

RESPIRATORY DRUGS DISPENSED WITHOUT PRESCRIPTION IN DHAKA CITY

Nusrat Sultana^{1*}, Rokhsana Parvin¹, Rahnuma Ahmad², Nazla Shamsuddoha¹, Rifat Naoreen Islam³, Mahmuda Jahan⁴.

ABSTRACT

Background: Self-medication is a trend that may cause more damage than good. In low-middle income countries like Bangladesh it is quite easy to obtain medicine without prescription which may lead to several adverse effects or over medication. This scenario of our country needs to be fully assessed. **Aim:** To survey the age group of patients, number of drugs sold and cost of the drug for patients in different respiratory categories of drug used in Uttara in Dhaka City. **Materials and Method:** Cross-sectional survey records of 30 questionnaires from 3 big medicine shops for 10 selling time random record for patients from each six (6) categories of age group, dispensed medicine between January 2017 to June 2017 was reviewed. **Results:** The study observed the mean (\pm SD) of quantity of respiratory drug (inhaler) purchased without prescription was highest among the age groups of 10-18 years and 42-55 years (0.77 ± 0.43 and 0.67 ± 0.55 respectively) which was statistically significant ($p<0.01$). The mean \pm SD of the money spent to make inhaler purchase was significantly high in all age groups, in particular among individuals in the age groups of 42-55 years (166.67 ± 136.69) which was statistically significant $p<0.01$. The quantity of antihistamine purchased and the amount spent for its purchase in different age groups revealed the highest quantity was purchased by the age group of 25-32 years and the highest amount spent to make antihistamine purchase was by those in age group of 42-55 years (3.04 ± 0.74 and 29.85 ± 20.89 respectively) which were statistically significant ($p<0.01$).

Keywords: Prescription, Drug–patient, Drug use–Respiratory drug

Cite this article: Sultana N, Parvin R, Ahmad R, Shamsuddoha N, Naoreen R, Jahan M. Respiratory drugs dispensed without prescription in Dhaka city. J Med Coll Women Hosp. 2024; 20(2): 30-36.

INTRODUCTION

The practice of self-medication is prevalent in most parts of Bangladesh regardless of socio-economic status and level of education. While this is indisputable, the incidence of self-medication, without consulting any qualified health professional, has been noted to be higher in the low or middle-income countries.

In a developing country like Bangladesh, the practice of self-medication may provide an alternative for people since

clinical services costs are high. It is also easy to self-medicate since many drugs, including prescription only drugs, are dispensed over the counter (OTC) without prescription. In Bangladesh, people with ARI (Acute Respiratory Infection) frequently seek care at local pharmacies. A national survey estimated that care was sought at pharmacies by relatives of 22% of children with ARI when the children suffered bouts of the illness in rural vietnam³.

1*. Department of Pharmacology & Therapeutics, Medical College for Women & Hospital, Dhaka, Bangladesh. Email: nusrat939@yahoo.com [Address of correspondence]

1. Department of Pharmacology & Therapeutics, Medical College for Women & Hospital, Dhaka, Bangladesh.
2. Department of Physiology, Medical College for Women & Hospital, Dhaka, Bangladesh
3. Department of Forensic Medicine and Toxicology, Medical College for Women & Hospital, Dhaka, Bangladesh.
4. Department of Pathology, Khulna City Medical College, Khulna, Bangladesh.

A study in Bangladesh observed that management for influenza-like illness with fever (sudden onset), sore throat, and cough was looked for at local pharmacies in 30% of cases⁴ while another research in Dhaka found this behavior in 48% of study participants⁵. In the country's rural area, people working at the pharmacies who may or may not be trained in the practice of pharmacy were asked for drug recommendation and these drug sellers dispense drugs as per the demand of patients for any sort of illness and a study found this behavior in 46% of patients while the research also noted that 77% patients with cold and fever had the preference to visit the pharmacy first instead of the medical clinic for symptom relief⁶.

The outbreak of coronavirus disease 2019 is putting a massive strain on vulnerable healthcare system in low and middle-income countries like Bangladesh. Inequitable access to healthcare is further widened by the socio-economic gap and sense of insecurity during this pandemic since the beginning of 2020⁷. Pharmacists are often the first health-care professional patients contact for the management of ARIs for themselves or their children in view of their access and issues of affordability, especially if patients cannot afford to see a physician and purchase their recommended medicines⁸. It has been reported that 50.4% of medical students and staff in a tertiary care center self-medicated. Of these patients, 50% purchased the drugs or substances directly from the pharmacy, and the compounds purchased at the highest frequency were paracetamol, vitamin C, zinc, multivitamins, vitamin D, azithromycin, cough syrup, and ibuprofen⁹.

