

Pharmacy Students' Knowledge of Psychotropic Medicines and Their Attitude Towards Providing Pharmaceutical Care To Patients With Anxiety In Nigeria

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A – research concept and design; B – collection and/or assembly of data; C – data analysis and interpretation; D – writing the article; E – critical revision of the article; F – final approval of article.

Abstract

Background: Healthcare professionals, such as pharmacists, play critical roles in the management of mental disorders by assessing the potential for adverse reactions, providing medication counseling, and medication review optimize treatment regimens.

Objectives: This study aims to assess the knowledge of pharmacy students in a Nigerian university regarding psychotropic medicines and their attitude towards providing pharmaceutical care to patients with anxiety.

Method: A cross-sectional web-based survey was conducted in May 2021 among fourth- and fifth-year pharmacy students in a Nigerian university. The data were summarized using descriptive statistics, such as frequencies and percentages. Chi square was utilized to examine the association between the demographic characteristics and the respondents' overall knowledge and attitude.

Results: The response rate was 85%, as 126 responses were received. About half of the respondents 69 (54.8%) reported that they have received training on psychotropic medicines and 9 (9.1%) have been previously diagnosed with anxiety disorders. Only 53 (42.1%) and 71 (56.3%) of our respondents knew that escitalopram and alprazolam are categorized as anxiolytics respectively. Most respondents would like to talk to patients with anxiety about their medications 110 (87.3%), attend training on pharmaceutical care for patients with anxiety 103 (81.7%), and obtain a medication history for people with anxiety 113 (89.7%). Ninety-four (74.6%) pharmacy students would like to suggest prescription medication for a patient with anxiety and only 88 (69.8%) would like to correct any errors in prescription in any anxiety cases. Our findings also revealed that there is a significant association between the students' attitude and year of study ($p=0.038$) and previous training on psychotropic medicines ($p=0.004$).

Conclusion: Findings from this study suggested that participants require improved knowledge and training of psychotropic medicines.

Keywords: Pharmacy students, Psychotropic medicines, Mental health, public health, Nigeria

INTRODUCTION

Psychotherapeutic or psychotropic drugs are intended to improve the quality of life of people who have been diagnosed with mental disorders (Frank et al., 2005).

Healthcare professionals, such as pharmacists, play critical roles in the management of mental disorders by assessing the potential for adverse reactions, providing

medication counseling, and medication review optimize treatment regimens (Bell et al., 2005; Kamusheva et al., 2020). Pharmaceutical care involves meeting the drug-related needs of patients in order to ensure maximum health outcomes to improve patients' quality of life (Al-Quteimat and Amer 2016). The importance of pharmacists in patient pharmaceutical care cannot be overstated. Psychotropic drugs are essential medications used in the management of anxiety and several other mental health issues. Providing adequate pharmaceutical care, including counselling and monitoring of the patient on psychotropic medicines, with the right attitude is very important to ensure maximum therapeutic outcomes. Even though there is a widespread lack of nationwide data on the prevalence and incidence of anxiety in Nigeria, there are numerous single/multi-center studies on the occurrence of anxiety in various diseases states, the elderly, and people in closed settings among others, which suggest the potentially high prevalence of anxiety in the country (Adejumo et al., 2021; Igbokwe et al., 2020; Osasona and Koleoso 2015). The essential roles of pharmacists in mental healthcare issues such as anxiety have been well-documented in many developed countries (Rubio-Valera et al., 2014) and pharmacy school education forms a critical foundation to acquire knowledge and skills to provide this service. Pharmacists who are well-versed in each psychotherapeutic class can

