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Prescribing trends of Psychotropic drugs in Northern Bangladesh

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Abstract: The evidence of psychotropic drug safety and efficacy is scant and widely debated. Yet, the prescription prevalence and incidence are increasing. A cross-sectional health survey was carried out with a self-designed standard questionnaire by directly interviewing the 615 patients from May, 2015 to January, 2016 in Rajshahi division. This study group comprised of 63.58% male and 36.42% female and most of the patients are young to middle aged with 15-24 years 35.93%, 25-34 years 31.38%, 35-44 years 13.01% and 45-54 years 11.22%. The main causes of taking psychotropic drug is anxiety/tension 25.37%, depression 18.21%, sleeping disorder 10.56% and pain 10.24%. It is found in this study, 35.77% of the patients are taking this type of drug without the concern of physician and 13% patients are going to quack doctor. Only 49.67% cases of the doctors are showing interest on the past history of patients and in 56.49% cases, physicians are providing sufficient information about dose and dosage interval and in 46.59% cases doctors are advising the patients about the completion of doses. The majority of the patients were prescribed by anxiolytic drug (59.02%), antipsychotic drug (19.84%) and antidepressant drug (20.65%). Here, half of the patients do not have experience of side effects but others are experiencing drowsiness, headache, sedation, weakness etc. It is also found that 48.54% of patients are not getting any support from their family members to recovery from disease.

Keywords: Psychotropic drugs, self-medication, prescribed drugs, side effects, counseling

INTRODUCTION

Psychotropic medication has been a mainstay of mental health care since the mid-20th century and is widely cited as instrumental in the decreased need for the long-term hospitalization of people with severe and enduring mental illness. The range of available drugs has evolved over time as a result of research and development in the pharmaceutical industry. Prescribing guidelines and advice to clinicians regarding the management of psychotropic medication regimes are also under constant review by a number of national bodies, such as the National Institute for Health and Care Excellence (NICE).

For the purposes of this study, psychotropic medicines are defined as any medicine listed in subchapters 4.1–4.4 of the British National Formulary (BNF), which includes:

- hypnotics and anxiolytics (4.1)
- drugs used in psychoses and related disorders, including mood stabilizers (4.2)
- antidepressant drugs (4.3)
- CNS stimulants and drugs used for attention deficit hyperactivity disorder (ADHD) (4.4) (Hassan L et al., 2014).

Although antipsychotic drugs were first developed in the early 1950s to treat schizophrenia, they have become widely used in long-term care (LTC) facilities to manage behavioral disturbances and agitation associated with

dementia (Hagen B and Armstrong-Esther C; 1999). Due in large part to these side-effects, there has been increasing concern over the last 30 years about the widespread use of antipsychotics in nursing homes (Avorn J et al., 1989, Buck JA, 1988, Ray WA et al., 1980). Psychotropic medications are prescribed to treat a myriad of behavioral and psychiatric symptoms in both the general population and in individuals with mental retardation (Advocat CD et al., 2000, Young AT and Hawkins J; 2002). In the field of mental retardation, psychotropic medications are typically used to reduce maladaptive behavior such as aggression, pica, property destruction, and self-injury (Aman MG et al., 1987).

The prevalence of psychotropic drug use in the general population varies greatly between countries: 3.5% in England (Ohayon MM et al., 1998), 6.4% in Chile (Rojas G et al., 2005), 7.2% in Canada (Beck CA et al., 2005), and 10.6% in Australia (Goldney R and Bain M; 2006). The consumption of psychotropic drugs is increasing in industrialized countries, in France 25% of the general population are taking a psychotropic, and in UK (3.5%), Germany (5.9%), Netherlands (7.4%), Belgium (13.2%), Italy (13.7%), and Spain (15.5%) patients are taking psychotropic drug (Gasquet I et al., 2005, Alonso J et al., 2004, Ohayon M and Lader MH; 2002). Hypnotic drug use in 0–17 year olds also increased during 2007–2011, from 8.9 to 12.3 per 1000 in Norwegians (Hartz I et al., 2012). In the United States, lifetime, annual and monthly prevalence of non-medical use of psychotherapeutics (mostly pain relievers) among persons aged 12 and over was reported as 20.4, 6.3 and 2.7 percent, respectively, for 2010 (DHHS, 2011). In South America and Central America, use of tranquillizers and sedatives, lifetime prevalence is 6.6 percent for females and 3.8 percent for males, while the corresponding prevalence rates in Europe were 13.0 percent for females and 7.9 percent for males (Hibell B, 2009). Elsewhere, a school survey conducted in 2009-10 in Morocco found that lifetime, annual and past-month prevalence of the use of psychotropic substances without a prescription exceeded that of cannabis among females aged 15-17. Similarly, there is an evident preference for psychotropic drugs among females 15-16 years old in Algeria, which exceeds not only cannabis use but also alcohol and tobacco use (CE, 2011). The debate on the suicide risk of youths in therapy with antidepressants has led to increased attention on the safety and efficacy of psychotropic drugs in children over the last few years. Since December 2003, several drug regulatory agencies have been issuing a warning to physicians about an increased risk of suicidality linked to antidepressant use (CSM, 2003; FDA, 2004).

