West African Journal of Pharmacy (2021) 32 (2) 113 - 123

Cheating in Pharmacy Schools in Southwest Nigeria

Wilson O. Erhun, Ayodapo O. Jegede, Daniel O. Emmanuel

Department of Clinical Pharmacy and Pharmacy Administration,
Faculty of Pharmacy, Obafemi Awolowo University, Ile-Ife, Osun, Nigeria

Corresponding author: Ayodapo O. Jegede
Email: dapojegede@oauife.edu.ng, Phone: +2347066415687

ABSTRACT

Background: There are concerns that academic dishonesty among students in the health sciences will result in lower competence and continued unethical behaviors after graduation. Pharmacy as a profession has a very low tolerance for errors and therefore an investigation to examine dishonest practices among undergraduate students is important.

Objectives: This study sought to determine cheating behaviors among pharmacy students, identify the course(s) in which the students cheat the most, and examine the contributions of lecturers to academic dishonesty.

Methods: The study was a cross-sectional survey of pharmacy students (330) in four pharmacy schools in southwest Nigeria. A set of Semi-Structured questionnaires were developed and pretested before administration. The questionnaire elicited information to answer the research questions. Data collected were analysed with appropriate descriptive and inferential statistics at $p < 0.05$.

Results: Three out of ten students that participated in the study admitted to cheating in pharmacy school. Cheating in pharmacy school was associated with cheating in high school ($p = 0.000$) and UTME/ post UTME ($p = 0.000$). The courses majority of students cheated in or have been attributed to high rate of cheating by pharmacy students were pharmaceutical chemistry (27.3%) and pharmacognosy (22.6%). Lecturers were found to have contributed to academic dishonesty by not teaching in a way that aided understanding (94.0%), not being approachable for practice questions (90.2%) and not invigilating examinations properly (78.5%).

Conclusion: Academic dishonesty is a reality in pharmacy schools and students who have cheated before in high school and UTME are more likely to cheat in pharmacy school. Also, lecturers contribute to academic dishonesty among students.

Keywords: Predictors, Pharmacy, Cheating, Academic dishonesty, Southwest Nigeria.

La tricherie dans les écoles de pharmacie du sud-ouest du Nigeria

Wilson O. Erhun, Ayodapo O. Jegede, Daniel O. Emmanuel

Département de pharmacie clinique et d'administration pharmaceutique, Faculté de pharmacie, Université Obafemi Awolowo, Ile-Ife, Osun, Nigeria

Auteur correspondant : Ayodapo O. Jegede
Email : dapojegede@oauife.edu.ng Téléphone : +2347066415687

RÉSUMÉ

Contexte : On craint que la malhonnêteté académique parmi les étudiants en sciences de la santé n'entraîne une baisse de compétence et, par la suite, des comportements contraires à l'éthique après l'obtention du diplôme. La pharmacie, en tant que profession, a une tolérance très faible pour les erreurs et, par conséquent, une enquête visant à examiner les pratiques malhonnêtes chez les étudiants de premier cycle est importante.

Objectifs : Cette étude a cherché à déterminer les comportements de tricherie parmi les étudiants en pharmacie, à identifier les cours dans lesquels les étudiants trichent le plus et à examiner les contributions des enseignants à la malhonnêteté académique.

Méthodes : L'étude était une enquête transversale auprès d'étudiants en pharmacie (330) dans quatre écoles de pharmacie du sud-ouest du Nigeria. Un ensemble de questionnaires semi-structurés a été développé et pré-testé avant d'être administré. Le questionnaire a permis de recueillir des informations pour répondre aux questions de la recherche. Les données recueillies ont été analysées à l'aide de statistiques descriptives et inférentielles appropriées à $p < 0,05$.

Résultats : Trois étudiants sur dix qui ont participé à l'étude ont admis avoir triché à l'école de pharmacie. La tricherie à l'école de pharmacie était associée à la tricherie au lycée ($p = 0,000$) et aux examens et concours d'entrée à l'université, UTME/post UTME, ($p = 0,000$). Les cours dans lesquels la majorité des étudiants ont triché ou auxquels les étudiants en pharmacie ont attribué un taux élevé de tricherie sont la chimie pharmaceutique (27,3%) et la pharmacognosie (22,6%). Les enseignants ont contribué à la malhonnêteté académique en n'enseignant pas de manière à faciliter la compréhension (94,0 %), en n'étant pas accessibles pour des questions pratiques (90,2 %) et en ne surveillant pas correctement les examens (78,5 %).

Conclusion : La malhonnêteté académique est une réalité dans les écoles de pharmacie et les étudiants qui ont déjà triché au lycée et à l'UTME pour entrer à l'université sont plus susceptibles de tricher à l'école de pharmacie. En outre, les enseignants contribuent à la malhonnêteté académique chez les étudiants.