METHODOLOGY

A cross-sectional web-based survey was done among fourth- and fifth-year pharmacy students in a Nigerian university in May 2021. The survey instrument (online questionnaire made in Google Form) was sent to all the fourth (N=54) and fifth (N=94) year pharmacy students. One of the investigators distributed the questionnaire via the class WhatsApp group (non-probability convenient sampling), and three reminders were sent. Because the class size is small and all interested students can participate in the study, total sampling was embarked on. Before the link was shared, a pre-brief about the study was shared on the WhatsApp group, and a question about informed consent was asked before the respondent could fill out the online form. To ensure the respondent filled in the survey once, they must sign into their Gmail account. First-, second-, and third-year students were excluded because they had not yet been taught pharmacotherapy or completed community/hospital pharmacy rotations. The survey instrument was adapted from a previous study with minor modifications (Al Jomaa et al., 2021) and was tailored to the local situation and the research objective. The drafted survey instrument was reviewed for content validity by the academics with

provide the necessary information to improve mental illness response all the way to remission (Javelot et al., 2021). Several studies have found that healthcare professionals' knowledge is directly related to better pharmaceutical outcomes and lower total healthcare costs (Rajiah et al., 2021; Wong et al., 2020). Additionally, the important roles of pharmacists in providing pharmaceutical care to patients with mental health issues have been well-documented as reported in a systematic review (Finley et 2003).

Without adequate treatment, psychiatric (mental) disorders can lead to one or more suicide attempts or completions, as well as a reduction in the victims' quality of life (Brådvik 2018). Pharmacists and other healthcare providers need to actively seek out information regarding psychotropic drugs in order to adequately educate their patients and patient caretakers about possible risks and associated complications (Bamgboye et al., 2021). In Nigeria, there are still no data on pharmacy students' (future pharmacists) understanding of psychotropic medications and their attitudes about the provision of pharmaceutical care to patients with mental health disorders.

Our study aims to fill this gap by assessing the knowledge of pharmacy students in a Nigerian university regarding psychotropic medicines and their attitude towards providing pharmaceutical care to the patient with anxiety.

quantitative research experience to ensure that the questionnaire items were comprehensive in relation to the study aim and that there were no unclear questions or statements. The final questionnaire contains questions on students' demographics, 10 knowledge statements on some commonly prescribed psychotropic medicines, and 10 attitudes statements on students' attitude towards providing pharmaceutical care to patients with anxiety. The correct answers to the knowledge statement section were properly identified after a thorough review of reference textbooks.

Each knowledge statement was assigned a score of '1' for a correct response and '0' for an incorrect response. Don't Know and disagree response were scored '0'. The overall score for knowledge was calculated by adding the scores for each response. The 'overall knowledge percentage score' was then determined by multiplying each participant's total knowledge score by 10. The cut-off for good knowledge was set at the knowledge percentage of greater and equal to 80% while poor knowledge implies the knowledge percentage was less 80%. A similar approach was used

to characterize attitude, with the threshold for a positive attitude being set at $\geq 80\%$, while a negative attitude was defined as a percentage of less than 80%. The cut-off criteria for the binary categorization were adapted from Bloom's cut-off point criteria, as well as a review of other related studies (Akande-Sholabi and Ajamu 2021; Blooms 2002). All data were imported

RESULTS

A total of 126 responses were received (response rate 85%) and about half of the respondents are males 64 (50.8%) and females 62 (49.2%). Seventy-nine (62.7%) respondents are in their fifth year of study while forty-seven (37.3%) respondents are in their

into Microsoft Excel. To summarize the data, descriptive statistics such as frequencies and percentages were used. The Chi square test was conducted using SPSS version 25 to further understand the association between knowledge and attitudes with the study variables.

fourth year. About half of the respondents 69 (54.8%) reported that they have received training on psychotropic medicines and only 9 (9.1%) have been previously diagnosed with anxiety disorders (Table 1).