Mental health expenditures from government health department are very insignificant and are less than 0.5% in Bangladesh. Of all the expenditures spent on mental health, 67% are devoted to mental hospital. There are 31 community-based psychiatric inpatient units available in Bangladesh, for a total of 0.58 beds per 100,000 populations. The total number of human resources working in mental health facilities or private practice per 100,000 populations is 0.49 in Bangladesh (WHO, 2007). In terms of support for child and adolescent health, no primary and secondary school has either a part-time or full-time mental health professional or no primary and secondary school has school-based activities to promote mental health and prevent mental disorders. At present many students are taking psychotropic drugs such as sedative and anti-anxiolytic drugs during their examination to remove tension.

METHODS

Setting and Design

This cross-sectional health survey was carried out with a self-designed standard questionnaire by directly interviewing the 615 patients. Six districts of Rajshahi division were selected for collecting the data for over nine month's period from May, 2015 to January, 2016. Rajshahi is located in the north-west of Bangladesh (Figure 1) and the divisional headquarters of Rajshahi Division as well as the administrative district, having an estimated population of 2,595,197. Its total area is 2,407.01 km^2 (929.35 sq mi) and is situated on the northern banks of the river Padma (Bangladesh Bureau of Statistics, Rajshahi. 2011). Another big city Bogra,

sometimes described as the *nerve centre of Northern Bangladesh*, and a bridge between Rajshahi Division and Rangpur Division. The area of the district is approximately 2,898.68 km² (1,119.19 sq mi), and Covers a Population of 3,400,874 people (Bangladesh Bureau of Statistics, Bogra. 2011). Naogaon, one of the old city of Bangladesh consists of 2,600,157 people and has area of 3,435.65 km² (1,326.51 sq mi) (Bangladesh Bureau of Statistics, Naogaon. 2011). Another city Natore, which is bordered by Naogaon and Bogra districts to the north, Pabna and Kushtia districts to the south, Pabna and Sirajganj districts to the east, Rajshahi district to the west, has an area of 1896.05 km² (733.67 sq mi) and total population of 1,706,673 (Bangladesh Bureau of Statistics, Natore. 2011). Sirajganj is the gateway to the North Bengal, and it has area of 2,497.95 km² (964.46 sq mi) and total population is 3,097,489. It is bordered on the north by Bogra District and Natore District; on the west by Natore District and Pabna District; on the south by Pabna District and Manikganj District; on the east Manikganj District, Tangail District and Jamalpur District (Bangladesh Bureau of Statistics, Sirajganj. 2011). Chapai Nawabganj is located on the north-western part of Bangladesh. The north and west part of Chapai Nawabganj is bounded by Malda and Nadia of India, east is by Naogaon and south-east is by Rajshahi district. It has total area of 1,702.55 km² (657.36 sq mi) and population of 1,647,521 (Bangladesh Bureau of Statistics, Chapainawabganj. 2011). In this health survey, any patient who was prescribed one or more psychotropic drugs at any stage during this study is included in this survey.

Figure 1: Map of Rajshahi division.

The main objectives of the research was to find out the prevalence of taking psychotropic drug and identify the major psychiatric disease, determine the age and gender that are most vulnerable of taking this types of drugs, and effects of family members on a person.

Data Collection

Data were collected from the patients by random selecting the patients from hospital, pharmacies and by home visit. The data collectors were waiting in front of the pharmacy shop, or medical college and convince the patients who are possessing psychotropic medication in their prescription to produce their prescription data to the interviewers as well as participated in the interview session. The language of the questionnaire was English which is translated to Bengali language by the data collectors to the participants whom mother tongue is Bengali language. The Bengali answers given by the respondents was translated to the English language in the same way by the data collectors. Written consent was taken from each patient during this study. Few questionnaires were excluded during the data analysis because of insufficient information.

