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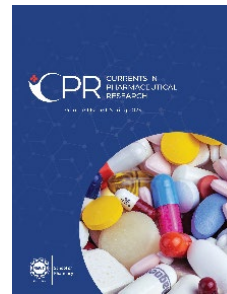
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Awareness about Non-Prescribed Usage of Antidepressants among University Students in Faisalabad, Pakistan

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ABSTRACT

University students are most commonly vulnerable to depression among all the other age groups. Antidepressants are mostly used without proper prescription due to lack of awareness and various other factors like negative attitudes, misconceptions, and lack of education, often impacting the proper utilization of antidepressants. This study aims to gauge the awareness and knowledge of university students regarding the non-prescriptive use of antidepressants and to explore students understanding of the associated side effects. A cross sectional study was performed among 1740 students of both medical and non-medical background from a public sector university, of Faisalabad. Data were collected by using an online questionnaire that contained 26 close ended and 6 demographics-based questions. The questionnaire was designed after thorough discussion with health care professionals. Descriptive statistics were applied in order to analyze the data. The results showed, among total participants (1740), 35.53% agree that females are more prone to depression in comparison to males 18.62%. In terms of economy, 88.28% participants believe that depression badly affects the economy. 92.02% respondents believe that depression remains undiagnosed due to non-cooperative behavior of society and other factors like lack of awareness, and hesitation. Survey showed, 89.06% students do not get any treatment for depression due to lack of awareness. The prevalence of lack of awareness among university students about non prescribed use of antidepressants and their associated side effects was alarming. Universities can take various initiatives to raise the awareness among students regarding non prescribed use of antidepressants like utilization of mobile health apps, establishment of counseling centers, stigma reduction campaigns and collaboration with health services.

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Keywords: Antidepressants, depression, non-prescribed use, online survey, self-medication, side effects university students

1. INTRODUCTION

Psychiatric disorders have significantly prevailed over the past few years, and depression is one of such major disorders. The treatment of depression includes psychotherapy, pharmacological treatment and sometimes a combination of both. Prescribed use of antidepressants should be carefully monitored for proper patient care and to avoid adherence and drug addiction. However, the use of antidepressants is elevated due to pessimistic attitudes, misguided beliefs and lack of education and awareness [1].

Depression is considered as a common mental disorder. It involves a dejected mood and loss of pleasure or interest in routine activities for a long period of time [2]. The characteristic symptoms of all depressive illnesses are sorrow, emptiness, irritability, feeling of excessive guilt or low self-worth along with physical and cognitive alterations which considerably impact a person's ability to carry out daily activities [3]. The exact cause of depression is not clear and some individuals suffering with it show no specific symptoms at all. Approximately 60% of individuals suffering from depression do not seek medical assistance due to social misconceptions. Many students perceive the stigma surrounding mental health issues as unacceptable in social norms. However, there is substantial evidence supporting the effective outcomes of using antidepressants [4].

These days students are struggling to effectively achieve their academic goals. As a result, incidences of mental depression are increasing rapidly worldwide. Students in many privileged and developing countries endure deteriorating mental health situations [5]. Due to family issues, stress at workplace, scholastic failures and uncooperative nature of society, young students are more likely to experience the symptoms of depression. Students who experience depression are more likely to experience various comorbid conditions such as personality problems, boredom, obesity, use of non-prescribed antidepressants, and social challenges [6].

Antidepressant drugs are commonly used to treat depression. If a person has already experienced two or more episodes of depression, antidepressant therapy is continued for at least six months and sometimes for two

continuous years. Many students use antidepressants for quite longer period of time without prescriptions which makes the situation worse [7].

The most effective strategy to reduce mental stress in relation to chronic physical conditions is early prevention through a screening process. In order to prevent later diagnosis and advancement of disease, the urgency of raising awareness about the harms of unprescribed antidepressants among young people must be acknowledged. Proper diagnosis and appropriate referral system for necessary treatment at the early stages minimizes the disease burden [3].