Table 1: Respondents' socio-demographic data

| Variables | Frequency (n) | Percentage (%) |
|--|---------------|----------------|
| Sex | | |
| Male | 64 | 50.8 |
| Female | 62 | 49.2 |
| Year of study | | |
| 4 th | 47 | 37.3 |
| 5 th | 79 | 62.7 |
| Previous training on psychotropic medicines | | |
| Yes | 69 | 54.8 |
| No | 57 | 45.2 |
| Ever been diagnosed with anxiety disorders | | |
| Yes | 9 | 7.1 |
| No | 117 | 92.9 |

Table 2 revealed responses to the knowledge statement regarding psychotropic medicines by pharmacy students. Majority of respondents correctly answered that diazepam is an anxiolytic 114 (90.5%) and that there are pharmacological treatments for anxiety 113 (89.7%). Only 53 (42.1%) and 71 (56.3%)

respondents knew that escitalopram and alprazolam are categorized as anxiolytics respectively. Under a third knew that venlafaxine 30 (23.8%), quetiapine 34 (27.0%), and vortioxetine 18 (14.3%) are anxiolytic. **Figure 1** also revealed the overall knowledge percentage of the respondents.

Table 2: The knowledge of pharmacy students on psychotropic medications (n=126)

| Knowledge Statements | Yes (%) | No (%) | Don't know (%) |
|--|------------|------------|----------------|
| Diazepam is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 114 (90.5) | 6 (4.8) | 6 (4.8) |
| Venlafaxine is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 30 (23.8) | 26 (20.6) | 70 (55.6) |
| Risperidone is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 57 (45.2) | 53 (42.1) | 16 (12.7) |
| Escitaprolam is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 53 (42.1) | 25 (19.8) | 48 (38.1) |
| Alprazolam is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 71 (56.3) | 8 (6.3) | 47 (37.3) |
| Quetiapine is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 34 (27.0) | 42 (33.3) | 50 (39.7) |
| Vortioxetine is categorized as anxiolytic (<i>Correct Option: Yes</i>) | 18 (14.3) | 40 (31.7) | 68 (54.0) |
| No pharmacological treatment for anxiety (<i>Correct Option: No</i>) | 10 (7.9) | 113 (89.7) | 3 (2.4) |
| Lithium is an anti-anxiety medication (<i>Correct Option: No</i>) | 64 (50.8) | 45 (35.7) | 17 (13.5) |
| Anticholinergics are drug of choice for long-term anti-anxiety (<i>Correct Option: No</i>) | 32 (25.4) | 66 (52.4) | 28 (22.2) |

The responses of the pharmacy students to the attitude statements regarding providing pharmaceutical care to patients are shown in Table 3. Majority of the respondents would like to talk to patient with anxiety in a private area about his/her medication 110 (87.3%), attend training on pharmaceutical care for patients with anxiety 103 (81.7%) and obtain a medication

history for people with anxiety 113 (89.7%). Ninety-four (74.6%) pharmacy students would like to suggest prescription medication for patients with anxiety and only 88 (69.8%) would like to correct any errors in prescription in any anxiety cases. **Figure 1** also revealed the overall attitude percentage of the respondents.

Table 3: Attitudes of pharmacy students towards providing pharmaceutical care to patients with anxiety.

| Variable | Agree (%) | Disagree (%) |
|---|------------|--------------|
| I can pay to attend training on pharmaceutical care for patients with anxiety (<i>Agree = Positive attitude</i>) | 103 (81.7) | 23 (18.3) |
| I can talk to a patient with anxiety in a private area about his/her medication (<i>Agree = Positive attitude</i>) | 110 (87.3) | 16 (12.7) |
| I can suggest changes in dosage of anxiolytics prescribed by a doctor (<i>Agree = Positive attitude</i>) | 79 (62.7) | 47 (37.3) |
| I can give person with anxiety disorders enough time to discuss his/her medications (<i>Agree = Positive attitude</i>) | 120 (95.2) | 6 (4.8) |
| I can suggest prescription medications in anxiety (<i>Agree = Positive attitude</i>) | 94 (74.6) | 32 (25.4) |
| I can correct any errors in prescription in any anxiety cases (<i>Agree = Positive attitude</i>) | 88 (69.8) | 38 (30.2) |
| I can monitor the efficacy of anxiolytics (<i>Agree = Positive attitude</i>) | 107 (84.9) | 19 (15.1) |
| I can monitor the adverse effects of anxiolytics (<i>Agree = Positive attitude</i>) | 109 (86.5) | 17 (13.5) |
| I can obtain a medication history for people with anxiety (<i>Agree = Positive attitude</i>) | 113 (89.7) | 13 (10.3) |
| I am confident that I can provide comprehensive pharmaceutical care to patients with anxiety (<i>Agree = Positive attitude</i>) | 84 (66.7) | 42 (33.3) |