Mots-clés : Prédicteurs, pharmacie, tricherie, malhonnêteté académique, sud-ouest du Nigeria.

INTRODUCTION

The practice of any form of dishonesty in a formal academic exercise is referred to as academic dishonesty. Being honest and possessing strong moral principles is a sign of integrity. Being a person of integrity is key to achieving great things in life, and to being successful. Although upholding consistent moral and ethical standards is a matter of choice, it is a virtue. Dishonesty may be able to give instant gratification, but it will never last, and people who engage in such behaviors are less trusted by others.

Throughout history, academic dishonesty has been studied at different educational levels, from the lowest levels of primary education up to tertiary level.[1] The practice of academically dishonest behaviors is common across various age groups, all cultures and several educational contexts.[2] Academic fraud and Plagiarism have been seen as the two major aspects of academic dishonesty by the University of Newcastle. Making of a false representation directed at gaining an advantage which is unmerited is referred to as academic fraud and the presentation of another person's thoughts as one's own is plagiarism.[3]

However, cheating has been more specifically defined in literature studies. Asides the use of techniques that are unethical to obtain answers which is a characteristic of all forms of cheating, differences abound in the methods by which those answers are obtained.[4] Academic dishonesty has become a menace in the educational system and the rate at which this behavior spreads is a cause for concern as many students have admitted to different reasons why they cheat.[5] A lot of studies have shown an inverse relationship exist between the academic ability of students and their engagement in academically dishonest behaviors, with students with lower academic ability reporting more cheating than students with higher academic ability.[6,7] It has been generally argued that the reason for the engagement of lower achieving students in academic cheating is to get higher grades in their courses, whereas there is a lower tendency that higher ability students cheat to succeed.[8] However, as noted by Miller and her colleagues, there is a complex relationship between ability and cheating, since measures of ability somewhat differs across studies.[9] Also, it has been shown by some studies that feeling pressured to succeed as well as to protect one's academic performance is a very possible driving force for high flying students to cheat.[10] Therefore, students who perform well in school academically may cheat in order to keep performing well, or to keep receiving privileges meant to students that perform well.

Academic dishonesty behaviors could be brought about by several factors some of which could be students being pressured by their peers to engage in such acts either by forcing them to work together on an assignment or splitting the assignment amongst themselves, even when the lecturer who gave them the assignment specifically warned against collaboration or even going further to help each other in an exam. Students may cheat in order to avoid failure in a particular course, this occurs due to anxiety about the course, therefore making anxiety another factor. Another factor is the fact that some students find it difficult to establish a balance between their academic and social life, leading to them not being able to meet deadlines and may end up cheating or engaging in plagiarism. Lecturers could also play a role in academical dishonesty, even though they are knowledgeable about the subject matter they are to teach, some lecturers are not able to deliver a good lecture, leaving the students to learn on their own and some of them result to cheating if they eventually find the topic not being comprehendible.

University students are fundamentally required to possess academic integrity and this virtue is of great importance in all University programs. Professional degree programs such as pharmacy, medicine, nursing very much require academic honesty, as ethical principles of high levels are expected to be possessed by students in such disciplines. A particular study showed that students in disciplines within health care were found to be willing to cheat and even do so frequently in order to achieve progress in their academics, which corroborates the study of Rennie and Crosby which revealed that medical students (56%) indicated their willingness to engage in behaviors identified as dishonest by the university.[11,12] There is a greater likelihood for students of healthcare professions who cheat in the classroom to cheat after graduation when involved in actual patient care activities; for example, falsifying patient information or not performing a procedure but going ahead to report findings as normal despite not performing it, and this may continue even throughout their career.[11,13,14]

Most of the students in a study by Austin et al. agreed to being involved in academic dishonesty during their academic study, and suggested that sometimes, this was due to having a curriculum that was filled with irrelevances, out-of-touch with practice, and not related to the self-identified needs of the learners'.[15] Aggarwal et al. discovered that ''hierarchy of values'' exists amongst

students in which they viewed dishonesty in coursework (such as inventing laboratory data or connivance in completing an assignment) not as serious as dishonesty in major examinations.[16]

It has been revealed by several researches carried out on academic dishonesty that 90% of undergraduate students cheat.[14,17] Students at every academic level cheat and it has also been shown that most of these students believe that cheating is needed in order to be successful in today's world.[18]

This study determined cheating behaviors among pharmacy students, identified the course(s) the students cheat the most and examined the contributions of lecturers to academic dishonesty.