University students frequently experience depression, which interferes with their ability to carry out their everyday tasks [8]. A study conducted in 2013 found that among Pakistani medical college students, 7.5% of students had low levels of stress, 71.67% experienced moderate levels and 20.83% experienced severe stage of stress [9]. In a study regarding medical students in Wah Cantt, Pakistan, anxiety levels (47,7%) were found to be higher than depression (35.1%) [8]. In Karachi, the frequency of depression was reported to be 53.43% among university students. Among the sample population, female students had considerably greater levels of depression (61%) than male students (38.0%) [10].

A cross-sectional study was conducted using an electronic questionnaire, which was distributed among the medical and non-medical university students of Faisalabad, Pakistan. The aim of this study was to evaluate the awareness about non prescribed use of antidepressants and their side effects among the university students in Faisalabad, Pakistan.

2. RESEARCH METHODOLOGY

A cross-sectional online survey was conducted and it remained open for responses from June-September, 2023. The students (n=1740) of Government College University, Faisalabad, Punjab from medical (pharmacy, allied health professions, eastern medicine) and non-medical (arts, social and physical sciences) professional background at undergraduate, master's and Ph.D. level were engrossed for this study. University staff and visitors were excluded. The online survey was used instead of a physical or individual hard form questionnaire because it was cost efficient, fast and convenient to be filled and submitted by the participants. Moreover, it has an edge over physical surveys regarding the real time analysis, thus giving quick and reliable statistical analysis of data.

Considering all these factors, the online form-filling method was adopted to conduct the survey-based research.

The online form or questionnaire was prepared after a detailed discussion with health professionals, clinical pharmacists as well as health care specialists. Previous studies on knowledge and awareness of the non-prescribed use of antidepressants were also reviewed to take guidance for developing the questionnaire in a complete and topically relevant manner. Basic understanding, such as knowledge, attitudes towards antidepressant use, assessment of the hazards of unprescribed antidepressants, was assessed in the questionnaire. Besides the 6 demographical questions, the questionnaire comprised of about 23 close-ended questions regarding the study. The online survey questionnaire form was developed in English language, and the wording was kept simple and easy to comprehend. The responses of the participants were assessed from the evaluation of multiple-choice questions. Some of the questions like frequency of antidepressants, adverse effects experienced, and the causes of depression were provided with more than two or three options to classify the responses of the participants more precisely.

2.1. Data Collection

A Google form containing the research questionnaire was circulated among various WhatsApp groups and in individual messages, to be filled by university students. The data obtained was evaluated by applying descriptive statistics and sociodemographic correlations.

2.2. Data Analysis

The data was examined using descriptive statistics, including mean, median, mode and percentages according to socio-demographic variables.

3. RESULTS

3.1. Socio-Demographic Characteristics of the Students

The data contained a total of 1,758 participants, with female (762) to male (978) ratio of 1 to 1.3. The sample (1740) was recruited from the GC University of Faisalabad, Punjab, so the net response was 99%. The majority of students had above average academic standing 1266 (72.8%) in undergraduate programs (medical fields). The average monthly family revenue of most of the participants 1272 (73.1%) was less than 30,000. The

marital status of a large number of respondents was single. All demographic details of the included participants are given in Table-1.

Table 1. Demographic Status of University Students ($n = 1,740$)

Variable	Number (%)
Gender	
Female	978 (56.2)
Male	762 (43.8)
Age	
18-30 years	1680 (96.6)
31-45 years	60 (3.4)
Education	
Graduate	354 (20.3)
M.Phil.	90 (5.2)
PhD	30 (1.7)
Undergraduate	1266 (72.8)
Academic cadre	
Medical students	1494 (85.9)
Non-medical students	246 (14.1)
Income	
30,000 to 60,000	234 (13.4)
Above 60,000	234 (13.4)
Less than 30,000	1272 (73.1)
Marital status	
Married	162 (9.3)
Unmarried	1578 (90.7)

3.2. Gender-Wise Prevalence of Depression

35.52% (618) students agreed that females were more prone to depression, while 18.62% (324) were in favor of male population. Most of the respondents 798 (45.9%) believed that depression was equally prevalent in males and females. Collectively, it shows that depression is an endemic in both genders.

