

Prescribing trends of psychotropic drug in psychiatry out-patient department in a teaching hospital of Bangladesh

Baqui QBOF¹, Any H², Mazumder M³, Johora F⁴, Begum HA⁵, Ali M⁶

¹ Professor & Head of Department of Pharmacology, Army Medical College, Bogura, Bangladesh

² Department of Pharmacology, Army Medical College, Jessore, Bangladesh

³ Department of Anaesthesiology, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh

⁴ Department of Pharmacology, Army Medical College Bogura, Bogura, Bangladesh

⁵ Shahprotap Institute of Medical Science (SIMS), Narsingdi, Bangladesh

⁶ Department of Anaesthesiology, Asgar Ali Hospital Limited, Dhaka, Bangladesh

Email address: fatemajohora.0801@gmail.com

Abstract - Psychiatric illness has received considerable attention in recent years. Like other developing countries, a certain percentage of population in Bangladesh suffer from different psychiatric illness. psychotropic drugs are used as most common treatment modality for these patients. A cross-sectional descriptive study was carried out among individuals attending the psychiatry out-patient department in a tertiary care hospital in Bangladesh for 4 months period to observe the patterns of psychotropic drug utilization in psychiatry out-patient department. A total 300 prescriptions were included in this study and simultaneously those patients were interviewed by questionnaire to identify the educational and socio-economic status of the patient. Female, less educated, illiterate, house wife, and lower income group of patients generally attend psychiatry out-patient department. Schizophrenia other psychotic disorder (40%) found to be most common psychiatric illness encountered in OPD. The average number of psychotropic drug per prescription was 2.44. Antipsychotic drugs (36%) were the most frequently prescribed psychotropic agent. All medicines were prescribed by brand name. Regarding route of administration, 8.33% of medicines were prescribed in injectable formulation. Overall prescribing pattern was not satisfactory. Customized educational intervention package for prescriber might be helpful for rational prescribing in psychiatric illness.

BACKGROUND

Mental illnesses have been considered as major public health problem in last few decades. According to World Health Organization (WHO), it constitutes 13% of global burden of disease [1]. People with mental disorders have higher mortality rates as some physical illness like cancer, diabetes, HIV infection are associated with mental disorders [2-4]. Not only physical illness, mental disability also causes diverse social and economic impact ranging from social isolation to poverty [5-7]. Genetics, socioeconomic background, psychological trauma, marital problem all act as influencing factors for mental illness [8-9]. Low and middle income countries have higher burden of mental disorder than developed countries [10, 11]. There are two main popular treatments of psychiatric illness: pharmacotherapy and psychotherapy. Psychotropic drugs are playing central role as pharmacotherapy [12].

In Bangladesh, reported prevalence of mental illness varied from 6.5%- 31% in adults and among 13.5%-22.9% in children [13] and mental illness still considered as a social stigma. Only 0.44% of total health budgets spends on mental illness although presence of an established mental health policy [14]. The majority of the psychiatric population needs long-term or even life-long therapy with psychotropics. However, these drugs often affect emotion and cognition where in significant clinical, legal, and psychological issues are being observed [15]. Patterns of prescribing and the choice of psychotropic medications vary in different settings [16]. The study of prescribing patterns evaluate therapeutic trends, for ensuring rational prescribing, hence, the objectives of the current study were to observe the prescription pattern of psychotropic medications in a tertiary health care center.

MATERIAL & METHODS

Place and duration of the study

It was a hospital-based cross-sectional, structured questionnaire survey, conducted in Sir Salimullah Medical College and Hospital, a tertiary care Hospital, Dhaka run by government. The study was carried out over a 90 days period of February 1st 2010 to April 30th 2010. Ethical clearance was obtained from the Ethical Review Committee of the studied institute, and informed consent was taken from the participants of the structured questionnaire survey.

Procedure

The questionnaire survey was conducted among psychiatry out-patient department in Sir Salimullah Medical College. The patients and their prescriptions were used as sources of data. A total 300 patients were included in this study. The collected data include socio-demographic details such as age, gender, occupation, employment and monthly income. The average number of drug per prescription, diagnosis, prescribed psychotropic drugs, percentage of drug prescribed by trade name, percentage of an injectable being prescribed, the number of combination preparation were noted. After obtaining verbal consent, patients were interviewed by using a questionnaire. The recorded information was name, registration number, age, sex, marital status, educational and socioeconomic condition.

Statistical analysis

Data was compiled, presented and appropriate statistical test was done in this study for drawing an appropriate conclusion. Statistical analysis was done with Microsoft Office Excel 2007. The data was expressed as percentage, mean and total number.