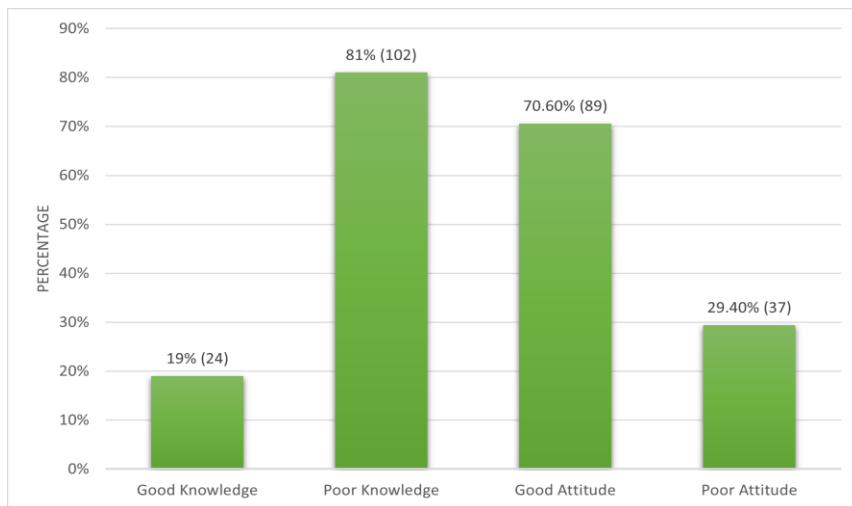


Figure 1: Overall knowledge and attitudes of the respondents (n=126)

Table 4 revealed the test of association between the demographic variables and the overall knowledge of the respondents. There is no association between the

knowledge and sex, year of study, previous training on psychotropic medicines and whether the respondents have been previously diagnosed with anxiety disorders.

Table 4: Association between knowledge and the respondents' socio-demographic characteristics (n=126)

| Variables | Knowledge | | χ^2 | p-value |
|--|-----------|-----------|----------|---------|
| | Good (%) | Poor (%) | | |
| Sex | | | | |
| Male | 15 (23.4) | 49 (76.6) | 1.626 | 0.202 |
| Female | 9 (14.5) | 53 (85.5) | | |
| Year of study | | | | |
| 4 th | 12 (25.5) | 35 (74.5) | 2.044 | 0.153 |
| 5 th | 12 (15.2) | 67 (84.8) | | |
| Previous training on psychotropic medicines | | | | |
| Yes | 12 (17.4) | 57 (82.6) | 0.271 | 0.602 |
| No | 12 (21.1) | 45 (78.9) | | |
| Ever been diagnosed with anxiety disorders | | | | |
| Yes | 1 (11.1) | 8 (88.9) | 0.398 | 0.529 |
| No | 23 (19.7) | 94 (80.3) | | |

*Statistically significant at p<0.05

Table 5 revealed a significant association between attitude and year of study (p=0.038) and whether the respondents have previous training on psychotropic

medicines (p=0.004). There is no association between attitude percent and sex, knowledge percent and whether the respondents have been previously diagnosed with anxiety disorders.

