is a major problem for effective recovery [26].

2. Keywords: Patient Compliance; Healthcare Denials; Medication Adherence; Elderly Patient Care; Treatment Failure

3. Several Identified Reasons for Non-Adherence to Treatment Guidelines for Chronic Diseases

3.1. Patient's Socio-Economic Status

Low health literacy, lack of family or social support network, unstable living or homelessness, financial insecurity

3.2. Treatment-Related

Complexity and duration of treatment procedures, frequent changes in medication regimen, lack of immediate results, real or perceived unpleasant side effects, interference with lifestyle

3.3. Health System-Related

High treatment costs, limited health system for patient education and follow-up, doctor-patient relationship, patient trust in health care, long waits, lack of patient information materials

3.4. Patient-Related

Visual-hearing and cognitive impairment, mobility and dexterity,

psychological and behavioral factors, perceived risk of disease susceptibility, superstitions and stigmatization by disease, etc [27].

Finally, it can be said that patients' knowledge and perception of the disease is the main driving force in determining their adherence to the treatment regimen. Health care providers should explore providing more effective health-education to identify patients' attitudes toward disease, trust in medications, psychological stressors, and increase medication adherence.

4. Acknowledgement

I'm thankful to Khulud Alosaimi, Department of Pharmacology and Toxicology, Faculty of Medicine, Umm Al-Qura University, Makkah for his valuable time to audit my paper and for his thoughtful suggestions. I'm also grateful to seminar library of Faculty of Pharmacy, University of Dhaka and BANSDOC Library, Bangladesh for providing me books, journal and newsletters.

5. Conflict of Interest

The author declares that he has no competing interests.

References

1. Grissinger M. The Five Rights: A Destination Without a Map. *PT*. 2010; 35(10): 542.
2. Brown MT, Bussell JK. Medication adherence: WHO cares? *Mayo Clin Proc*. 2011; 86(4): 304-14.
3. Center for Drug Evaluation and Research. (n.d.). Why you need to take your medications as prescribed or instructed. U.S. Food and Drug Administration. 2022.
4. Barnett NL. Medication adherence: where are we now? A UK perspective *European Journal of Hospital Pharmacy: Science and Practice*. 2014; 21: 181-184.
5. Denis C, Duncan P. Record 6.8m People Waiting for Hospital Treatment in England. *The Guardian*, 2022.
6. Luke A. 60% of Patients Waiting 18 Wks for Treatment at Worst-performing Trust. *Mail Online*, 2022.
7. Cutler RL, Torres-Robles A, Wiecek E, Drake B, Van der Linden N, Benrimoj SI, et al. Pharmacist-led medication non-adherence intervention: reducing the economic burden placed on the Australian health care system. *Patient Prefer Adherence*. 2019; 13: 853-862.
8. Bonsu KO, Young S, Lee T, Nguyen H, Chitsike RS. Adherence to Antithrombotic Therapy for Patients Attending a Multidisciplinary Thrombosis Service in Canada - A Cross-Sectional Survey. *Patient Prefer Adherence*. 2022; 16: 1771-1780.
9. Furniss D, Barber N, Lyons I, Eliasson L, Blandford A. Unintentional non-adherence: can a spoon full of resilience help the medicine go down? *BMJ Qual Saf*. 2014; 23(2): 95-8.
10. Bahta M, Tesfamariam S, Weldemariam DG, Yemane H, Tesfamariam EH, Alem T, et al. Dispensing of antibiotics without prescription and associated factors in drug retail outlets of Eritrea: A simulated client method. *PLoS One*. 2020; 15(1): e0228013.
11. Improve Antibiotic Use. Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 2022.
12. Antimicrobial Resistance Collaborators. Global burden of bacterial

- antimicrobial resistance in 2019: a systematic analysis. *Lancet*. 2022; 399(10325): 629-655.
13. Kasciūškevičiūtė S, Gumbrevičius G, Vendzelytė A, Ščiupokas A, Petrikonis K, Kaduševičius E, et al. Impact of the World Health Organization Pain Treatment Guidelines and the European Medicines Agency Safety Recommendations on Nonsteroidal Anti-Inflammatory Drug Use in Lithuania: An Observational Study. *Medicina (Kaunas)*. 2018; 54(2): 30.
 14. Lucas GNC, Leitão ACC, Alencar RL, Xavier RMF, Daher EF, Silva Junior GBD, et al. Pathophysiological aspects of nephropathy caused by non-steroidal anti-inflammatory drugs. *J Bras Nefrol*. 2019; 41(1): 124-130.
 15. Jahrami H, BaHammam AS, Bragazzi NL, Saif Z, Faris M, Vitiello MV, et al. Sleep problems during the COVID-19 pandemic by population: a systematic review and meta-analysis. *J Clin Sleep Med*. 2021; 17(2): 299-313.
 16. Ostuzzi G, Papola D, Gastaldon C, Schoretsanitis G, Bertolini F, Amaddeo F, et al. Safety of psychotropic medications in people with COVID-19: evidence review and practical recommendations. *BMC Med*. 2020; 18(1): 215.
 17. Bhadelia A, De Lima L, Arreola-Ornelas H, Kwete XJ, Rodriguez NM, Knaul FM, et al. Solving the Global Crisis in Access to Pain Relief: Lessons From Country Actions. *Am J Public Health*. 2019; 109(1): 58-60.
 18. Chauke GD, Nakwafila O, Chibi B, Sartorius B, Mashamba-Thompson T. Factors influencing poor medication adherence amongst patients with chronic disease in low-and-middle-income countries: A systematic scoping review. *Heliyon*. 2022; 8(6): e09716.
 19. Chong E, Wang H, King-Shier KM, Quan H, Rabi DM, Khan NA, et al. Prescribing patterns and adherence to medication among South-Asian, Chinese and white people with Type 2 diabetes mellitus: a population-based cohort study. *Diabet Med*. 2014.
 20. Sohal T, Sohal P, King-Shier KM, Khan NA. Barriers and Facilitators for Type-2 Diabetes Management in South Asians: A Systematic Review. *PLoS One*. 2015; 10(9): e0136202.
 21. Félix IB, Henriques A. Medication adherence and related determinants in older people with multimorbidity: a cross-sectional study. *Nurs Forum*. 2021; 56: 834-843.
 22. Chippa V, Roy K. Geriatric Cognitive Decline and Polypharmacy. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
 23. Varghese D, Ishida C, Haseer Koya H. Polypharmacy. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022.
 24. Choudhry NK, Kronish IM, Vongpatanasin W, Ferdinand KC, Pavlik VN, Egan BM, et al. American Heart Association Council on Hypertension; Council on Cardiovascular and Stroke Nursing; and Council on Clinical Cardiology. Medication Adherence and Blood Pressure Control: A Scientific Statement from the American Heart Association. *Hypertension*. 2022; 79(1): e1-e14.
 25. Alsairafi ZK, Taylor KM, Smith FJ, Alattar AT. Patients' management of type 2 diabetes in Middle Eastern countries: review of studies. *Patient Prefer Adherence*. 2016; 10: 1051-62.
 26. Lossius MI, Alfstad KÅ, Aaberg KM, Nakken KO. Seponering av Antiepileptika Ved anfallsfrihet – når og hvordan? *Tidsskrift for Den Norske Legeforening*. 2017; 137(6): 451-454.
 27. Jin J, Sklar GE, Min Sen Oh V, Chuen Li S. Factors affecting therapeutic compliance: A review from the patient's perspective. *Ther Clin Risk Manag*. 2008; 4(1): 269-86.