RESULTS

Out of 300 patients 142 (47.33%) were male and 158 (52.66%) were female (Table 1)

Table I: Distribution of patient by gender (n=300)

Gender	Frequency	Percentage
Male	142	47.33
Female	158	52.66

Ninety eight (32.67%) of the 300 respondents were aged between the ages of 18 to 27 years.

Table II: Age distribution of patients (n=300)

Age group (Years)	Numbers of patients
<18	17 (5.67%)
18- 27	98 (32.67%)
28-37	87 (29.00%)
38-47	64 (21.33%)
48 years and above	34 (11.33%)

Seven of the 300 patient (2.33%) resided in an urban area, while the rest were residing in villages. Most of the patients were illiterate (Table III) and 175 (58.33%) were married. Hundred eight (36%) were housewives, the rests were engaged in different occupations.

Table III: Distribution the educational status of the patients (n=300)

Educational status	Frequency	Percentage
Illeterate	204	68.00
Below SSC	50	16.66
SSC	6	2.00
HSC	33	11.00
Graduate	03	1.00
Postgraduate	04	1.30

Schizophrenia and other psychiatric disorder (40.0%) are most common among the patient attending the psychiatry OPD (Table IV)

Table IV: Distribution of psychiatric disorder (n=300)

Psychiatric disorder	Frequency	Percentage
Schizophrenia and other disorder	120	40.00
Bipolar mood disorder	117	39.00
Depressive disorder	29	9.66
Anxiety disorder	08	2.66
Somatoform disorder	05	1.66
Mental retardation	05	1.66
Obsessive compulsive disorder	06	2.0
Others	10	3.3

A total of 732 individual psychotropic drugs were prescribed in 300 prescriptions, an average number of psychotropic drugs in per prescription was 2.44. Most commonly prescribed psychotropic drugs was antipsychotic drugs 258 (36.00%) (Table V). Not a single drugs was prescribed by generic names, and out of 300 prescriptions additional drug like anticholinergic drugs 228 (76%) were prescribed.

Table V: Distribution of psychotropic drugs (n-732)

Drug class	Number of drug	Percentage
Antipsychotic	258	36.00
Anxiolytics	113	15.43
Antidepressant	73	09.97
Antimanic	120	16.39
Others	68	22.95

DISCUSSION:

The study was carried out in psychiatry outpatient department in a teaching hospital in capital city of Bangladesh. Sir Sallimullah Medical College & Mitford Hospital is a Government teaching and tertiary level of hospital in Bangladesh. Both rural and urban populations of different classes with different socio-economic status come to these outpatient departments for treatment purpose. They predominantly represent poor rural and urban population.

In this study, 52.66% of studied population was female, similar percentage of female patient attending psychiatry OPD was found in studies conducted in other countries [17, 18-20], but contrary to study conducted in India [21]. Majority of the patients attending the psychiatry OPD were below the age of 37 years, this finding corresponded with previous studies [20, 22] as schizophrenia is commonly prevalent among the adolescence [22], In the present study level of education was considered and it was found that majority of patients were illiterate but this finding did not correspond with a previous study conducted in Bangladesh [23] because that study was carried in a hospital of private setting. Most of the patient was housewives like study conducted in another developing country [24]. Most of the patients (97.8%) came from the rural areas like this may be due to the inconvenient communication of this tertiary care hospital with most of Dhaka city rather good communications with surrounding districts through naval route. It was observed that less educated, illiterate, house wife, unemployed and lower income group of patients generally attend psychiatry outpatient department. This finding is analogous to the outcome of study done in Sweden by Lessen et al [25] as the data showed that utilization of psychotropic drugs were more among individuals with low income.

Schizophrenia was the most common complaints among the patient attending OPD like studies conducted in Germany and India[17, 26] but depression was the most common diagnosis in other studies [21, 27, 28]. Average number of psychotropic drug per prescription was 2.44, this kind of practice of polypharmacy was observed other studies [29-31] but lower than another study conducted in Bangladesh [31]. Antipsychotic drugs were highest prescribed like other studies [26, 31]. Only 8.33% of the drugs were prescribed by parenteral formulation which was lower than other studies [28, 31, 32]. Minimum use of injections is preferred and this reduces the risk of infection through parenteral route and cost incurred in therapy [33]. In this study (100%) of the drug were prescribed by trade name and the percentages of drug prescribed by generic name is 0%, which is

very much less than that reported in studies conducted in other countries [34,35] but similar to one study conducted in Bangladesh [31]. This kind of practice of prescribing by trade name may be due to the current healthcare delivery system of Bangladesh [36] as well as promotional activities conducted by pharmaceutical industries [37-39].

CONCLUSION:

In present study, it was observed that less educated, illiterate, house wife, unemployed and lower income group of patients generally attend psychiatry out-patient department. Schizophrenia and other psychiatry disorder are most common problem in this group. Overall prescribing pattern was not satisfactory, specially practice of polypharmacy and prescribing by trade name. Appropriate educational intervention directed to prescriber might be fruitful for rational prescribing.