METHODS

This was a cross-sectional survey of pharmacy students from the four Pharmacy schools in Southwest Nigeria. The schools are Obafemi Awolowo University, Olabisi Onabanjo University, University of Ibadan and University of Lagos. The study was carried out from April 2019 to December 2019. The total number of students in School A, B, C and D (to maintain anonymity) were 561, 345, 391 and 560 respectively. The total population of students in the four schools was 1,857 from which a sample size of 330 was calculated using Taro Yamane formula for finite populations. An attrition rate of 20% was factored in to obtained a new sample size of 396.[19] Stratified random sampling was used for the sample size selection across the different levels of the four schools. Table 1 shows the calculated sample size for each class in each school.

A pretested questionnaire, adapted from the study of Ip *et al*. was used as instrument for the study.[20] The questionnaire had four sections with the first section eliciting demographic information from respondents. Section B inquired about cheating history, awareness and specific examples of academic dishonesty. Section C obtained information about pharmacy courses in which students cheat the most, while Section D elicited information on the contribution of lecturers to academic cheating. Sections C and D were not included in the original instrument but were added to achieve the study objectives. The items in Section D were measured on a Likert scale of agreement with alternative responses of strongly disagree, disagree, neutral, agree and strongly agree with weighting scores of 1-5 respectively.

Data collection involved online administration of the instrument which comprised close ended questions based on the research questions. The 39-item questionnaire was divided into two sections apart from the section eliciting demographic information (age, gender and level of study). The first section sought information about cheating history, activities, and courses in which students cheat the most, while the second section was designed to obtain information about how lecturers influence cheating behaviour.

Data were collected through google forms and hard copy questionnaires and were analyzed using Statistical Package for the Social Sciences (SPSS version 20) for appropriate descriptive statistics like frequencies, percentages and median. Inferential statistics like correlations was used to determine the relationship between those who have ever cheated in Pharmacy school and those who cheated in high school and/or UTME/Post UTME, while Kruskal Wallis test was used to check for statistical significance in the variation of the influence of teaching on academic dishonesty across the four schools ($p < 0.05$).

Table 1: Sample size according to the level of study of respondents across the Faculties of Pharmacy

Name of School	200 level		300 level		400 level		500 level		Total	
	N	n	N	n	N	n	N	n	N	n
School A	216	39	111	20	126	22	108	19	561	100
School B	119	21	80	14	56	10	90	16	345	61
School C	132	23	78	14	90	16	91	16	391	69
School D	117	21	131	23	152	27	160	29	560	100

N: Population **n: Sample size**

RESULTS

The results of the socio demographic distribution characteristics of the students are shown in Table 2. The highest number of respondents were from School A (126, 31.9%). There were more females (52.2%) in the study than males (47.8%) and most of the respondents were between the ages of 19-22 years (54.7%) and the least were 27 years and above (1.5%). Even though the numbers did not differ too widely for the respondents sampled from each level across the schools, most of the respondents were from the 200 level (27.6%).

Table 2. Demographic Characteristics of Respondents Across the Types of Schools (Undergraduates)

Variable	Category	Frequency	Percent (%)
Name of school	SCHOOL A	126	31.9
	SCHOOL B	83	21.0
	SCHOOL C	86	21.8
	SCHOOL D	100	25.3
	Total	395	100.0
Gender	Female	206	52.2
	Male	189	47.8
	Total	395	100.0
Age range (Years)	15-18	66	16.7
	19-22	216	54.7
	23-26	107	27.1
	≥27	6	1.5
	Total	395	100.0
Level	200	109	27.6
	300	87	22.0
	400	98	24.8
	500	101	25.6
	Total	395	100.0

Figure 1 shows that three in ten students have cheated in Pharmacy school (28.1%) while four in ten agreed to have cheated in high school (38.2%). Two in ten students stated that they have cheated in UTME or post UTME (19.2%). Most of the students (84.1%), however, claimed that they were aware that other pharmacy students cheat during examinations and tests. Almost all of the students (97.0%) claimed to have neither used an unauthorized electronic device nor hidden notes during a written or electronic examination in pharmacy school. Most of the students claimed not to have ever used hidden notes during a written or electronic examination (93.7%). However, majority of the respondents stated that they have asked someone for the answer during a written or electronic examination (58.2%), have asked a peer for details regarding content of an oral/practical examination (70.4%), have offered details to a peer regarding content of an oral/practical examination (75.4%), and have copied another students' lab report with (89.9%) or without (54.7%) the students' permission. About seven in ten students stated that they have copied directly from reference sources before without acknowledging source or citing appropriately (74.7%) and also have fabricated data for a practical laboratory in pharmacy school (74.9%).

