

Original Article

Incidence of Benzodiazepine Use and Misuse Among Adults in Selected Areas of Bangladesh

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Abstract

Background: Benzodiazepines (BDZ) are widely prescribed for anxiety and insomnia in Bangladesh, but their misuse has become a major public health concern. **Objective:** The aim of this study was to identify the incidence and patterns of use and misuse of BDZ in Bangladesh, and to explore the factors contributing to their misuse. **Methodology:** A cross-sectional study, including 368 current BDZ users, was conducted in the department of Pharmacology, Monno Medical College, Manikganj, during January, 2021 to December, 2022. The participants were selected randomly. Structured questionnaires were used to include participants' personal information, drug use characteristics, physiological and psychological effects of drugs usage. Verbal consent was taken from each of the respondents. **Results:** In this study, 268(72.83%) of the participants were male, where 157(42.66%) were from the age group 31-40 years and 139(37.77%) were single. Among the study population, 51(13.86%) were students, 79(21.47%) had monthly family income above 50,000 Bangladeshi taka. Many of the participants reported that they used BDZs to relieve stress/pressure (108, 29.35%), followed by 95(25.82%) to manage insomnia, 79(21.47%) for relieving anxiety, depression and to get pleasure and others. The mostly used drug was clonazepam (112, 30.43%), followed by diazepam (108, 29.35%) and others. Most of the users were influenced by friends (115, 31.25%). The common side effects of using BDZs were confusion (47, 12.77%), fatigue (45, 12.22%), drowsiness (37, 10.05%), and others. The mostly experienced withdrawal effect was headache (86, 23.28%), followed by insomnia (59, 16.25%), confusion (50, 13.48%) and others. **Conclusion:** BDZs were widely used in selected areas of Bangladesh with high incidence of misuse. The most common reason of misuse was self-medication. Increasing awareness program should be taken for safe and effective use of the drug.

Key Words: Benzodiazepines (BDZ), Drug misuse, Side effects, Withdrawal effects

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Introduction:

Benzodiazepines (BDZs) are a class of drugs commonly used to treat anxiety, insomnia, and other mental health conditions. However, their misuse has become a growing concern in many countries, including Bangladesh and which is related to public health issue.¹ The second most common class of drug; benzodiazepines are the reason for death induced by drugs in Australia.² Non-medical use of

Benzodiazepines in Australia as sleeping pills, among males, the majority of benzodiazepine related ambulance attendances in 2019 were female.³ International Centre for Diarrhoeal Disease Research, Bangladesh (icddr) conducted a study shows that 79.4% of the drug users were male in Dhaka city, 64.8% of the drug users were unmarried, 56.1% were either students or unemployed, and 95.4% are smokers and among them, 85.7% get into

consuming drugs under the influence of friends in Bangladesh.⁴

The people using non-prescribed benzodiazepines may be consuming these substances and they are thinking those are genuine pharmaceutical products.⁵ These counterfeit benzodiazepines may have no known medical uses and can cause unexpected and serious adverse effects.⁶

Factors contributing to misuse include easy availability, lack of awareness about risks, and inadequate regulation.⁷ Understanding the extent and reasons for benzodiazepine misuse in Bangladesh is crucial for developing effective prevention and intervention strategies.

Methodology

Study Design and Study Population

A cross-sectional study was completed among the benzodiazepine (BDZ) users. Data was collected through face-to-face interviews with a structured questionnaire. The target population was all those who used non-prescription BDZ alone or with other drugs. A total number of 368 participants, who were living in different areas of Dhaka city, were included in this study with the age range of 22-60 years. The duration of collecting data was 2 years (from January, 2021 to December, 2022). Participants were selected by simple random sampling from drug sellers, doctors and those attending drug dispensaries.

Data collection method

The structured questionnaire had different segments and accordingly interviewed to participants. The respondents were giving the detail information regarding socio-demographic profile with smoking habit. Then collected information about participants' chronic disease, frequency and duration of drug use, purpose of the drug use, name of the drug use, history of multiple drug use and recommended by whom etc. Respondents also informed among problems (physical and psychological) faced in current context after taking the drug, and withdrawal effect.