AUTHORS' CONTRIBUTIONS

Baqui designed the questionnaire, analyzed the results and wrote the manuscript. Any and Johora helped in designing the questionnaire, all authors conducted the data analysis, interpreted the data and helped in writing the manuscript. Hosne Ara Begum have done the statistical analysis of the article. Mazumder and Ali participated in the design of the study and helped in the statistical analysis.

ACKNOWLEDGEMENT (S)

Authors render heartfelt gratefulness to all the out-patient of psychiatry department during the period of data collection, who helped directly or indirectly in this research

REFERENCE

- [1] World Health Organization. Global burden of mental disorders and the need for a comprehensive, coordinated response from health and social sectors at the country level. Available at: http://apps.who.int/gb/ebwha/pdf_files/eb130/b130_9-en.pdf [Accessed on 16/08/2018]
- [2] Walker ER, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: A systematic review and meta-analysis. *JAMA Psychiatry* 2015; 72: 334–41.
- [3] Latoo J, Mistry M, Dunne FJ. Physical morbidity and mortality in people with mental illness. *British J Medical Practitioners*, 2013; 6: a621
- [4] World Health Organization. Premature death among people with severe mental disorders. Available at: http://www.who.int/mental_health/management/info_sheet.pdf [Accessed on 16/08/2018]
- [5] Doran CM, Kinchin I, 2017. A review of the economic impact of mental illness. *Australian Health Review*,
- [6] Trautmann S, Rehm J, Wittchen HU. The economic costs of mental disorders: do our societies react appropriately to the burden of mental disorders? *EMBO Rep* 2016; 17:1245–9.
- [7] World Health Organization. Impact of economic crisis on mental health. Available at: http://www.euro.who.int/__data/assets/pdf_file/0008/134999/e94837.pdf [Accessed on 16/08/2018]
- [8] Lorant V, Deliege D, Eaton W, Robert A, Philippot P, Ansseau M. Socioeconomic Inequalities in depression: a meta-analysis. *Am J Epidemiol* 2003; 157: 98-112
- [9] Umberson D. Gender, marital status and social control of health behavior. *Soc Sei Med* 1992; 34: 907-17
- [10] Bass JK, Bornemann TH, Burkey M, Chehil S, Chen L, Copeland JRM, Eaton WW, Ganju V, Hayward E, Hock RS, Kidwai R, Kolappa K, Lee PT, Minas H, Or F, Raviola GJ, Saraceno B, Patel V: A United Nations General Assembly Special Session for Mental, Neurological, and Substance Use Disorders: The Time Has Come. *PLoS Med* 2012; 9: e1001159.
- [11] Hock RS, Or F, Kolappa K, Burkey MD, Surkan PJ, Eaton WW. A new resolution for global mental health. *Lancet* 2012; 379: 1367–8.
- [12] Hossain MD, Ahmed HU, Chowdhury WA, Neissen LW, Alam DS, 2014. Mental disorders in Bangladesh: a systematic review. *BMC Psychiatry* 2014; 14: 216
- [13] Frank RG, Conti RM, Goldman HH. Mental Health Policy and Psychotropic Drugs. *The Milbank Quarterly* 2005; 83: 271–98
- [14] World Health Organization Mental Health Atlas 2014 - Department of Mental Health and Substance Abuse. World Health Organization. Bangladesh Available at: http://www.who.int/mental_health/evidence/atlas/profiles-2014/en/ [Accessed on 16/08/2018]
- [15] Jayanthi CR, Divyashree M, Sushma M. Adverse drug reactions in psychiatry outpatients: Clinical spectrum, causality and avoidability. *J Chem Pharm Res* 2013; 5: 128-35.
- [16] u-Tao X, Yong-Zhen W, Chi-Ming L, Wai-Kwong T, Ungavri GS. Exploring the clinical and social determinants of prescribing anticholinergic medication for Chinese patients with schizophrenia. *Human Psychopharmacology: Clinical and Experimental* 2007; 22: 173-80.
- [17] Bernd R, Bröggemann, Hermann Elgeti, and Mare Ziegenbein. Patterns of drug prescription in a psychiatry outpatient care unit. *German j Psychiatry* 2008; 11: 1-6
- [18] Keohavong B, Syhakhng L, Sengaloundeth S, Nishimura A, Ito k. *Pharmacoepidemiology and drug safety* 2006; 15:344-247
- [19] Thakkar KB, Jain MM, Billa G, Joshi A, Khobragade AA. A drug utilization study of psychotropic drugs prescribed in the psychiatry outpatient department of a tertiary care hospital. *J Clin Dagn Res* 2013; 7: 2759-64.
- [20] Mant A, Lansbury G, Bridges-Webb C. Trends in psychotropic drug prescribing in Australia. *Med J Aust* 1987; 146: 208-10
- [21] Goyal V, Munjal S, Gupta R. Drug Utilization Pattern of Psychotropic Drugs Prescribed in the Psychiatric Department of a Tertiary Care Government Hospital, Rajasthan. *Journal of Dental and Medical Sciences* 2016; 15: 80-87
- [22] Maki P, Veijola J, Jones PB, Murray Gk, Koponen H, Tienari P, et al. Predictors of schizophrenia-a review. *Br Med Bull* 2005 ; 9: 1-15
- [23] Fahmida A Wahab MA, Rahman MM. Pattern of psychiatry morbidity among the patients admitted in a private psychiatric clinic. *Bangladesh Journal of Medical Science* 2009; 8:1-2.