3.3. Impact of Depression on Economy

88.28% students showed that depression had a greater impact on their economic status and 11.72% respondents contradicted this fact.

3.4. Reasons of Undiagnosed Depression

The difference in attitude and knowledge scores among the university students illustrated that maximum students were dealing with undiagnosed depression. Out of 1740 respondents 92.07% agreed that depression remained undiagnosed in majority of cases. The major concern was to find reasons for non-disclosure of depression. Reported reasons for non-disclosure of depression varied because of unawareness (13.45%), due to society's behavior (45.52%), and hesitation (13.45%). Finally, one may predict several other reasons which may act as barriers to disclosure. The detailed overview of reasons of undiagnosed depression is given in Table-2.

3.5. Treatment of Depression

90.34% students were of the opinion that depression was not properly taken as a disorder and not was treated rightly. 50.69% students were of the opinion that among different age groups, depression is most difficult to treat in teenagers while 38.97% demonstrated it to be treated with difficulty in elderly people. From a treatment point of view, 62.76% students considered a combination of psychotherapy and pharmacotherapy as the best remedial treatment of depression.

3.6. Attitude Towards Antidepressants Use

Results showed that 89.06% students suffering with depression do not seek any treatment. Depression badly affects the mental health of a person, and non-prescribed use of antidepressants without any proper discussion with health care professionals (doctors, and pharmacists) may have a quite lethal impact on physical and mental health of the patient. In terms of attitude, majority of students were positive towards awareness about undesirable effects of non-prescribed antidepressants while 40% were unaware about this fact.

Table 2. Reasons of Undiagnosed Depression among University Students (n=1,740)

Reasons	Number (%)
Due to busy schedule	42 (2.4)
Due to hesitation	234 (13.4)
Due to lack of awareness	672 (38.6)
Due to society behavior	792 (45.5)

3.7. Student Perception Towards Depressed Patients

51.14% students were able to differentiate between a depressed and non-depressed person and 45.14% were unable to differentiate. Majority of students (57.93%) demonstrated that depression is an age-related issue while 42.07% did not agree with this aspect. 73.10% students of our study responded that antidepressants also hinder in learning capabilities.

3.8. Causes of Depression

The major causes of depression in the selected group of students included financial issues (29.6%), career tension (16.6%) and study stress (18.9%). Family issues (6.9%) and non-cooperative behavior of society (22.1%) also added to anxiety and depression. Major causes of depression are presented in Figure 2.