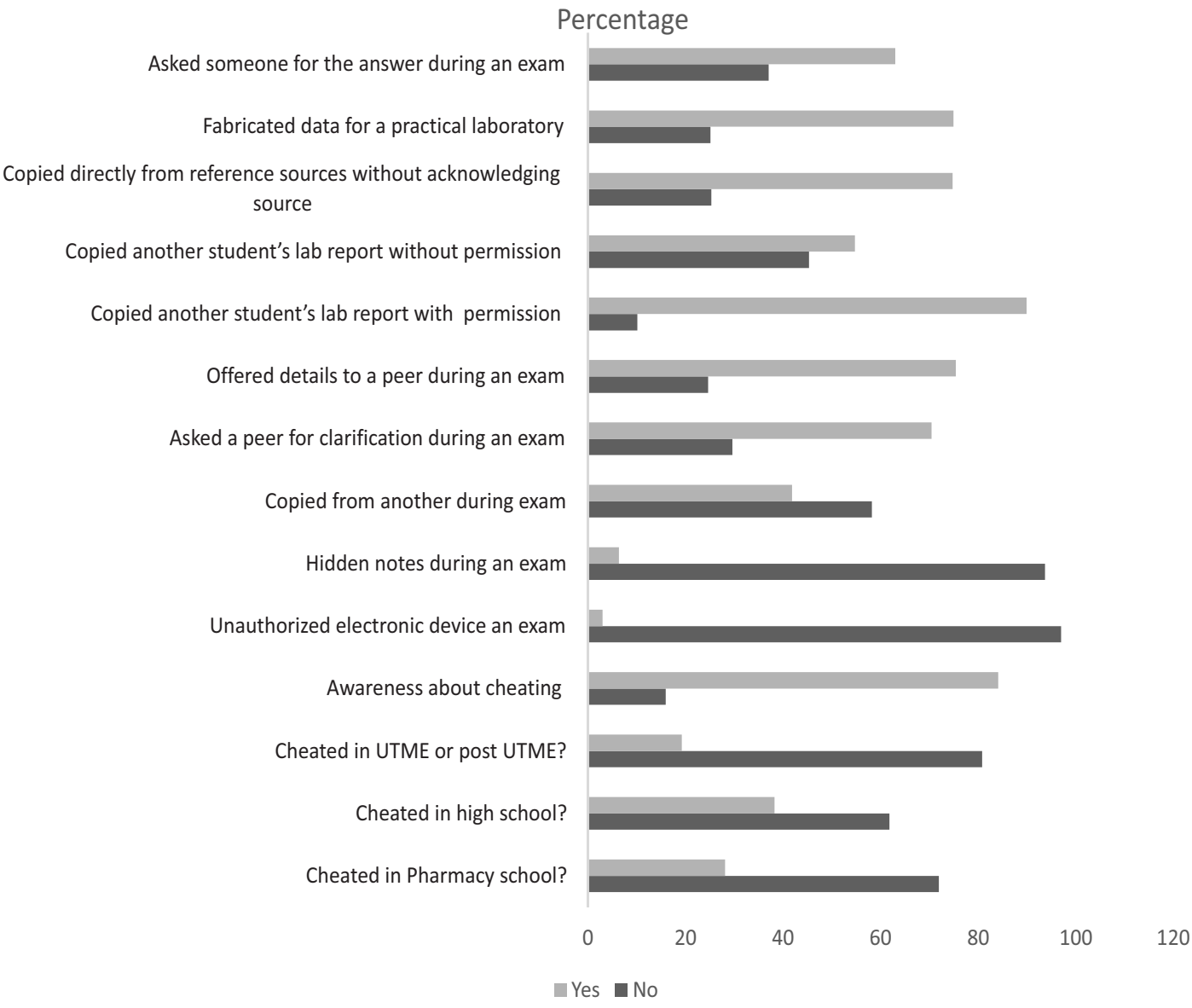

Figure 1: Cheating History, Awareness and Specific Examples of Academic Dishonesty

Table 3 shows a strong correlation between those who have cheated in high school and those who have cheated in pharmacy school (p = 0.00) and also between those who have cheated in UTME/post UTME and those who have cheated in pharmacy school (p = 0.00).

Table 3: Correlation between those who have ever cheated in Pharmacy school with those who cheated in high school and UTME/Post UTME

		Have you ever cheated in high school?	Have you ever cheated in UTME or post UTME?
Have you ever cheated in Pharmacy school?	Pearson Correlation	.401**	.238**
	Sig. (2-tailed)	.000	.000
	N	395	395

** Correlation is significant at the 0.01 level (2-tailed)

The courses in which cheated the most as seen in Figure 2 was Pharmaceutical Chemistry (27.3%) followed by Pharmacognosy (22.6%), the least being Clinical Pharmacy and Pharmacy Administration (4.8%) (Figure 2).

