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ORIGINAL ARTICLE

A review of morbidity pattern among undergraduate Law students that accessed healthcare at a private University clinic in South-west, Nigeria

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Keywords

Health problems; Undergraduate students; Private University; Nigeria

ABSTRACT

Background: There is a growing youth population in Nigeria's universities. It is important to understand the prevailing health problems of undergraduate students and provide services that are responsive to their health needs. Hence, this study assessed the morbidity pattern among law undergraduates that accessed care at a private Nigerian university clinic.

Methods: A review of health records of 569 undergraduate law students who attended Babcock University, Iperu campus clinic, Ogun State, from January-December 2018 was conducted. Data were extracted from clinic cards and information on socio-demographic characteristics, presenting complaints, diagnosis, drugs prescribed and outcome of care were obtained. Data were analysed using SPSS version 25 and summarised using frequencies and percentages.

Results: The median age of the clinic attendees was 18.7 years and 410 (72.1%) of the clinic attendees were females. Fifth year students accessed care at the University clinic more than other undergraduates, 228 (40.1%). The common morbidities were malaria, 291 (51.1%), respiratory tract infection, 269 (47.3%), malnutrition, 221 (38.8%) and dysmenorrhea, 84 (14.8%). The commonly prescribed class of drugs were analgesics 454 (79.8%), haematinics 401 (70.1%), antibiotics 397 (69.8%), antihistamines 290 (51.0%) and antimalarials 260 (45.7%).

Conclusion: Communicable diseases such as malaria and respiratory tract infections were the most common morbidities among the students studied. The study findings are important in planning university health services aimed at effective prevention and treatment of common morbidities among undergraduates. The university needs to increase sensitization among students with the aim of improving clinic service utilization by students, especially the non-final year students.

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INTRODUCTION

Nigeria has a growing population of undergraduates spread across the 202 registered universities.[1] In 2017, it was estimated that there were 1.7 million undergraduates in the

country.[2] Many of these university undergraduates are in the late adolescent period or early adulthood and this corresponds to the time they are just beginning to make independent decisions about their health.[3,4] This makes the university a good place to imbibe good health-seeking behaviours and promote optimal health.[4,5] Although young persons are generally presumed to be healthy, a number of them will require medical care for common ailments or other health needs.[6] Therefore, university health centres are expected to cater for the basic health care needs of these young adults.[7,8] Thus, access to health services for students and staff on university campuses is fundamental, as it is a basic human right.

Students' utilization of health services and the types of morbidities they experience may differ across locations. This variation in disease patterns can be attributed to factors such as weather conditions for example malaria upper respiratory tract infection and acute severe asthma during the rainy season.[9] Some diseases may not follow specific patterns especially for students who may have underlying chronic non-communicable diseases such as hypertension, type 1 diabetes, obesity and sicle cell disease. Some of the communicable diseases include skin infections like scabies, respiratory tract infections while other medical and surgical emergencies may also be recorded. A review of students' health records at King Faisal University Medical Centre, Saudi Arabia, revealed that about 58% of outpatients presented with infectious diseases, which were mostly respiretory infections, dental, gastro-intestinal, and skin infections.[9] Muscle and joint problems, allergic conditions, gastrointestinal diseases, and trauma were some of the most common non-infectious diseases recorded.[9] Another study in Mansoura University, Egypt that assessed the utilization of health services by students of the university revealed that mean ages were 20.2 years and 19.8 years for both outpatients and inpatients, respectively and anti-biotics/antihelminthics were the most commonly prescribed drugs in this study.[10] Furthermore, a study conducted in Ahmadu Bello University Health Centre, Zaria Kaduna State, Nigeria, reported that sexually transmitted diseases and other diseases of the reproductive system

were the most common outpatient consultations observed, followed by psychiatric, respiratory infections, and parasitic infesta-tions.[11]

University students may reflect the health and health-related problems of their communities.[8] The description of the patterns and variations of these problems will inevitably help in providing comprehensive health care and subsequent health promotion among these students. The pattern of morbidities among university students remain understudied in Nigeria, thus making this study relevant. Specifically, there currently exists a gap in knowledge about morbidity patterns in private university students. This study aimed to assess the morbidity patterns among undergraduates that accessed health care at a private Nigerian university clinic.

METHODOLOGY

Study design: A retrospective review of the health records of undergraduate Law students of Babcock University who accessed care at the clinic of the Iperu campus of the university between the period of January to December 2018 was conducted.