This paper consisted of multiple choice and open answer question. After explaining the purpose of the study to the respondents individually and observed about their willingness to respondents and the researcher interviewed all the respondents by asking questions in Bengali and completing the question paper in English.

Statistical Analysis

Statistical analyses were carried out by using the Statistical Package for Social Sciences version 20.0 for Windows

(SPSS Inc., Chicago, Illinois, USA). The mean values were calculated for continuous variables. The quantitative observations were indicated by frequencies and percentages.

Ethical considerations

All procedures of the present study were carried out in accordance with ethical guidelines of the Institutional Ethical Review Board. Participants in the study were informed about the procedure and purpose of the study and confidentiality of information provided. All participants consented willingly to be a part of the study during the data collection periods. All data were collected anonymously and were analyzed using the coding system.

Results:

Sociodemographic profile of respondent

Out of 368 respondents, 268(72.83%) were male and 100(27.17%) were female. Most of the respondents were coming from the age group 31-40 years (157, 42.66%), followed by 41-50 years (141, 38.32%) and others. Majority of the respondents were married (220, 59.78%), other 139(37.77%) were single and only 9(2.45%) were divorcee. The educational qualification of the respondents was in maximum cases at university level (169, 45.92%), then 107(29.08%) completed the higher secondary level, a few others completed only primary and secondary levels, while only 5(1.36%) were illiterate. Considering occupation of the participants, majority were service holders (135, 36.68%), some 81(22.01%) were businessmen, 51(13.86%) were students and others of different occupation, while some 36(9.78%) were unemployed. Monthly family income of most of the respondents (100, 27.17%) was in between 20,000-35,000 Bangladeshi taka (BDT), followed by 82(22.28%) having 25,000-50,000 (BDT) and 79(21.47%) having above 50,000 BDT. More than half (211, 57.34%) of the drug users were smokers and among them, majority (108, 48.82%) were chain smokers. (Table I)

Drug use characteristics of the respondents

Most of the respondents (108/368, 29.35%) taken drug to get relieve from stress/pressure, followed by 95(25.82%) to have relieve from insomnia, 79(21.47%) for relieving anxiety, depression and to get pleasure, 58(15.75%) to get sound sleep and remaining 28(7.61%) taken BDZs for migraine- headache and to increase the working capacity. (Figure 1)

Table I: Socio-demographic profile and smoking habit of the respondents (n=368)

Different Variables	Frequency	Percentage (%)
Gender		
Male	268	72.83
Female	100	27.17
Age Group (Years)		
22-30	45	12.23
31-40	157	42.66
41-50	141	38.32
51-60	25	6.79
Marital Status		
Single	139	37.77
Married	220	59.78
Divorced	9	2.45
Level of Education		
Primary	26	7.07
Secondary	61	16.58
Higher secondary	107	29.08
University	169	45.92
Illiterate	5	1.36
Occupation		
Student	51	13.86
Service	135	36.68
Business	81	22.01
Garment worker	45	12.23
Unemployed	36	9.78
Housewife	20	5.43
Monthly Family Income (Bangladeshi taka)		
Below 10,000	40	10.87
10,000-20,000	67	18.21
20,001-35,000	100	27.17
35,001-50,000	82	22.28
Above 50,000	79	21.47
Smoking		
Non-smoker	157	42.66
Smokers	211	57.34
Regular Smoker	103	48.81
Chain-smoker	108	48.82

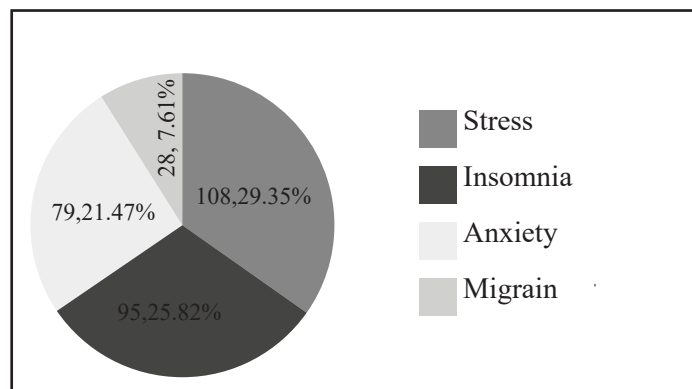


Figure 1: Use of drug for different participant (n=368)