Globally the practice of self-medication is on a sharp rise. In developing countries reports have surfaced indicating that an alarming 80% of its population purchase medication without obtaining any prescription from qualified physicians.

Around 15% of cases suffering severe infection require oxygen supplement for respiratory symptoms and 5% experience critical infections, requiring ventilation. Patients at a higher risk of severe or critical infections include older people, comorbid with underlying health conditions. The irrational and self-driven use of drugs without undergoing proper health and disease assessment can lead to various side effects¹⁰. However, there may be some negative effects of medication restriction on the health and welfare of individual patients, as policies designed to limit medication use may have serious consequences for patients' health, resulting in increased emergency department visits, nursing home admissions, use of emergency mental health services.

This study was carried out to observe the self medication practices for respiratory medications in different age group since self-medication has associated risk factors like developing adverse drug reactions (ADRs), drug-drug interactions (DDIs) and therefore healthcare professionals must recognize and approach this practice to ensure the correct use of drugs.

MATERIALS AND METHOD

The survey is based on cross sectional design where the data was collected purposively. The survey questionnaire was provided to collect the data from pharmacists working at the targeted 3 big medicine shops at Uttara, Dhaka. The time length of the survey was January 2017 to June 2017. We surveyed 3 shops for 10 selling time random record for patients from each six (6) categories of age group to know the asking drug categories as well as the number of drugs purchased and the financial involvement for dispensing drug.

Our instrument was pilot tested to judge completeness, readability, and accuracy, but, in the end, the validity of these results depends on respondents' comprehension, recall, and honesty. Recall bias would likely result in underreporting the number of

Dispense of respiratory drugs without prescription

self-prescribed medications. Similarly, despite anonymity, residents might be reluctant to report use or prescription of certain classes of medications. The data was analyzed by SPSS 21.0 version and the data was presented as mean \pm SD with level of significance taken at p -value <0.05 .

RESULTS

The overall results of the study have been presented in tabular and narrative form.

Table 1 displays the quantity of inhaler bought by patients in different age groups. The highest quantity of inhaler were obtained by the age groups of 10-18 years and 42-55 years without prescription with mean \pm SD of 0.77 (0.43) and 0.67 (0.55) respectively having p -value of <0.01 .

Table 1 : Quantity of inhaler bought by patients in each age-group.

Age category of patient (in yrs)	Mean(SD)	p -value
10-18	0.77(0.43)	
19-24	0.27(0.45)	
25-32	0.40(0.81)	$<0.01^*$
33-42	0.40(0.68)	
42-55	0.67(0.55)	
>55	0.0(0.0)	

**Highly Statistically Significant ($p<0.01$); yrs: years; unpaired students t-test done.

The average amount spent to purchase inhaler is shown according to the age group of patients in Table 2. Here most amount spent for purchasing inhaler is noted in 3 age groups between 25 to 55 years, which is statistically significant ($p<0.01$).

Table 2 : Amount spent to purchase inhaler in each patient age-group

Age Category of patient (in yrs)	Mean (SD)	p -value
10-18	191.67(107.55)	
19-24	66.67(112.44)	
25-32	100.0(203.42)	
33-42	100.0(168.67)	$<0.01^*$
42-55	166.67(136.69)	
>55	0.0(0.0)	
Total(n=180)	104.17(149.20)	

** Highly Statistically Significant ($p<0.01$); yrs: years; unpaired students t-test done.

The ANOVA analysis of antihistamine purchase without prescription are shown according to the age group of patients in Table 3. Here the antihistamine consumption was observed to be high in the age group between 25-32 years with p value <0.01 and most money spent for purchase of antihistamine was noted to be by patients in the age group of 42-55 years with p value of <0.01 .

Table 3 : Respiratory drugs consumption with each age-group of patients

Variables	Age in yrs	N	Mean	Std. Deviation	p-value
Antihistamine	10-18	30	1.68	1.06	
	19-24	30	1.50	0.71	
	25-32	30	3.04	0.74	
	33-42	30	2.08	1.13	<0.01*
	42-55	30	3.00	2.12	
	>55	30	2.66	3.59	
	Total	180	2.32	1.94	
Antihistamine price	10-18	30	29.88	17.23	
	19-24	30	19.21	9.38	
	25-32	30	36.06	9.77	
	33-42	30	20.55	9.15	<0.01*
	42-55	30	29.85	20.89	
	>55	30	25.00	29.36	
	Total	180	26.76	18.33	

Highly Statistically Significant ($p < 0.01$); **yrs: years; **Std**: Standard; ANOVA analysis done.