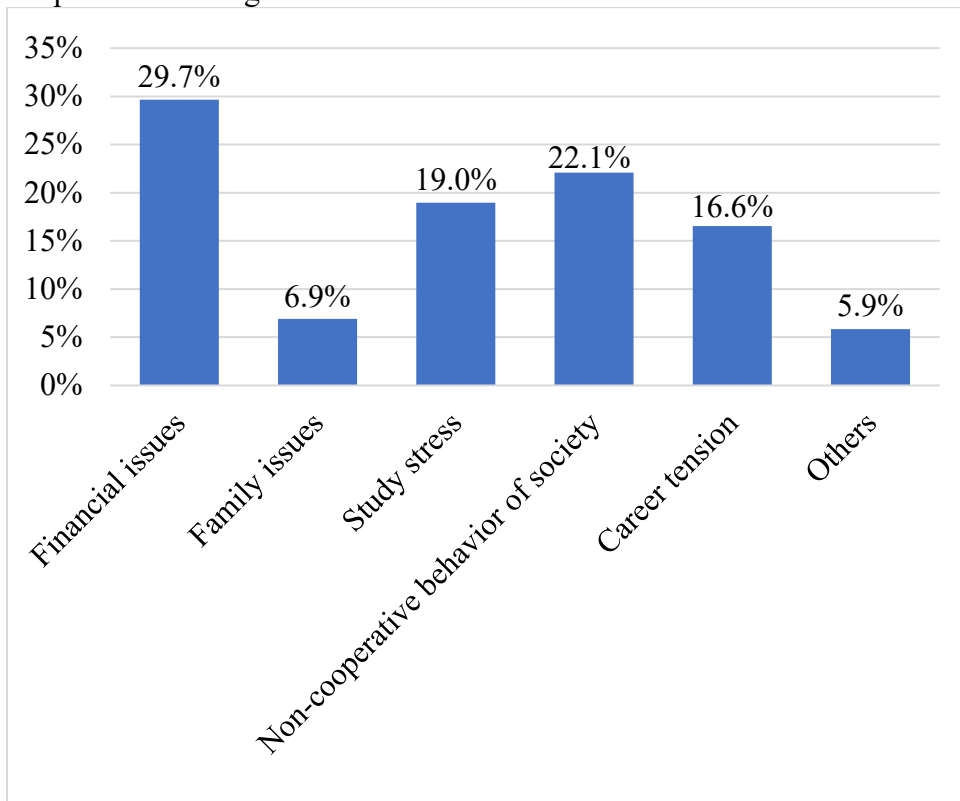


Figure 2. Different Socio-Economics Reasons for Depression Cause among the University Students

3.9. Frequency of Self-Medication Among University Students

Frequency of self-medication among the students demonstrated that 27.24% students practice self-medication once in a month, 24.48% once in a week, 20.34% daily, 14.14% twice in a week, 10.34% twice in a month, and only 3.45% once in a year (Table 4).

Table 4. Self-Medication Frequency of University Students (n=1,740)

Frequency	Number (%)
Daily	354 (20.3)
Once in week	426 (24.5)
Twice in week	246 (14.1)
Once in month	474 (27.2)
Twice in month	180 (10.3)
Once in year	60 (3.4)

3.10. Adverse Effects Experienced

The adverse effects experienced as a result of self-mediation were analyzed and most observed out of these were found to be headache and drowsiness. The data is presented in Figure 3.

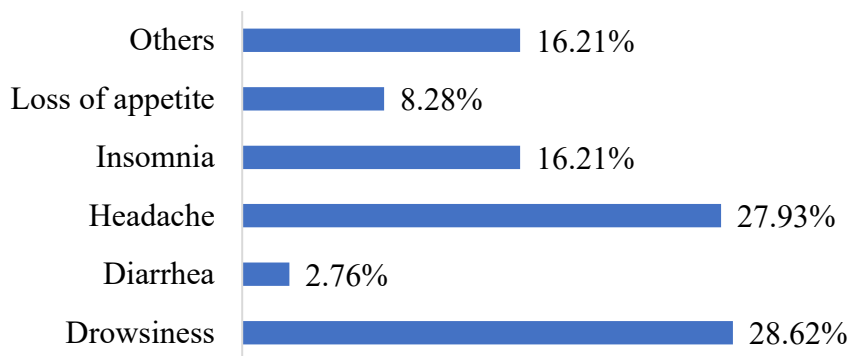


Figure 3. Adverse Effects Experienced on Self-Medication of Anti-Depressants

4. DISCUSSION

Self-medication is a worldwide practice which involves over-the-counter use of medical products that have acquired marketing authorization, and consuming medication without any health care professional's

supervision. Non-steroidal analgesics/anti-inflammatory medications (94.2%) are the most widely used therapeutic category, followed by medication for gastrointestinal disorders or ear-nose-throat disorders (63.5%), nutritional supplements (54%), drugs indicated for skin diseases (31.8%), herbal medicine (20.2%) and anti-allergic drugs (20.2%). The main motivations for self-medication are to strengthen the body, increase immunity and relieve symptoms of various diseases. Overall, 61-81% of users felt self-medication beneficial, especially for enhancing their quality of life. The objective of this study was to evaluate the prevalence of self-medication among university students both from medical and non-medical backgrounds.