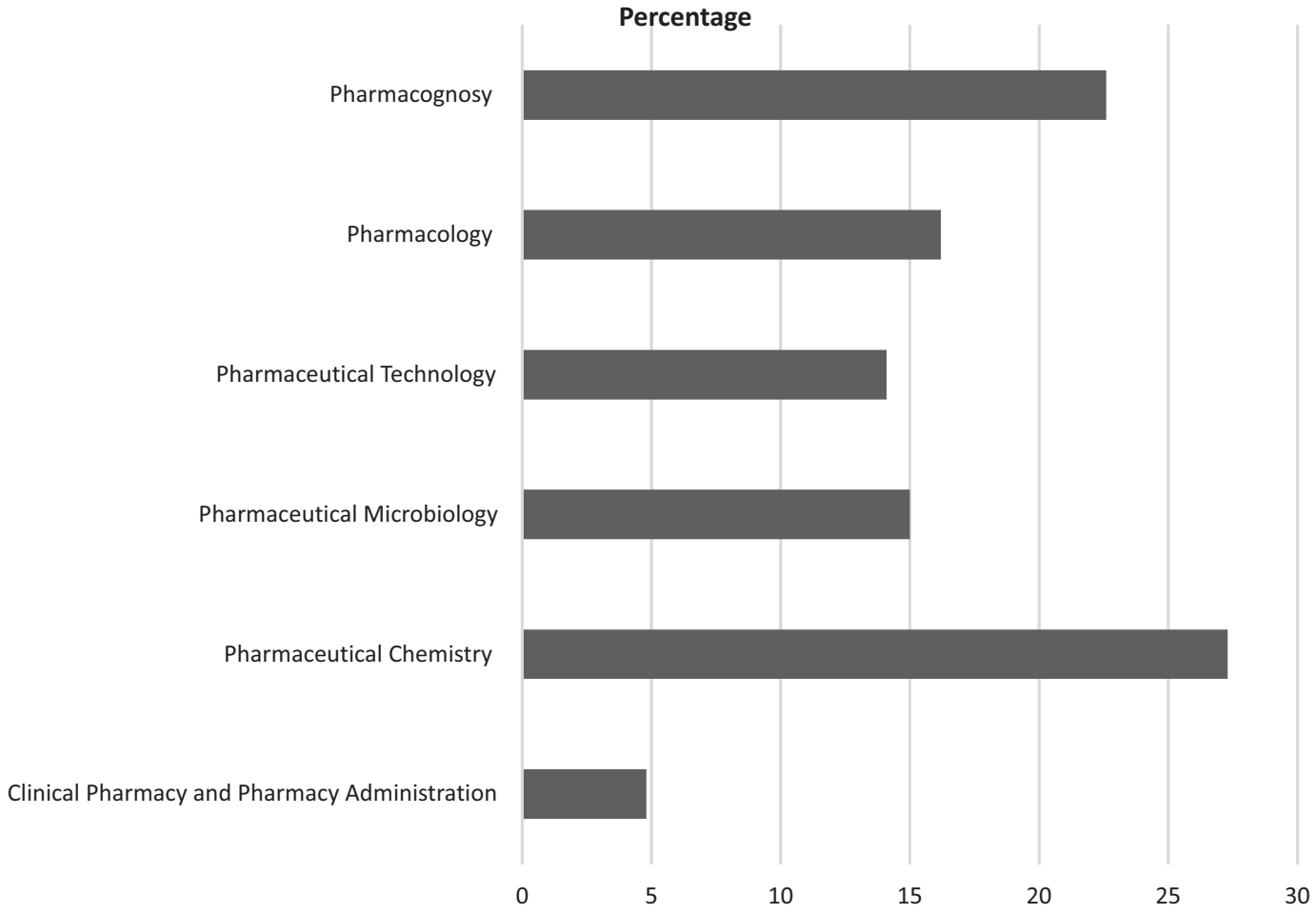

Figure 2: Pharmacy Courses in which Students Cheat the Most

Table 4 shows Teaching Influence on academic dishonesty. A median value of 4 was calculated for all the statements in this category, this shows that majority of the students agreed to them. From the results of the Chi square test, it was observed that all results obtained except those for cheating being less likely if teacher is approachable for questions and cheating being less likely in a course when students have a complete understanding of the course, were significant across the schools with chi square values less than 0.05.