DISCUSSION

This cross-sectional study found the easy accessibility to prescription medications and application of limited knowledge about medicine raises the chances of self-treatment. Even though self medication may result in loss of objectivity of treatment, it has been observed that even physicians themselves often practice self treatment¹¹. This study showed the quantity of medication purchased without prescription (either on their own accord or upon suggestions made by the drug sellers) along with the amount spent for making these purchases by patients in different age groups from the targeted medicine shops.

The rising trends of self-medication may be associated with the desire for self care, sympathy for members of family during their illness, inaccessibility of health care services, ignorance, misbelief, aggressive advertising of certain drugs, poverty, and selling of drugs in stores other than the

pharmacies¹². A cross-sectional multicenter study observed that the main drugs used for self-medication in COVID-19 were acetaminophen, ibuprofen, azithromycin, penicillin, antiretrovirals, and hydroxychloroquine for a variety of symptoms including fatigue, fever, sneezing, nasal congestion, muscle pain, headache, cough, breathing difficulty, and sore throat¹³.

Present study also showed the statistically significant use of antihistamine and its self-buying scenario in different age group of patients which linked with the self-medication of respiratory drug. The trends of self medication was higher for the working age group of 25-55 years similar to the study done by Chautrakarn et al who observed the frequency of self purchase of anti-allergic drugs to be 28.4% which was the 3rd highest frequently bought drugs after NSAID and antibiotics which were at 34.8% and 30.2% respectively. The reason for self medication in their study were

found to be the proximity of the pharmacy to home or office¹⁴. The prevalence of self-medication for COVID-19 prevention and management was found to be 33.9% in hospitalized adults with COVID-19 and <4–88% in the general population⁷. Self-medication in this study is likely due to issues with distances and access to health-care services, including medicines in the public health-care system with limited numbers of patients on medical aid¹⁵.

It may be that people with prescription coverage have greater personal investment in the healthcare system, and that subsidized drug costs make patients more willing to pay for their share for medications even if their total out-of-pocket expenditures are equal to patients receiving no such help. The effect of medication restriction on the health and welfare of individual patients, and on total health care system, remains incompletely defined. However, policies designed to limit medication use may have serious consequences for patients' health, resulting in increased emergency department visits, nursing home admissions, use of emergency mental health services, and more.

NakaJima et al. found that self medicating with antihistamine resulted in 59.1% subject suffering from somnolence. Other complications included dull head and concentration loss¹⁶. Self-medication is a public health problem because it has potential risks such as ADRs, DDIs, antibiotic resistance, drug toxicity, incorrect choice of medication, and masking of symptoms, of which some may have lethal complications as discussed above¹⁴⁻¹⁸.

CONCLUSION

Self-medication is common in most countries however, this practice is confined mostly to the low- and middle-income countries. Studies of self-medication in different countries have shown that its determinants are a higher educational level, availability of leftover

drugs from previous prescriptions, the presence of chronic diseases, less serious ailments, long waiting times, and the need to avoid the cost of a visit to the doctor. The COVID-19 pandemic has promoted irresponsible self-medication due to individual fear of contracting the virus, limited access to healthcare services, and the massive release of misleading information¹⁹. There are certain benefits of self-medication when used appropriately such as reduced cost and self-reliance. However, there are several potential dangers associated with inappropriate self-medication like taking incorrect dosage, inappropriate manner of administration, self diagnosis, improper choice of therapy, dangerous drug to drug interaction²⁰.

This study explored the self medication trends in different age groups of individuals in a part of the capital city and found the working population were making purchases of medication without prescription more. Considering our research evidence, we want to explore the pattern of respiratory medication use among all age groups in Dhaka, Bangladesh, as well as the important factors that are mentioned in relation with medication consumption. The self-medication pattern in population level will give us a picture regarding respiratory drug use status and risk of the people of Bangladesh and the factors responsible for it particularly self-perception of health along with symptom-based medication available in medicine shops.

LIMITATIONS

As this study was self-funded a larger study population could not be taken. Due to time and financial constraints different areas' medicine shops could not be included. Also the different factors associated with self-medication behavior could not be assessed due to shortage of time and funds.

CONFLICT OF INTEREST

There is no conflict of interest.