In this survey, data was collected from GC University Faisalabad, Punjab, Pakistan, with a response rate of 99%. The intended age rang was 18 to 30 years. A total of 1740 individuals of both genders volunteered to reply (female to male ratio was 1:1.3). According to the data, the majority of participants were in their undergraduate studies and others were postgraduates and PhD scholars. Their marital status was primarily single, with income rate of less than 30,000 [11].

This study sheds light on the issue of self-medication especially for antidepressants among the university students. The findings of the study show the perception of depression conspicuously in both genders. It was found that depression prevails more in females than males [12]. About 45.9% of the participants were of the opinion that depression equally prevails in both genders. It was also found that about 88.28% of the participants were of the opinion that depression was greatly affected by the economy [13]. The prominence of anxiety and depression is widely recognized among university undergraduate students, irrespective of their socio-demographic or cultural status.

It was observed that the majority of individuals suffer from untreated depression. The primary causes of depression among students were lack of sufficient understanding since university students come from varied socioeconomic backgrounds and not everyone has proper guidance about depression. Non-cooperative behavior, hesitancy and hectic schedule are other main causes of the depression among the students [14].

A mental health literacy study conducted in an Indian urban slum indicated that the majority of young women identified friends and parents

as sources of support, while stigma and a lack of knowledge were reported as barriers to seek professional care. Furthermore, access to mental health care is restricted in many parts of the world due to budgetary restrictions, a scarcity of mental health specialists, and poor infrastructure.

Improving access to mental health treatment is crucial for effectively managing depression. It is critical to remember that there is no single answer for treating depression, and determining the best effective treatment plan, which may include a combination of therapy, medicine, and support, may be a difficult and time-consuming task. Educating the public and raising awareness are vital to promote a better comprehension of depression as a genuine medical issue [15].

The statistics revealed that depression is difficult to cure in adolescents and the elderly. The best treatment for depression is a mix of psychotherapy and pharmaceutical medication. Both talk therapy (psychotherapy) and pharmacological therapy is thought to be beneficial for depression, and they are commonly used in combination to address the conditions complexities. Each therapy technique has merits, and the combination method is sometimes referred to as a "biopsychosocial" model, which takes into account biological, psychological and social aspects that contribute to depression. This combination therapy is seen as beneficial for a variety of reasons, including treating multiple components of depression, developing tailored treatment regimens, improving treatment response, reducing recurrence, and accommodating patient preferences. There is evidence that alternative therapies, in addition to pharmaceutical and psychotherapy treatments, can successfully cure depression without causing negative side effects. Mindfulness, meditation, reiki, acupuncture and auriculotherapy are a few examples of such therapies that have demonstrated good outcomes [16, 17].

It was also found that the majority of university students were aware of unprescribed anti-depressant use, and did not receive any type of depression therapy. Other students, who were un-informed, ought to be encouraged and taught about this serious social health concern.

Universities that provide easily available mental health resources, such as counseling services and support groups, can play their role to enhance understanding of mental health concerns and treatment options. When students have access to accurate information, they are more likely to be

aware of the dangers of using non-prescribed medications [18]. The use of social media and internet platforms has the potential to increase awareness. If universities actively participate in mental health discussions through proper forums of social media, students may gain better understanding of the potential dangers of non-prescribed antidepressant use. Additionally, awareness can be shaped by peer conversations. When students openly discuss mental health issues and share information about the risks of non-prescribed antidepressant use, awareness is likely to increase [19].

Students also believe that depression is age-related, and that being depressed is a natural part of aging. Elderly persons are more likely to acquire long-term health conditions such as heart disease, diabetes, and chronic pain. These physical health issues might trigger or aggravate depression. The aging population may experience a variety of losses, such as the passing of loved ones, friends, or spouses, retirement, and changes in physical capabilities [20]. Pain and loss can act as powerful triggers for depression. Cognitive decline, whether caused by dementia or other age-related illnesses, can have an impact on an individual's mood and lead to depressive symptoms. Financial difficulties, especially in retirement, can exacerbate stress and feelings of powerlessness, which are risk factors for depression [21].