Table 4: Contribution of Lecturers to Academic Cheating

Variables	**Median**	***Kruskal-Wallis Value***
It is easier to cheat in smaller classes i.e., where there isn't enough space between students	4	0.001
It is more difficult to cheat when paper types differ	4	0.000
Cheating is less likely when lecturers give students clear learning objectives and focus	4	0.000
Cheating is less likely in a course when students have a good understanding of the course	4	0.054
Cheating is more likely with an incompetent teacher or lecturer	4	0.013
Cheating is less likely if invigilators are available for proper invigilation during tests and exams	4	0.008
Cheating is less likely if teacher is approachable during course work for questions	4	0.712

Key:
1= Strongly Disagree 2= Disagree 3= Neutral 4= Agree 5= Strongly Agree

The Kruskal Wallis test showed that there was a statistically significant difference in 'cheating is less likely if invigilators are available for proper invigilation' $\chi 2$ (3) = 11.791, p = .008, with a mean rank score of 188.22 for School A, 173.20 for School B, 212.41 for School C and 218.52 for School D. Also, significance was observed for 'cheating is more likely with an incompetent teacher or lecturer' $\chi 2$ (3) = 10.738, p = .013, with a mean rank score of 191.83 for School A, 218.96 for School B, 172.55 for School C and 210.28 for School D. The test however showed no significance for 'cheating less likely when students have a good understanding of the course' $\chi 2$ (3) = 7.638, p = .054, with a mean rank score of 192.87 for School A, 216.87 for School B, 177.12 for School C and 206.75 for School D. It also showed no significance for 'cheating less likely when lecturer is approachable during coursework for questions' $\chi 2$ (3) = 1.374, p = .712, with a mean rank score of 198.88 for School A, 202.80 for School B, 187.60 for School C and 201.86 for School D.

DISCUSSION

Several studies have been previously carried out in other countries but very few in Nigeria. The study sought to determine cheating behaviors among pharmacy students in Nigeria, course(s) they cheat the most, contributions of lecturers to academic dishonesty and adopted a student-centered approach in assessing these. Very few pharmacy students in the study admitted to cheating in pharmacy school, two other studies also reported similar results and suggested that certain academically dishonest behaviors may not be viewed by students as cheating and may even be considered as a normal behavior.[20,21] Similar results were obtained for those who had cheated before in high school, UTME or post UTME. A relationship was found to exist between those who have cheated before in high school and UTME or post UTME which agrees with the study of Ip et al. that cheating in the past predicts future cheating in pharmacy school. Also, Harding *et al*. noted that for correlation to exist between cheating in high school and cheating in college, then there are other factors at play in a student's decision to cheat asides situational factors.[22] This might include an inherent tendency in the student to steal, tell lies, abuse alcohol etc.

Since most students admitted to involvement in other forms of academic dishonesty not linked directly with written or electronic examinations and tests, it shows that most of them did not consider activities like asking a peer for details regarding content of an oral/practical examination, offering details to a colleague regarding content of an oral/practical examination, copying another students' lab report with or without the students' permission, copying directly from reference sources without acknowledging source or citing appropriately and fabricating data for a practical laboratory, as academic dishonest behaviors.[23] Ubaka *et al*. also noted that students cheated more in their course work than in examination and that Nigerian pharmacy students have a poor perception about academic dishonesty.[24] Aggarwal *et al*. observed that students in England have a 'hierarchy of values' and considered cheating in course work not as serious as cheating in examinations.[16] Emmerton et al. stated the lack of clarity that exists in the students' interpretation of academic integrity while Henning et al. pointed out that students' perception of morality, professionalism and values affected their engagement in honest or dishonest behaviors.[25,26] The results could also have been due to the instructors indirectly encouraging such practices by not penalizing them appropriately. Callender *et al*. highlighted the importance of teachers in preventing cheating behaviors in students particularly earlier in their academic journey.[27] If excellence is demanded from the students even for laboratory report submissions, they will rise up to the challenge but most times they treat such with unseriousness and engage in unwholesome practices knowing grading of such reports would not be thorough. Moreover, premium is usually placed on the main examinations, where standards are also maintained. The use of plagiarism detecting software for grading assignments could also help in detecting plagiarism among students.[26] Standards should be maintained not only during tests and examinations but also for assignments. Knowing the importance of ethics in the pharmacy profession, emphasis should be placed on all the activities in pharmacy schools. Sierles and Hendrickx also showed that academic dishonesty is not limited to didactic setting but can be evident in dishonest laboratory practices.[14] It has become evident in this study that the most common forms of cheating were peer driven (involving and encouraged by other students) which is similar to results obtained by Baldwin *et al* and Ip *et al*.[11,20] Henning et al. also concluded in their work that students' actions (honest or dishonest) were motivated and directed by friends and family.[26] In fact, Bayaa Martin Saana *et al.*, found out that students believed that a dishonest act was not a misconduct once the parties involved in cheating where in agreement, this applied especially to the copying of laboratory reports of another student with permission.[23]

