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RESEARCH ARTICLE

# A study of benzodiazepine prescription patterns in a tertiary general hospital

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## ABSTRACT

**Background:** Benzodiazepines are the most common prescribed drugs in psychiatric practice with the main indications being anxiety and substance withdrawal. There is a dearth of Indian data on prescription patterns of these drugs and there is also easy availability of this drug over the counter in India. **Aims and Objectives:** The present study was designed to study the prescription pattern of benzodiazepines in the psychiatry unit of a tertiary general hospital. **Materials and Methods:** Using convenience sampling, 300 patients on benzodiazepines were part of this survey and they filled up a semi-structured questionnaire designed for the study. The study involved psychiatric patients alone. The data were analyzed using descriptive statistics. **Results:** A total of 180 patients were male and 120 were female. The mean age of the group was 36.33 ± 14.3 years with a range of 16–78 years. The mean duration of illness of the patients in the survey was 4.33 ± 4.1 years. The duration of benzodiazepine use in the sample was 1.49 ± 1.3 years (range 0–8 years) and maximum duration of abstinence was 2.17 ± 4.3 years (range 0–36 months). The reasons for prescribing benzodiazepines were anxiety ($n$ = 139, 46.4%) which was the most common indication. 247 (82.7%) patients reported no side effects and the most common side effect reported was sedation ($n$ = 26, 8.7%). Clonazepam and Lorazepam were the most commonly prescribed medications.
**Conclusions:** There is a need for data, which can help better policy, to regulate the prescription of benzodiazepines at all levels in hospital and clinical practice. Further studies in larger samples and multiple centers across the nation are needed to warrant our findings.

**KEY WORDS:** Benzodiazepines, Clinical practice, Clonazepam, Lorazepam, Prescription patterns

## INTRODUCTION

Benzodiazepines are commonly prescribed drugs that are widely used in the management of anxiety, sleep problems, and alcohol withdrawal.[1] The efficacy of benzodiazepines has been demonstrated in anxiety disorders.[2] Many patients consume benzodiazepines when started by their doctor and continue using the same for a long period of time even though the prescription time may have elapsed.[3] When benzodiazepines are used for extended periods of time, they may lead to problems associated with discontinuation and withdrawal symptoms.[4] While various guidelines suggest that one must exert caution when prescribing benzodiazepines, many clinicians may continue prescribing these drugs for years and months that may lead to tolerance and dependence on these molecules.[5] Benzodiazepines are one of the most commonly prescribed classes of psychotropic medications in developing countries. Many of the prescriptions are for adults that are in the younger age group.[6] Several studies have further found that primary care physicians rather than

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psychiatrists write most of the benzodiazepine prescriptions and that a substantial proportion of benzodiazepine use is long term and indefinite.[7] Many patients in India procure benzodiazepines from chemists over the counter without a prescription. Yet, surprisingly, little is known about benzodiazepine prescribing patterns in Indian psychiatric settings.[8]

According to several studies, benzodiazepine overdose is the most common way of suicidal attempts in patients with substance use disorder and make up of 30–45% of the suicidal attempts in Western literature.[9] In India, due to availability of the drugs over the counter, a fact which can be generalized to most developing nations, this is more common than the west. According to a study, inpatients on benzodiazepines in the department of internal medicine of a hospital were followed for 1 year. 50% of the patients prescribed benzodiazepine for the 1st time were taking the drug even after 1 year.[10] Another study done on in- and out-patients revealed that in 73.4% of drug prescriptions, the duration of treatment was not specified and the iatrogenic induction of benzodiazepine dependence is an issue that needs attention and intervention.[11] Keeping in mind these problems, we decided to conduct a prescription survey on benzodiazepine prescription patterns in the psychiatry department of our hospital with the following aims, namely to know the duration of prescription, demographic patterns, and side effects noted by patients.

## MATERIALS AND METHODS

This was a 1 week long cross-sectional study conducted at the department of psychiatry of a tertiary hospital which was attached to a medical college in the city of Mumbai. Data were collected from patients attending the psychiatry outpatient department and from in patients admitted in the psychiatry ward based on the principle of convenient random sampling. The information was entered on a questionnaire specifically designed for the study. The types of questions asked in the questionnaire were based on patient sociodemographic data, hospital settings, illness, and illness duration along with prescription of benzodiazepines given to the patient. The sociodemographic data included patient's hospital record number, gender, age, marital status, profession, education, and place of residence. Primary psychiatric diagnosis was noted, and benzodiazepine prescription information included questions about the indication, type, dosage, frequency, and route of administration and length of benzodiazepine administration. The questions were answered by the patient themselves or their relatives and attendants. The information about the prescriptions was confirmed from the medical records. All patients had given informed consent from the patients or their attendants according to an approved protocol. The data were analyzed using simple descriptive statistics. The study was approved by the institutional ethics committee.

## RESULTS

### Sociodemographic Profile of the Sample

A total of 300 patients participated in the study using the convenience sample method. 180 patients were male and 120 were female. The mean age of the group was 36.33 ± 14.3 years with a range of 16–78 years. The mean years of education of the sample were 8.79 ± 4.8 years with a range of 0–12 years. Most of the patients, i.e., 282 (94%) were educated to just primary school level. All patients belonged to the lower socioeconomic strata based on enquiry of monthly income.