Majority of the respondents taken clonazepam (112, 30.43%), followed by diazepam (108, 29.35%), bromazepam (92, 25.00%) and clobazam (56, 15.21%). (Figure 2)

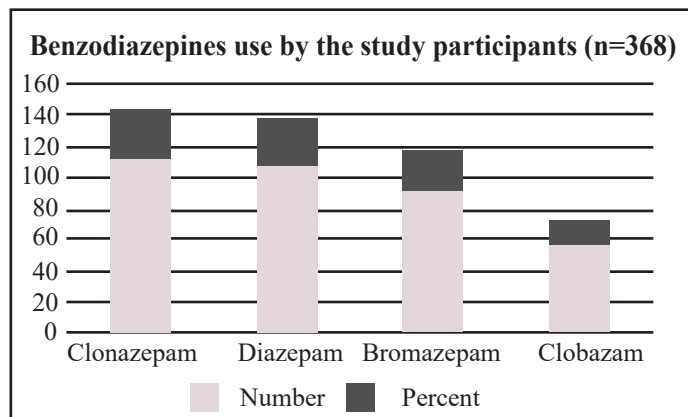


Figure 2: Use of different Benzodiazepines by the respondents

Considering frequency of drug use, it was found that majority (111, 30.16%) taken drug according to their necessity, while 96(26.08%) of them taken drugs daily, 81(22.01%) taken almost daily and another 80(21.73%) of the respondents taken drugs irregularly with no fixed schedule. (Table II)

Table II: Frequency of drug use by the participants (n=368)

Frequency of drug use	Number of respondents	Percent (%)
According to needs	111	30.16
Daily	96	26.08
Almost daily	81	22.01
No fixed time	80	21.73

Most of the drug users were influenced by their friends (115/368, 31.25%), followed by recommendations by doctors (34, 9.24%), verbal advice from medicine seller/pharmacist (88, 23.91%), by their colleague (31, 8.42%) and by their family members (15, 4.08%). Many of the respondents (85, 23.09%) also taken drugs by self-medication. (Table III)

Table III: Influencers of drug use among the respondents (n=368)

Variables	Frequency	Percentages (%)
Friends	115	31.25
Doctors	34	9.24
Seller	88	23.91
Colleague	31	8.42
Family Members	15	4.08
Self	85	23.09

Physiological, psychological effects and related dependence

Some of the respondents reported experiences of having some problems after taking drugs including development of confusion (47/368, 12.77%), fatigue (45, 12.22%), daytime drowsiness (37, 10.05%), anxiety (35, 9.51%) and others. Although, majority (134, 36.41%) of the respondents did not experience any problem. (Figure 4)

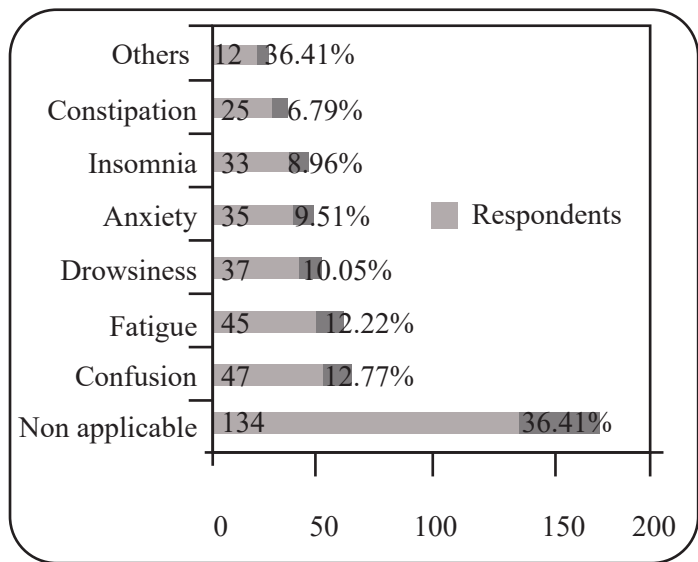


Figure 4: Different side effects experienced by the respondents (n=368)