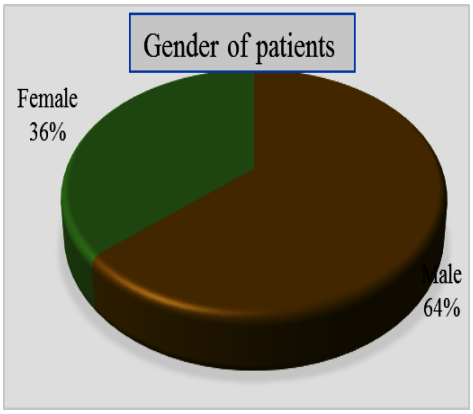
Statistical Analysis

Descriptive statistics were applied to the collected data using Microsoft Excel 2013 software.

RESULTS

Patient characteristics

During the 9-months period, 615 patients of psychosis were questioned in Rajshahi Division, Bangladesh. The study included 224 female (36%) and 391 male patients (64%) (Figure 2). The majority patients with age is 15-34 years (Figure 3).



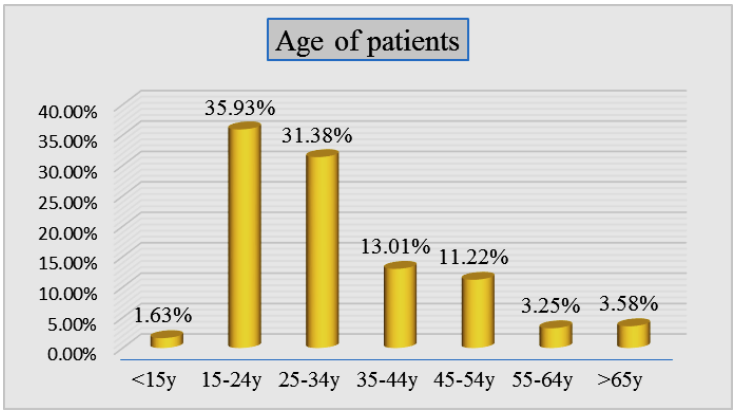


Figure 2: Gender of patients. **Figure 3:** Age of patients.

The most common cause to being a psychiatric patient is tragedy, anxiety, depression, sleep disorder and recovery from pain (Table 1).

Table 1: Cause of taking psychotropic drugs.

Cause	Frequency	Percentage
Medical abnormality	30	4.88%
Addiction	10	1.63%
Tragedy/depression	112	18.21%
Pain	63	10.24%
Anxiety/tension	156	25.37%
Excitement	5	0.81%
Sleep disorder	65	10.57%
Mental/psychotic problem	15	2.44%
Gastric problem	20	3.25%
Family history/genetic	18	2.93%
Other	121	19.67%

Physician characteristics

A large number of patients are taking this type of drug without the concern of physician, only half of the total patients are visiting physician for their problem while more than one third of the patients are taking self-medication (Figure 4).

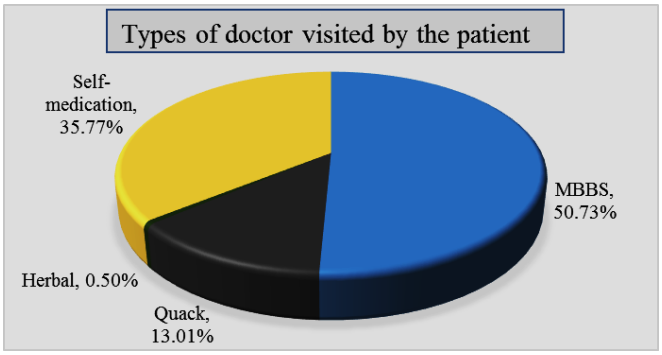


Figure 4: Types of doctor visited by the patients.

A significant proportion of doctors are not asking the general information from patients and sometimes they are not providing sufficient information about the use of prescribe drugs such as dose and dose interval, direction for dose completion, etc. (Table 2).

Table 2: Characteristics of physician to patients.

Characteristics	Response	Frequency	Percentage
Doctor clearly ask/know the history of the patient	Yes	306	49.67%
	No	90	14.61%
	N/A	220	35.71%
Mention about dose and dose interval in prescription	Yes	348	56.49%
	No	48	7.79%
	N/A	220	35.71%
Direction for dose completion	Yes	287	46.59%
	No	109	17.69%
	N/A	220	35.71%

Therapy and effects

The patients are mainly taking anxiolytic drug but they also take antidepressant and antipsychotic drug (Figure 5).