Study location: The study location is the Iperu campus of Babcock University, Ogun State, Nigeria. The University is a private Christian co-educational Nigerian university established in 1999 and owned by the Seventh-day Adventist Church in Nigeria. It is a part of the Seventh-day Adventist education system, the world's second-largest Christian school system.[12] The university is located at Ilishan-Remo, equidistant between Ibadan and Lagos. Babcock University has two campuses; a permanent site in Ilishan with all the faculties and colleges, except the Faulty of Law which is domiciled at the second campus in Iperu town. The Iperu campus has a clinic that runs 24 hours every day providing medical services to both students and staff of the Faculty of Law. The clinic staff include four (4) medical doctors, three (3) pharmacists, twelve (12) nurses, three (3) health record officers, two (2) billing officers and seven (7) health attendants. There is an ambulance service on standby in case of referrals and emergencies that require referrals to Babcock University Teaching Hospital on the main campus in Ilishan. The Iperu clinic has a male ward and a female ward for admission, an observation room, a

pharmacy, a general consultation area and a waiting room. There is also a side-laboratory in the clinic where some investigations such as hematocrit, urinalysis and rapid diagnostic test for malaria are conducted.

Study procedure: The health records for all 569 out of 587 Law students who accessed care at the Babcock University, Iperu campus clinic in from January to December, 2018 were retrieved. The records of 18 clinic attendees were excluded because of incomplete clinic data. A clinic proforma was used to extract data from the case notes of the students that accessed care at the clinic between January and December 2018. The data extracted included sex, age, level of study, department, type of visit (initial or follow up), presenting complaints, diagnosis, drugs prescribed, and outcome of the visit.

Data analysis: The data were analyzed with IBM SPSS version 25 (Statistical Package for Social Sciences). Descriptive analysis of data was conducted to summarize frequencies and percentages for categorical variables e.g. sex of the student. Quantitative variables were summarized using median and range e.g. the age of the students. The Chi-square test was used to assess the association between categorical variables such as sex of respondents and outcome of clinic visit. A p-value <0.05 was regarded as statistically significant.

Ethical considerations: Ethical approval was obtained from the Babcock University Health and Research Ethical Committee (Approval No: BUHREC434/19). Permission was obtained from the Consultant Physician in charge of the clinic and strict confidentiality of the students' personal and health information was ensured. All extracted information was depersonalized and stored on a passworded computer accessible only to the investigator.

RESULTS

The health records of 569 Law students were retrieved and analysed. Slightly more than half, 297 (52.2%) of the students who presented in the University clinic were aged 18 to 20 years with a median age of 18.7 years and most of the clinic attendees were females, 410 (72.1%). Fifth year students accessed care at the

University clinic more than other undergraduates, 228 (40.1%). (Table 1) Four hundred and eighty-one (84.5%) students who accessed care at the university clinic came for follow-up care. The majority, 348 (61.2%) of the clinic attendees had normal body mass index while 190 (33.4%) were overweight or obese. Five hundred and thirty-six (94.2%) students who attended the university clinic had normal blood pressure (diastolic or systolic) while 66 (11.6%) had temperature readings of 37.5^{0}C or more. The three most common presenting complaints were head-aches, 345 (60.6%), cold/catarrh, 291 (51.1%) and cough, 244 (42.9%) while the three least common complaints were vaginal itch/discharge, 26 (4.6%), red/itchy eyes, 24 (4.2%) and difficulty in breathing, 8 (1.4%). (Table 2)

The three most commonly diagnosed conditions were Malaria, 291 (51.1%), respiratory tract infection, 269 (47.3%), and dysmenorrhea, 84 (14.8%) while the three least frequently diagnosed conditions were toothache, 12 (2.1%), vulvovaginitis, 11 (1.9%) and otitis media, 6 (1.1%).

Five hundred and sixty-seven (99.6%) of the clinic attendees had drugs prescribed for them. The three most frequently prescribed classes of drugs were analgesics, 454 (79.8%), haematinics, 401 (70.1%), and antibiotics, 397 (69.8%). The following classes of drugs were the three least prescribed drugs: corticosteroids, 20 (3.5%), anti-hypertensives, 9 (1.6%), and oral rehydration salts, 9 (1.6%).