Among 368 participants with BDZs usage, 336(91.08%) tried to stop taking the drug and remaining 32(8.92%) never tried to do so. Most of the participants (241, 71.73%) trying to stop the drugs faced some withdrawal effects. The most common withdrawal effect among the BDZs users was headache (86, 35.68%). Others faced insomnia (59, 24.48%), confusion (50, 20.75%) and restlessness 46(19.09%). (Table IV)

Table IV: Withdrawal effects of the respondents (n=241)

Withdrawal effect	Frequency	Percentages (%)
Headache	86	35.68
Insomnia	59	24.48
Confusion	50	20.75
Restlessness	46	19.09
Total	241	100.00

Discussion

In the analysis of current survey data, incidence of benzodiazepine (BDZ) use shows 9.24% only prescription followers and predominantly were males (72.83%).

Ojha et al⁷ found in their study that almost all of the respondents were males (91%) and only 9% were female that is similar with the current study. By age, the highest rate of overall benzodiazepine use was among adults aged 31-40 years.

Two different studies reported in Bangladesh shows majority drug users from age group 22-25 years,⁸ and 64.6% between ages 20-24 years.⁹ These findings are very much close to the age group of current study. Again, another study in Bangladesh found almost half (48.0%) of the participants in the age group 30-39 years,¹⁰ with a completely different result.

In 2004, Mahbubur et al found 85.7% respondents get into consuming the drugs under the influence of friends.³ Mahbuba Naznin in 2010 found that 38.75% respondents were influenced by friends in her study.¹¹ Abul Hashem et al mentioned 42.6% respondents were influenced by their peer group or friends.⁹ All the findings strongly support the current research, because the majority (31.25%) of respondents in this study was influenced by their friends.

The most common type of misuse included drugs use without a prescription, although this was more common among younger adults; older adults were more likely to use their benzodiazepine more often than prescribed. Neilsen et al found almost 70% participants used BDZ as a non-prescription drug and the most commonly used drugs were diazepam (55%) and alprazolam (30%) in Queensland, Tasmania, Western Australia and Victoria.¹² But another study from Australia reported 13% respondents used prescribed BDZ.¹³ Misuse of BDZ was reported in 57.2% because of their workload and increasing of patients' stress by Thai doctors.¹⁴ This study reveals only 9.24% respondents taken BDZ based on doctors' prescription in Dhaka city.

Reasons of drug intake were almost common in all studies. Kevin WC et al shows in a survey that the main reasons for using BDZ without a prescription were curiosity (46%), relieving tension or anxiety (41%) and for feeling good (37%).¹ Among the Lebanese BDZ users, 44.4% were taking for relieving anxiety, for insomnia (22.5%) and for depression (16%).¹⁵ Only 17.0% medical students used sedative drugs at some time because of significant psychological stress in King Saud University College of Medicine in 2011.¹⁶ Among all the self-reported BDZ users, 11% tried and 29% had no interest to stop taking drug.¹ Whereas, according to the current study, 91.08% tried to stop uses the BDZ, which is a good sign for future

generation and also for the policy makers. The withdrawal effects were rebound insomnia, anxiety, drowsiness, restlessness, BDZ dependence, etc, which occurred even when doses of drugs were low and consumed over a short period of time as mentioned in two different studies.¹⁷⁻¹⁸

Prescription drug monitoring programs were an important tool to understand misusing of other medications and would thus be at high risk of benzodiazepine misuse.

More studies with large samples should be included to find out the causes of misuse of drug without prescription.

Conclusion:

Benzodiazepines were widely used in a selected area in Bangladesh, with high incidences of misuse. The most common reasons for misuse were self-medication. Strategies for promoting safe and effective use of benzodiazepines should be increasing awareness about the risk associated with their use, improving regulation of their availability and use, and providing education about withdrawal effects.

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