The study also found that pharmaceutical chemistry was the course the students cheated the most which could be because it is the course most students failed the most as asserted by Rowles and Veltri (2017).[28] After pharmaceutical chemistry, pharmacognosy was the next, the reason that students cheat in the course may be because the course has a heavy workload that will require memorization for examinations. The lecturers were also implicated in being a part of the cause of academic dishonesty when they do not help students have good understanding of courses taught and the students get desperate because they do not want to fail. Also, when they are not available for proper invigilation, they leave room for students to exercise unethical practices during tests and examinations. The approachability of the lecturer also came to the fore with this study because most of the students agreed that when a lecturer is not available or approachable for students' questions to aid the understanding of the students, they are prone to cheat. The students believed that having clear learning objectives would greatly help in studying appropriately

for examinations and reduce the incidence of cheating. Henning *et al*. also reported that clear unambiguous learning objectives would direct students towards a commitment to constructive learning and minimize dishonest practices.[26] The results of the contributions of lecturers to cheating showed variation in the responses across the schools, the students and some schools agreed to a greater extent than the others, this was supported by Ubaka *et al*. in their study that involved the comparison of two Nigerian schools of pharmacy, showing varying responses between the two schools.[24]

Multi-facet strategies for curbing academic dishonesty would be needed for effectiveness, since several factors are implicated in its cause- history of cheating, course difficulty, students' attitudes and lecturers' attitudes.[26] Most institutions have policies regarding academic dishonesty but that does not mean the student can interpret adequately the weight of the measures outlined.[23] The students should then be reminded from time to time by putting into practice institutional policies regarding ethics in assessments both during course work and examinations. It would also help if some of the assessments done can be computerized which would ease similarity and plagiarism checks. Students should also be tutored on academic integrity and its importance in the professional practice of a pharmacist, irrespective of the area of practice. All of the above should be championed by everyone involved in the training of the students not just a few for them to be effective.

CONCLUSION

Academic dishonesty is a reality in pharmacy schools in Southwest Nigeria. Three in ten students in the current sample of pharmacy schools admitted to cheating in pharmacy school. Examination cheating was rarely practiced by students while peer-based forms of academic dishonesty were more common. Students cheated more in pharmaceutical chemistry and pharmacognosy courses. Also, lecturers have influence on academic dishonesty in the way they teach, respond and invigilate examinations. Lecturers can be made to undergo periodic trainings to sharpen their knowledge of the content of what they teach and to improve their teaching skills. Students should also be allowed to assess their lecturers.

REFERENCES

1. Munir M, Ahmad Z, Shahzadi E (2011). A Study on academic dishonesty of university students. 8th International Conference on Recent Advances in Statistics Lahore, Pakistan 8-9: 285-294. https://doi.org/10.13140/2.1.1196.8002
2. Anderman EM, Murdock TB (2011). Psychology of Academic Cheating. *Elsevier in Higher Education* 10(2): 143-156.
3. The University of Newcastle Australia. Glossary https://downloads.newcastle.edu.au/library/tutorials/infoskills/glossary.html Accessed 12 August, 2020.
4. Manar H, Shameem F (2014). Attitude of students towards cheating and plagiarism: university case study, *Journal of Applied Sciences* 14, 748-757. https://doi.org/10.3923/jas.2014.748.757
5. Ameen E, Guffey D, Mcmillan J (1996). Accounting students' perceptions of questionable academic practices and factors affecting their propensity to cheat, *Accounting Education* 5: 191-205. https://doi.org/10.1080/09639289600000020
6. Diekhoff GM, LaBeff EE, Clark RE, Williams LE, Francis B, Haines VJ (1996). College cheating: Ten years later, *Research in Higher Education*. 37(4): 487-502.
7. Genereux RL, McLeod BA (1995). Circumstances surrounding cheating: A questionnaire study of college students, *Research in Higher Education*. 36(6): 687-704. https://doi.org/10.1007/BF02208251
8. Finn KV, Frone MR (2004). Academic performance and cheating: Moderating role of school identification and self-efficacy, *The Journal of Educational Research.* 97(3): 115-121. https://doi.org/10.3200/JOER.97.3.115-121
9. Miller AD, Murdock TB, Anderman EM, Poindexter AL (2007). Who are all these cheaters? Characteristics of academically dishonest students. In Psychology of academic cheating. p. 9-32. Elsevier Academic Press. https://doi.org/10.1016/B978-012372541-7/50003-6
10. Stephens JM, Gehlbach H (2007). Under pressure and under engaged: motivational profiles and academic cheating in high school. In Psychology of academic cheating. p. 107-134. Boston: Elsevier Academic Press. https://doi.org/10.1016/B978-012372541-7/50009-7
11. Baldwin DC, Daugherty SR, Rowley BD, Schwarz MD (1996). Cheating in medical school: a survey of second-year students at 31 schools, *Academic Medicine*. 71(3): 267-73. https://doi.org/10.1097/00001888-199603000-00020
12. Rennie SC, Crosby JR (2001). Are "tomorrow's doctors" honest? Questionnaire study exploring