Table 1: Sociodemographic characteristics of students attending the university clinic

Characteristics	Frequency (n=569)	Percent
Age group (years)		
<18	85	14.9
18-20	297	52.2
21-23	169	29.7
≥24	18	3.2
Sex		
Female	410	72.1
Male	159	27.9
Year of study		
First	67	11.8
Second	48	8.4
Third	181	31.8
Fourth	45	7.9
Fifth	228	40.1

Median (range) = 18.7 (15-29 years)

Table 2: Clinical characteristics and presenting complaints of clinic attendees

Type of visit		
Initial	88	15.5
Follow-up	481	84.5
Presenting complaints**		
Headaches	345	60.6
Catarrh/Cold	291	51.1
Cough	244	42.9
Fatigue/Body Weakness	222	39.0
Sore-throat	209	36.7
Fever	181	31.8
Abdominal Pain	143	25.1
Menstrual Cramps	84	14.8
Loss of Appetite	81	14.2
Menstrual irregularities	62	10.9
Musculoskeletal Pain	56	9.8
Chest Pain	53	9.3
Skin rash/Irritations	50	8.8
Mouth Sore/Ulcers	43	7.6
Nausea/Vomiting	41	7.2
Dizziness	33	5.8
Vaginal Itch/Discharge	26	4.6
Red/Itchy eyes	24	4.2
Difficulty in breathing	8	1.4
Body mass index (Kg/m^2)		
<18.5	31	5.4
18.5-24.9	348	61.2
25-29.9	119	20.9
30-34.9	45	7.9
35-39.9	12	2.1
40 or more	14	2.5
Elevated Systolic BP		
Yes	14	2.5
No	555	97.5
Elevated Diastolic BP		
Yes	22	3.9
No	547	96.1
Elevated BP (either Diastolic or Systolic)		
Yes	33	5.8
No	536	94.2
Temperature reading (^{O}C)		
<37.5	503	88.4
>37.5	66	11.6
History of allergy		
Yes	157	27.6
No	412	72.4

***Multiple responses allowed*

A majority, 460 (80.8%) of the students had outpatient treatment only, 35 (6.2%) were admitted for observation, while 74 (13.0%) were referred to Babcock University Teaching Hospital. (Table 3)

Table 3: Clinical diagnosis and management of clinic attendees

Characteristic	Frequency (n=569)	Percent
Clinical diagnosis		
Malaria	291	51.1
Respiratory tract infection	269	47.3
Dysmenorrhea	84	14.8
Peptic ulcer disease	42	7.4
Myalgia	41	7.2
Gastroenteritis	36	6.3
Ankle sprain	24	4.2
Dermatitis	20	3.5
Urinary tract infection	14	2.5
Conjunctivitis	14	2.5
Asthma	13	2.3
Toothache	12	2.1
Vulvo-vaginitis	11	1.9
Otitis media	6	1.1
Others*	90	15.8
Treatment provided		
Drugs and counselling	567	99.6
Counselling only	2	0.4
Type of drug prescribed		
Analgesics	454	79.8
Haematinics	401	70.5
Antibiotics	397	69.8
Antihistamine	290	51.0
Antimalarial	260	45.7
Cough syrup	173	30.4
Antacids	70	12.3
Antifungal	65	11.4
Bronchodilators	38	6.7
Antispasmodic	29	5.1
Corticosteroid	20	3.5
Anti-hypertensive	9	1.6
Oral Rehydration Salts	9	1.6
Other drugs**	63	11.1
Treatment outcome		
Outpatient treatment only	460	80.8
Admitted for observation	35	6.2
Referred to a Hospital	74	13.0

Others included gingivitis, otalgia, bacterial vaginosis, shoulder dislocation, furuncles, etc.*
*Other drugs ** included anti-parasitic agents, emollients, etc.*

More female students 357 (87.1%) came for follow-up visits than the males 124 (78%) and this was statistically significant ($x^2 = 7.234$, $p = 0.007$). However, a higher proportion of male students 139 (87.4%) were treated on an outpatient basis than females 321 (78.3%) and this was statistically significant ($x^2 = 8.612$, $p = 0.013$). The associations between student's gender and other characteristics such as age, body mass index, temperature, and blood pressure at presentation were not statistically significant. (Table 4)