Table 5: Association between attitude and the respondents' socio-demographic characteristics (n=126)

| Variables | Attitude | | χ^2 | p-value |
|--|--------------|--------------|----------|---------|
| | Positive (%) | Negative (%) | | |
| Sex | | | | |
| Male | 48 (75.0) | 16 (25.0) | 1.195 | 0.274 |
| Female | 41 (66.1) | 21 (33.9) | | |
| Year of study | | | | |
| 4 th | 28 (59.6) | 19 (40.4) | 4.421 | 0.038* |
| 5 th | 61 (77.2) | 18 (22.8) | | |
| Previous training on psychotropic medicines | | | | |
| Yes | 56 (81.2) | 13 (18.8) | 8.145 | 0.004* |
| No | 33 (57.9) | 24 (42.1) | | |
| Ever been diagnosed with anxiety disorders | | | | |
| Yes | 6 (66.7) | 3 (33.3) | 0.074 | 0.721 |
| No | 83 (70.9) | 34 (29.1) | | |
| Knowledge | | | | |
| Good | 19 (79.2) | 5 (20.8) | 1.040 | 0.308 |
| Poor | 70 (68.6) | 32 (31.4) | | |

*Statistically significant at p<0.05

DISCUSSION

While our respondents showed suboptimal knowledge of psychotropic medicines in general, most of the pharmacy students displayed a positive attitude towards providing pharmaceutical care to patients with anxiety. This is, to the best of our knowledge, the first study to demonstrate the knowledge of pharmacy students regarding psychotropic medications and their attitude toward delivering pharmaceutical care to patients with anxiety in Nigeria; hence, it can serve as a benchmark for future research.

The knowledge deficit among the respondents corroborates findings among pharmacy students in Jordan (Al Jomaa *et al.*, 2021), South Florida (McKee *et al.*, 2015), and France (Balayssac *et al.*, 2018). A reported commentary in Nigeria also revealed that knowledge deficit is responsible for the limited services rendered to patients with mental health issues by pharmacists (Bamgboye *et al.*, 2021). Additionally, half of the respondents 69 (54.8%) reported that they have received training on psychotropic medicines. This response could be due to recall bias by some of the students, as all students are supposed to attend the same classes and cover all content of the curriculum. Notwithstanding, it is not surprising that a lack of previous training on psychotherapy could be responsible for the suboptimal knowledge demonstrated by our respondents. Unfortunately, poor knowledge of mental health could also drive stigma towards patients (Bell *et al.*, 2010). This research also supports the fact that the low level of knowledge among the fourth- and fifth-year pharmacy students suggest the need to re-examine and re-evaluate the psychotherapy contents of the pharmacy school curriculum. The significant low level of knowledge reported in the study may also imply the need to introduce psychotherapy courses early in the pharmacy school education in order to improve the

CONCLUSION

Our study showed suboptimal knowledge of psychotropic medicines and considerable positive attitudes towards providing pharmaceutical care to patients with anxiety. It is time to invest in the training

ETHICAL CONSIDERATIONS

Institutional Review Board of the University of Ibadan and University College Hospital granted ethical approval for the study (UI/EC/21/0178).

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students' overall learning time on the topics. This intervention is pertinent as there is a significant increase in mental health issues in Nigeria and the essential roles of pharmacists cannot be de-emphasized.

Our findings showed that there is a significant association between the students' attitude and year of study and previous training in psychotropic medicines. Fifth year students and students with previous training tend to have a positive attitude towards providing pharmaceutical care to patients living with anxiety. This implies that pharmacy students who have a good knowledge of psychotropic medicines are likely to provide mental health support services to their patients. Even though many of the respondents displayed positive attitudes towards providing pharmaceutical care to patients with anxiety, they showed less confidence regarding decision making on psychotropic medicines, and knowledge gap may be responsible for this. In a country with pervasive mental health issues, (Wada *et al.*, 2021) this is a wake-up call to develop strategies to improve pharmacy students' knowledge regarding psychotropic medicines, since the role of pharmacists in providing mental healthcare services cannot be de-emphasized.

Our research is not devoid of limitations. This is a single-center university study that may not be representational of all Nigerian pharmacy students. However, our study still offers key insight on the topic and can serve as a frame of reference for future studies. The results may be a subject to recall bias, whereby participants under-reported whether they had received training on psychotropic medications or not. Furthermore, the questionnaire does not cover all psychotropic medications; however, the medications included were those that are commonly dispensed in Nigeria.

of future pharmacists to meet the country's need of providing services to patients with anxiety and other mental health issues.

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