medical students' attitudes and reported behaviour on academic misconduct, *British Medical Journal.* 322 (7281): 274-5. https://doi.org/10.1136/bmj.322.7281.274
13. Musau P (2017). Academic dishonesty in medical schools, *The Annals of African Surgery*. 14(1): 19-21. https://doi.org/10.4314/aas.v14i1.4
14. Sierles F, Hendrickx I, Circle S (1980). Cheating in medical school, *Journal of Medical Education.* 55(2): 124-5. https://doi.org/10.1097/00001888-198002000-00006
15. Austin Z, Stephanie S, Emily R (2005). 'The fault lies not in our students, but in ourselves': academic honesty and moral development in health professions education-results of a pilot study in Canadian pharmacy, *Teaching in Higher Education,* 10(2): 143-156. https://doi.org/10.1080/1356251042000337918
16. Aggarwal R, Bates I, Davies JG, Khan I (2002). A Study of academic dishonesty among student at two pharmacy schools, *The Pharmaceutical Journal.* 269: 529-533.
17. Davis SF, Grover CA, Becker AH, McGregor LN (1992). Academic dishonesty: prevalence, determinants, techniques, and punishments, *Teaching of Psychology.* 19(1): 16-20. https://doi.org/10.1207/s15328023top1901_3
18. Kleiner C, Lord M (1999). The cheating game. US News & World Report. http://www.geocities.ws/greenjellico/Work/English152/TheCheatingGame.pdf.
19. Yamane T (1967). Statistics: An Introductory Analysis, 2nd Edition, New York: Harper and Row.
20. Ip EJ, Nguyen K, Shah BM, Doroudgar S, Bidwal, MK (2016). Motivations and predictors of cheating in pharmacy school, *American Journal of Pharmaceutical Education.* 80(8): 133. https://doi.org/10.5688/ajpe808133
21. Rabi SM, Patton LR, Fjortoft N, Zgarrick DP (2006). Characteristics, prevalence, attitudes, and perceptions of academic dishonesty among pharmacy students. *American Journal of Pharmaceutical Education.* 70(4): 73. https://doi.org/10.5688/aj700473
22. Harding TS, Carpenter DD, Finelli CJ, Passow H (2003). The relationship between academic dishonesty and ethical behavior in engineering practice. Ethics and Social Responsibility in Engineering and Technology Conference, New Orleans, LA. https://www.researchgate.net/publication/30856002_The_relationship_between_academic_dishonesty_and_ethical_behavior_in_engineering_practice
23. Bayaa Martin Saana S, Ablordeppey EE, Mensah NJ, Karikari T (2016). Academic dishonesty in higher education: students' perceptions and involvement in an African institution, *British Medical Journal* Research Notes 2-13. https://doi.org/10.1186/s13104-016-2044-0
24. Ubaka C, Fajemirokun G, Nduka S, Ezenwanne N (2013). Academic dishonesty among Nigeria pharmacy students: a comparison with United Kingdom, *African Journal of Pharmacy and Pharmacology* 7(27): 1934-1941. https://doi.org/10.5897/AJPP2013.3587
25. Emmerton L, Jiang H, McKauge L (2014). Pharmacy students' interpretation of academic integrity, *American Journal of Pharmaceutical Education* 78(6): 119. https://doi.org/10.5688/ajpe786119
26. Henning MA, Ram S, Malpas P, Sisley R, Thompson A, Hawken SJ (2014). Reasons for academic honesty and dishonesty with solutions: A study of pharmacy and medical students in New Zealand, *Journal of Medical Ethics* 40(10): 702-709. https://doi.org/10.1136/medethics-2013-101420
27. Callender KA, Olson SL, Kerr DC, Sameroff AJ (2010). Assessment of cheating behavior in young school-age children: distinguishing normative behaviors from risk markers of externalizing psychopathology, *Journal of Clinical Child & Adolescent Psychology* 39(6): 776-788. https://doi.org/10.1080/15374416.2010.517165
28. Rowles J, Veltri CA (2017). Performance on interdisciplinary topics in an integrated pharmacy course, *Innovations in pharmacy* 8(1): 6. https://doi.org/10.24926/21550417.1298