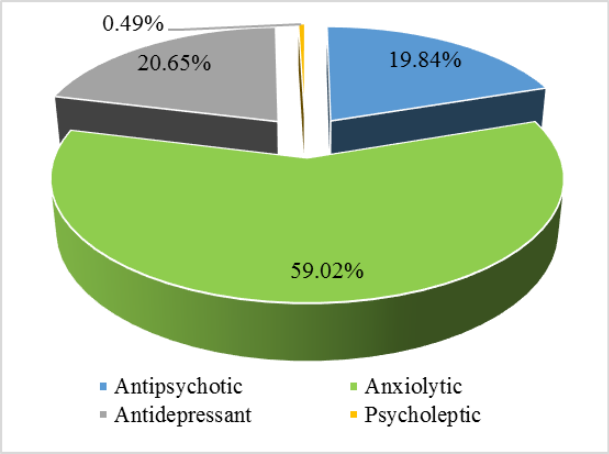


Figure 5: Prescribed therapeutic drugs

Nonetheless side effects are an important consideration when using psychotropic drugs. The careful monitoring of side effects is recommended (Matson JL et al., 2008). All medications carry both risks and benefits; therefore, the intended therapeutic impact or outcome may be influenced, negated, or compromised by secondary effects of the medication. Side effects can potentially impact: medication non-compliance, increased behavior problems, quality of life, impaired cognitive functioning, interference with learning (Kalachnik JE et al., 1998). About fifty percent of patients are facing various side effects that are related to psychotropic drugs. The major complications are drowsiness, headache, sedation, weakness, nausea, anorexia, constipation, dizziness, vertigo, etc. (Table 3).

Table 3: Side effects faced by patients

Side effect	Frequency
Abnormal dream	2
Acidity	3
Anorexia	6
Back pain	5
Blurred vision	4
Confusion	2
Constipation	7
Deep sleep	3
Depression	6
Dizziness	8
Drowsiness	115
Dry mouth	2
Headache	28
Hypotension	2
Insomnia	2
Nausea	13
No side effect	301
Sedation	50
Sleeplessness	4
Tremor	5
Vertigo	9
Weakness	29
Other	20

Support from family members and guardians helps to recovery from psychosis. It is found that about half of the patients have been motivated from family members (Figure 6).

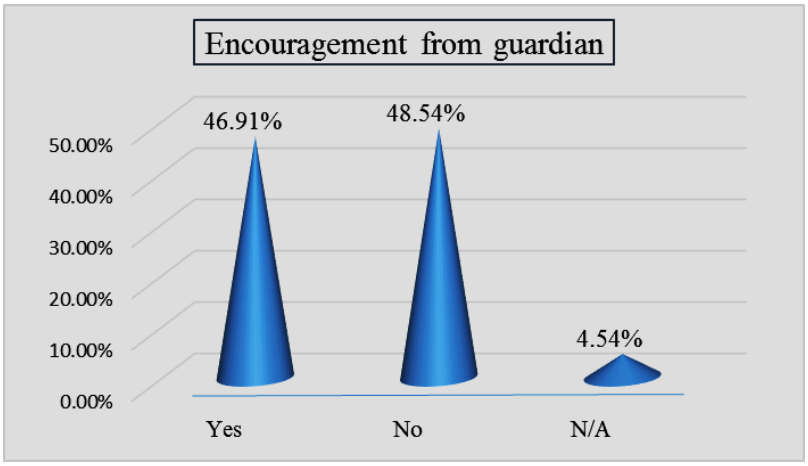


Figure 6: Encouragement of patients from guardians.

DISCUSSION

The study involved a total number of 615 patients who are taking psychotropic drugs and native of Rajshahi division of Bangladesh. This study group comprised of 63.58% male and 36.42% female. Most of the patients are young to middle aged with 15-24 years 35.93%, 25-34 years 31.38%. Patients with 35-44 years consisted13.01% and 45-54 years consisted 11.22%. Hassan L et al., (2014) published similar results on psychiatric patients and found that in England, 29.4% patients are between 18-24 years, 29% patients between 25-34 years, 20.3% patients 35-44 years, 12.8% patients 45-54 years, 5% patients 55-64 years and 2.6% patients 65-74 years old (Hassan L et al., 2014). The patients are taking psychotropic drug due to anxiety/tension 25.37%, depression 18.21%. The tension arises due to exam, stress of life, etc. Depression is due to various tragedies such as love tragedy, admission test tragedy, breakup with partner, death of life partner and parents. Lasserre A et al., (2010) also concludes similar results in their study (Lasserre A et al., 2010). Sleeping disorder and pain is also common cause of taking psychotropic drug comprising 10.56% and 10.24% respectively. Pain mainly arises during surgery and from other source such as broken of hands and leg, piles etc. The patients are also taking psychotropic medicine due to various medical abnormality such as allergy, angina, ischemic shock, palpitation, and vertigo. Gastric problem like nausea, vomiting and anorexia are also causes of taking psychotic drugs.