Depression is distinguished by negative thought patterns such as self-criticism, pessimism, and a sense of worthlessness. These negative ideas can build a mental barrier that interferes with the learning process, making it difficult to focus on and absorb new knowledge. The major reasons revealed by the university students for adopting self-medication practice include financial issues, their career and their studies [22, 23].

It was also found that the long-term antidepressant usage has an impact on learning capacities. Depression is associated with cognitive deficits such as attention, focus, memory, and higher-level thinking skills. These cognitive barriers can impair the capacity to comprehend and recall new knowledge, limiting effective learning. Depression frequently causes a loss of desire and interest in formerly rewarding pursuits, such as studying. Reduced motivation might result in decreased effort and participation in academic work [22].

According to the study, unfavorable family dynamics, such as discord and a lack of warmth and compassion, can hinder students from getting

familial support, adding onto their difficulty in expressing their emotions, which further causes mental health problems. One of the most commonly reported factors affecting mental illness is the non-cooperative pessimistic behavior of society [24].

This study shows that university students are more likely to indulge into self-medicating behavior. It was found that 1740 individuals reported to be involved in self-medication at some point. Approximately 20% utilized self-medication once a day, 24% once a week, 27% once a month, and 3% once a year. The results showed a significant prevalence of non-prescribed usage of antidepressants. This study also showed that headache, loss of appetite, diarrhea and drowsiness are the most frequent side effects of using antidepressants on self-medication. Counseling centers can be a great initiative that universities can take to improve awareness regarding non prescribed use of antidepressants and to normalize discussion about depression with medical professionals irrespective of the social stigma around it [23]. To follow recommended therapy, medication reminder applications like Calm and Mood apps can be used.²⁴ Informational booths, campaigns and discussions can be launched to normalize the discussion about depression and its proper treatment [25]. Implementation of programs to educate students regarding risks of non-prescribed use of antidepressants and make them sure to seek medical assistance before changing their treatment plan [26].

4.1. Conclusion

The study concludes that self-medication is a severe health concern. It is common among the educated youth of Pakistan (medical and non-medical students). Academic competition is the main factor that motivates people to take psychoactive drugs. Students should be better informed about the dosage, delivery timing, and potential detrimental side effects of self-medication of anti-depressants. Insufficient knowledge can cause other serious health concerns. A thorough strategy is recommended for addressing this issue. Healthcare providers should dedicate more efforts to educate the public about self-medication especially about anti-depressant drugs.

4.2. Future Perspectives

Comprehensive nationwide research should be conducted as part of the future plan in order to gather reliable and accurate epidemiologic data about

every facet of this issue. Additionally, drug regulatory authorities are also required to enforce its regulations, which prohibit the selling of POM without a prescription, so that pharmacists may be more involved in helping people make knowledgeable decisions about their health.

4.3. Study Limitations

This study had some limitations. First, the study was conducted in a specific context, with a relatively small sample size and therefore more studies in different contexts with larger numbers would help to validate or refute the findings. The study was carried out among single university students only. Hence, the study participants may not be representative of other organizations globally and generalization of the findings to other areas should be done with caution. Additionally, short recall period was used to collect information; hence, it might be subjected to recall biases. The analyses were also based on self-report with the possibility of over and under-reporting. Addressing the negative impact of non-prescription use of antidepressants to the general public on large scale is the need of the time to fully rationalize this approach and to study this factor in depth.

CONFLICT OF INTEREST

The authors of the manuscript have no financial or non-financial conflict of interest in the subject matter or materials discussed in this manuscript.

DATA AVAILABILITY STATEMENT

Data will be provided by corresponding author on reasonable request.

FUNDING DETAILS

No funding has been received for this research.

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