- [24] Ahmed S, Salamat S, Khan RAM, Iqbal SP, Haider II, Khan AS, Zafar M. Clinical Practice and Epidemiology in Mental Health 2009; 5:9
- [25] Lesen E, Andersson K, Petzoid M, Carlsten A. Socioeconomic determinants of Psychotropic drug utilization among elderly: a national population based cross sectional study. BMC Publ Health 2010; 10: 118
- [26] Sarkar P, Chakraborty K, Misra A, Shukla R, Swain SP. Pattern of psychotropic prescription in a tertiary care center: A critical analysis. Ind J Pharmacology 2013; 45: 270–3.
- [27] Tabish A, Sharma S, Sajid A et al. Drug utilisation research in psychiatry outdoor in tertiary care hospital, Bastar region. IJPR 2015; 5 (4).
- [28] Dutta S, Kaul V, Beg MA et al. A psychotropic drug use study among depression patients attending private psychiatric practitioners of Dehradun, Uttarakhand. Int J Med Sci Public Health 2015; 4: 634-8
- [29] Lahon K, Shetty H, Parnel A, Sharma G. A retrospective drug utilization study of antidepressants in the psychiatric unit of a tertiary care hospital. J Clin Diagn Res 2011; 5: 1069-75.
- [30] Al Khaja KA, Al-Haddad MK, Sequeira RP, Al-Offi AR. Antipsychotic and anticholinergic drug prescribing pattern in psychiatry: extent of evidence-based practice in Bahrain. Pharmacol Pharm 2012; 3: 409-16
- [31] Alam MT, Maruf MM, Sarkar M, Ahmed HU, Akhter M.. Pattern of prescribing psychotropics in the outpatient department of a tertiary psychiatric hospital. Bang J Psychiatry 2015; 29:10-13
- [32] Rode SB, Ajagallay RK, Salankar HV, Sinha U. A study on drug prescribing pattern in psychiatry out-patient department from a tertiary care teaching hospital. Int J Basic Clin Pharmacol 2014; 3:517-22
- [33] Linden M.Y, Lecrubier, C Bellantuno, O, Benkert, S. Kiskey and G. Simon. Psychotropic drug prescription in primary care. J of European psychiatry. volume 11, supplement 4, 1966 page 179s
- [34] Shankar PR, Roy S. Patterns of Prescription and Drug use in a psychiatry out-patient department in a teaching hospital in Western Nepal. Internal J Pharmacol 2002; 1:2 Available at: <http://ispub.com/IJPHARM/1/2/6216> [Accessed on 16/08/2018]
- [35] Mukherjee S, Sen S, Chatterjee SS 2, Biswas A, Sinha S, Ghosal M, Tripathi ST. Prescribing Pattern of Psychotropic Medications in Psychiatry Outpatients at a Tertiary Care Teaching Hospital in India: A Prospective Cross-sectional Study. International Journal of Hospital Research 2014; 3: 113-22
- [36] World Health Organization. Bangladesh: Pharmaceuticals in Health Care Delivery. World Health Organization, New Delhi 2001. Available at: http://www.searo.who.int/entity/medicines/bangladesh_situational_analysis.pdf [Accessed on 16/08/2018]
- [37] Wazana, A. Physicians and the pharmaceutical industry: Is a gift ever just a gift? Journal of American Medical Association 2000; 283, pp. 373-80
- [38] Norris P, Herxheimer A, Lexchin J. Drug promotion: What we know, what we have yet to learn. World Health Organization/Health Action International, Geneva, Switzerland 2005. Available at: http://www.who.int/medicines/areas/rational_use/drugPromodhai.pdf [Accessed on 15th January 2016]
- [39] Mohiuddin M, Rashid SF, Shuvro MI, Nahar N, Ahmed SM. Qualitative insights into promotion of pharmaceutical products in Bangladesh: how ethical are the practices? BMC Medical Ethics 2015; 16: 80.