### Illness and Benzodiazepine Usage

The mean duration of illness of the patients in the survey was 4.33 ± 4.1 years. The duration of benzodiazepine use in the sample was 1.49 ± 1.3 years (range 0–8 years) and maximum duration of abstinence was 2.17 ± 4.3 years (range 0–36 months).

One hundred and twelve patients (37.4%) use benzodiazepines once a day, 94 (31.3%) use it twice a day, 83 (27.6%) using thrice a day, and 11 (3.7%) use it 4 times a day. The reasons for prescribing benzodiazepines are mentioned in Table 1 where anxiety ($n$ = 139, 46.4%) was the most common indication. 247 (82.7%) patients reported no side effects and the most common side effect reported was sedation ($n$ = 26, 8.7%) [Table 2]. Insomnia and withdrawal anxiety

**Table 1:** Indications for prescribing benzodiazepines

| Reason | Number (%) |
|---|---|
| Agitation | 11 (3.7) |
| Anxiety symptoms | 139 (46.4) |
| Catatonia | 5 (1.7) |
| Hallucinations | 1 (0.3) |
| Insomnia | 90 (30) |
| Nightmares | 2 (0.7) |
| Panic attacks | 11 (3.7) |
| RLS | 1 (0.3) |
| Seizures | 21 (7) |
| Substance withdrawal | 19 (6.4) |

RLS: Restless legs syndrom

**Table 2:** Side effects noted due to benzodiazepines

| Side effect | Number (%) |
|---|---|
| Forgetfulness | 7 (2.3) |
| Giddiness | 6 (2.0) |
| Inattention | 6 (2.0) |
| Lethargy | 6 (2.0) |
| Nocturnal enuresis | 2 (0.7) |
| Sedation | 26 (8.7) |
| No side effects noticed | 247 (82.7) |

**Table 3:** Withdrawal features noted due to benzodiazepines

| Withdrawal features | Number (%) (overlapping data) |
|---|---|
| Insomnia | 65 (21.6) |
| Tremors | 22 (7.33) |
| Anxiety | 54 (18.0) |
| Headache | 1 (0.3) |
| Seizures | 2 (0.7) |
| No features | 179 (59.7) |

were the most common withdrawal symptoms noted in the sample [Table 3]. Seven patients reported doing an overdose and many patients overdosed between 4 and 10 tablets each all of which belonged to the Clonazepam group. In our study, Clonazepam and Lorazepam were the most commonly prescribed medications. Alprazolam was the third most commonly prescribed drug. All patients who were on Alprazolam ($n$ = 38, 12.67%) were at a dosage of 0.25 mg twice a day which is the routine prescribing practice. All patients who were on Lorazepam were at 2 mg as a night dose ($n$ = 69, 23%). The mean dose of Clonazepam was 0.75 ± 0.25 mg. Of the 300 patients evaluated, 193 (64.34%) were on Clonazepam. 101 (52.33%) were on a thrice a day dosage, 41 (21.24%) were on a twice a day dosage, and 51 (26.42%) were on a once a day dosage. The strengths commonly prescribed were 0.25 and 0.5 mg.

## DISCUSSION

The prevalence of males in our study was higher than in females, which is contradictory to most studies carried out in community settings. However, the male preponderance is in keeping with studies done among inpatients.[12] There are little Indian data on benzodiazepine use where we could compare the same to our studies. It is noteworthy that most of the studies on benzodiazepine are done in developed nations where prescriptions are well regulated. Little data are available regarding developing countries where prescriptions are not regulated and the medicines are available over the counter.[13] Clonazepam and Lorazepam were most frequently prescribed drugs in this class in our study unlike studies abroad that report Midazolam and Alprazolam.[14] Alprazolam in our center is usually prescribed as a twice a day regimen. Lorazepam is only given as a night dose with more sedating effect than antianxiety. Clonazepam, on the other hand, has been used in our center with dosages of once, twice, and thrice a day. There is a huge prescription discrepancy between the types of benzodiazepines prescribed and the duration of their action in different studies. Moreover, in our study as well as others, indication for benzodiazepine usage was anxiety and substance withdrawal.[15] In our study, benzodiazepines were all prescribed by the psychiatrist, but worldwide studies have been done where benzodiazepines have been prescribed more by physicians, primary care doctors, surgeons, and oncologists. No significant association has been documented between age, gender, marital status, economic conditions, and the requirement for benzodiazepine use.[16] In fact, studies report that length of hospitalization plays an important role. There is a need to analyze the prescription pattern of benzodiazepines to regulate their usage in developing nations.[17] More studies correlated with the indications of the individual types of benzodiazepines would help to formulate guidelines for prescribing these drugs in developing nations. Many studies have successfully reported the decrease in the benzodiazepine prescription by effective strategies which can be duplicated in developing nations.[18] Another concern is the dependence potential of benzodiazepines, which has been confirmed in various studies along with abuse and tolerance. There is a need for substantial and convincing data, which can help better policy, to regulate the prescription of benzodiazepines at all levels in hospital and clinical practice.[19] Further studies in larger samples and multiple centers across the nation are needed to warrant our findings.

## CONCLUSIONS

There is a need for data, which can help better policy, to regulate the prescription of benzodiazepines at all levels in hospital and clinical practice. Further studies in larger samples and multiple centers across the nation are needed to warrant our findings.

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