There have been several published guidelines regarding the best-practice recommendations for the use of psychotropic medications with people (Deb et al., 2006; Deb et al., 2009; Sullivan et al., 2006). Previous studies have revealed a widespread lack of commitment to following published guidelines on the use of psychotropic medications in community settings (Cheetham and Bradley, 2010; de Kuijper et al., 2010; Holden and Gitlesen; 2004). Similarly, in this study, more than one-third (35.77%) of the patients are taking this type of drug without the concern of physician which might cause various side effects such as dependence or accidently over dose may cause serious toxicity or even death. About 13% of patients are going to quack doctor which also enhances the possibility of over dose or wrong treatment. The patients who are going to doctor does not even get sufficient counselling, only 49.67% cases the doctors are showing interest on the past history of patients and in 56.49% cases physicians providing sufficient information about dose and dosage interval. In 46.59% cases doctors are advising the patients about the completion of doses.

There are several categories of psychotropic medications used to address psychiatric disorders or problem behaviors in individuals. The general goal of psychotropic interventions are the altering of neurological systems in order to decrease undesirable symptoms or mood states, to modulate neurotransmitter activity, and to alter central nervous system functions (Pointedexter; 2002). The majority of psychotropic medications being

prescribed fall into the following medication classes: neuroleptics (antipsychotics); antiepileptic's; antidepressants; anxiolytics and sedatives; mood stabilizers; opioid blockers; and beta-adrenergic blockers. Antidepressants were categorized into three subclasses: tri-cyclic antidepressants, selective serotonin reuptake inhibitors, and "other" antidepressants (Kern, 1999; NIMH, 2010). The majority of the patients were managed by anxiolytic drug (59.02%), antipsychotic drug (19.84%) and antidepressant drug (20.65%). Similar results was published in previous study, where antipsychotic drug use lies between 18-23% and antidepressant use between 21-51% (McGillivray JA and McCabe MP; 2006, Ster MP and Gorup EC; 2011, Taipalea H et al., 2014). In their study, Lasserre A et al., (2010) found anxiolytics being the most commonly used drugs (57.5%) in psychotropic patients (Lasserre A et al., 2010). In their study, Spreat et al., (2004) found that approximately 20% of adults were being prescribed antipsychotics, 15.8% antidepressants which is very close to our data (Spreat et al., 2004). In another study on 873 individuals, it was found that, 21 % of psychotropic patients were prescribed anti-depressants (McGillivray JA and McCabe MP; 2006). The higher rate of use of anxiolytic drug in this study is mainly due to tension, anxiety and sleeping disorder.

There are many known side effects of psychotropic medications (Deb et al., 2009; Mahan S et al., 2010a, Matson J et al., 2000). In the treatment of mental health issues, there is evidence that psychotropic medications can reduce underlying adverse mood states, and thereby decrease the impact of external antecedent or triggering conditions (Deb et al., 2007). However, there is ongoing concern that the variability in neurological, cognitive, or behavioral impairments, makes individuals more susceptible to adverse side effects (Mahan S et al., 2010b). In this study, about half of the patients has experience no side effects. But the rest of the patients, they are experiencing various side effects. The most common side effects are drowsiness, headache, sedation, weakness, nausea, anorexia, constipation, dizziness and vertigo. Research has also shown that some side effects are reversible with the discontinuation of a medication, whereas some effects are permanent, and others can be life threatening (e.g. neuroleptic malignant syndrome) (Advokat C et al, 2000). Family is a very potent source of mental satisfaction and can provide mental support to a person in stressed conditions. It this study it is extracted that only 46.91% patients are getting sufficient mental support from their family members to recovery from disease and 48.54% patients are not getting any support from their family members which makes them more and more vulnerable to disease.

This study has several limitations, such as, the data presented here is based on retrospective analysis. Secondly, the number of patients was relatively small. And lastly the study was conducted for only Northern regions of Bangladesh, which may vary from the results of other parts of the country.

CONCLUSION

It can be concluded that males are more affected in psychosis and most of the patients are in age between 15-34 years old. The patients are taking psychotropic drug due to depression or tragedy (which arise from breakup with partners and favored person), tension, pain and sleeping disorder. In one in three patients are taking medication without physician concern and large number of patients are not getting sufficient concern from their guardians and existence of bad family relationship is also a cause of being psychotropic patient.

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