REFERENCES

1. Oyediran O, Ayandrian EO, Olatubi MI. Awareness of risk associated with self-medication among patients attending out-patient department of a tertiary hospital in south western Nigeria. *Int J Africa Nursing Sci.* 2019; 10:110-5.
2. Hussain S, Malik F, Hameed A, Riaz H. Exploring health seeking behavior, medicine use and selfmedication in rural and urban Pakistan. *Southern Med Rev.* 2008; 3:32-4.
3. Larsson M, Falkenberg T, Dardashti A. Overprescribing of antibiotics to children in rural Vietnam. *Scand J Infect Dis* 2005;376–744244816012004.
4. Azziz-Baumgartner E, Alamgir AS, Rahman M, Homaira N, Sohel BM, Sharker MA, et al. Incidence of influenza-like illness and severe acute respiratory infection during three influenza seasons in Bangladesh, 2008-2010. *Bull World Health Organ.* 2012;90(1):12-9. doi: 10.2471/BLT.11.090209.
5. ICDDR B. The economic burden of influenza-like illness in Mirpur, Dhaka, during the 2009 pandemic: a household cost of illness study. *Health Sci Bull.* 2010;8(1):2.
6. Mahmood SS, Iqbal M, Hanifi S. Health-seeking behaviour. *Health for the Rural Masses.* 2009:67–93.
7. Kretchy IA, Danso AM, Kretchy JP. Medication management and adherence during the COVID-19 pandemic: Perspectives and experiences from low and middle-income countries. *Research Social Administrative Pharmacy.* Available at: <https://www.sciencedirect.com/science/article/pii/S1551741120303326> (IN PRESS). Accessed on 17 October 2024
8. Hoxha I, Malaj A, Kraja B, Bino S, Oluka M, Marković-Peković V, et al. Are pharmacists' good knowledge and awareness on antibiotics taken for granted? The situation in albania and future implications across countries *J Glob Antimicrob Resist.* 2018; 13:240–5.
9. Acharya A, Vaidya Shrestha M, Karki D. Self-medication among medical students and staffs of a Tertiary Care Centre during COVID-19 pandemic: a descriptive cross-sectional study. *J Nepal Med Assoc* 2022; 60: 59–62.
10. Ylinen S, Hämeen-Anttila K, Sepponen K, Lindblad AK, Ahonen R. The use of prescription medicines and self-medication among children—a population-based study in Finland. *Pharmacoepidemiol Drug Saf.* 2010; 19(10):1000-8. doi: 10.1002/pds.1963.
11. Montgomery AJ, Bradley C, Rochfort A, Panagopoulou E. A review of self-medication in physicians and medical students. *Occup Med (Lond).* 2011;61(7):490-7. doi: 10.1093/occmed/kqr098.
12. McCabe SE, Teter CJ, Boyd CJ. Medical use, illicit use, and diversion of abusable prescription drugs. *J Am Coll Health.* 2006; 54(5):269-78. doi: 10.3200/JACH.54.5.269-278.
13. Quispe-Cañari JF, Fidel-Rosales E, Manrique D, Mascaró-Zan J, Huamán-Castillón KM, Chamorro-Espinoza SE, et al. Self-medication practices during the COVID-19 pandemic among the adult population in Peru: A cross-sectional survey. *Saudi Pharm J.* 2021 Jan; 29(1):1-11. doi: 10.1016/j.jsps.2020.12.001.

14. Chautrakarn S, Khumros W, Phutrakool P. Self-Medication With Over-the-counter Medicines Among the Working Age Population in Metropolitan Areas of Thailand. *Front Pharmacol.* 2021; 12:726643. doi: 10.3389/fphar.2021.726643.
15. Chowdhury N, Matin F, Chowdhury SF. Medication taking behavior of students attending a private university in Bangladesh. *Int J Adolesc Med Health.* 2009; 21(3): 361-70. doi: 10.1515/ijamh.2009.21.3.361.
16. Nakajima R, Morita N, Watanabe F, Kosuge Y. Association Between Inappropriate Use of Over-The-Counter Drugs for Allergic Rhinitis and Side Effects on the Central Nervous system-a-cross-Sectional Survey.
17. Saradamma RD, Higginbotham N, Nichter M. Social factors influencing the acquisition of antibiotics without prescription in Kerala State, south India. *Soc Sci Med.* 2000; 50(6):891-903. doi: 10.1016/S0277-9536(99)00380-9.
18. Wegbom AI, Edet CK, Raimi O, Fagbamigbe AF, Kiri VA. Self-Medication Practices and Associated Factors in the Prevention and/or Treatment of COVID-19 Virus: A Population-Based Survey in Nigeria. *Front Public Health.* 2021; 9:606801. doi: 10.3389/fpubh.2021.606801.
19. Quincho-Lopez A, Benites-Ibarra CA, Hilario-Gomez MM, Quijano-Escate R, Taype-Rondan A. Self-medication practices to prevent or manage COVID-19: A systematic review. *PLoS One.* 2021; 16(11):e0259317. doi: 10.1371/journal.pone.0259317.
20. Shankar PR, Partha P, Shenoy N. Self-medication and non-doctor prescription practices in Pokhara valley, Western Nepal: a questionnaire-based study. *BMC Fam Pract.* 2002; 3:17. doi: 10.1186/1471-2296-3-17.