Table 4: Association between student's sex and selected characteristics

Characteristics	Sex		Test Statistics/ p-value
	Female (n=410) n (%)	Male (n=159) n (%)	
Age in years			
<18yrs	60 (14.6)	25 (15.7)	$x^2 = 4.981$
18-20yrs	215 (52.4)	82 (51.6)	$p = 0.173$
21-23yrs	126 (30.7)	43 (27.0)	
24yrs or more	9 (2.2)	9 (5.7)	
Body Mass Index (Kg/m²)			
<18.5	20 (4.9)	11 (6.9)	
18.5-24.9	252 (61.5)	96 (60.4)	$x^2 = 1.739$
25-29.9	89 (21.7)	30 (18.9)	$p = 0.884$
30-34.9	31 (7.6)	14 (8.8)	
35-39.9	8 (2.0)	4 (2.5)	
40 or more	10 (2.4)	4 (2.5)	
Temperature reading (°C)			$x^2 = 3.660$
<37.5	369 (90.0)	134 (84.3)	p = 0.056
≥37.5	41 (10.0)	25 (15.7)	
Type of visit			$x^2 = 7.234$
Initial	53 (12.9)	35 (22.0)	p **= 0.007**
follow-up	357 (87.1)	124 (78.0)	
Out-come of visit			
Outpatient treatment only	321 (78.3)	139 (87.4)	$x^2 = 8.612$
Admitted for observation	32 (7.8)	3 (1.9)	p **= 0.013**
Referred to an hospital	57 (13.9)	17 (10.7)	
Elevated BP diastolic OR systolic			$x^2 = 0.097$
No	387 (94.4)	149 (93.7)	$p = 0.756$
Yes	23 (5.6)	10 (6.3)	

DISCUSSION

This study aimed to assess the morbidity patterns amongst Law students who accessed services at the health centre of a private university. The study revealed that the majority of the students visiting the university clinic were females accounting for about seven out of ten student visits in the Iperu campus clinic throughout 2018. This is similar to the finding from a study in Mansoura University, Egypt that assessed the utilization of health services by students of which revealed that the majority of patients were outpatients, out of which 52% of them were females.[10] This may not be unexpected as it is well documented that female undergraduates have better health-seeking behaviour than their male counterparts.[13,14]

In this study, final year students utilised health services more than other undergraduates, hence students in other classes should be encouraged to attend the university clinic for health services as required. Students should be encouraged to present at the health clinic whenever they have health concerns and not

only when they are ill. In addition, the age group that accessed care more often were students aged 18 to 20 years. Whereas a study among public university students in Zimbabwe reported that more students aged 20 to 23 years had the highest attendance at the university clinic.[15] This age difference in care-seeking may be explained by the fact the private undergraduate students at our study location were younger than those from the Zimbabwean study.

Most students were treated as outpatients and this is not un-expected as the Iperu campus health centre is a primary care health facility and has no capacity to manage severely ill inpatients. Also, most of the presenting complaints of the students were mild to moderate and only required outpatient treatment. In addition, the main university teaching hospital serves as the referral facility and this was where 13% of the students who accessed care at the health centre were referred. Medical screening of vital signs such as blood pressure, temperature checks pulse, and respiratory rate was conducted for all students. During these checks, some abnormalities were detected such as elevated blood pressure and fever. The finding of elevated blood pressure among this young population of students has wider public health significance and suggests the need for more screening and treatment for persons with hypertension. As regards nutritional status assessed via anthropometry, about one quarter were overweight and obese which can be a risk factor for non-communicable diseases, while 5.4% of the students were under-weight. This suggests that up to a third of students who attended the clinic had one nutritional problem or the other. This has huge health implications for the students now and in the immediate future.

The common presenting symptoms are headaches, catarrh/cold, cold, fatigue/body weakness, sore throat, and fever. These symptoms are suggestive of an infective process which incidentally were the most common diagnoses in this study. Malaria was the most frequently diagnosed disease and this may be due to the endemicity of malaria in Nigeria. Next is respiratory tract infection and this is in agreement with findings from a survey in Zimbabwe that reported infectious conditions as the most commonly diagnosed

conditions among students attending a university clinic.[15] This finding is similar to what was observed in a study conducted at King Faisal University Medical Centre, Saudi Arabia, where about 58% of outpatients presented with infectious diseases.[9] A similar observation was reported in a study conducted at the University of Benin, Nigeria where fever headaches, and joint pains were the common symptoms.[16] Menstrual cramps and menstrual irregularities were common gynaecological symptoms seen in the female students seen at the university clinic in this study which is corroborated by findings from a previous study among students who accessed care at a university campus clinic in Zimbabwe.[15] This finding is not unexpected since most of the female undergraduates are young and in the early reproductive years; a period commonly associated with menstrual disorders.[17,18]

Analgesics were the most commonly prescribed drugs; this may not be unexpected as pain is a common symptom associated with most presenting complaints. This finding is similar to what was reported in Zimbabwe,[15] where analgesics were the most prescribed drugs although it was not as frequent (24.5%) as we found in our study (79.8%). The widespread prescription of analgesics may require more attention or scrutiny so as to ensure that students do not misuse these pain killers.

Limitations: This study reviewed records at a university health clinic and was prone to some limitations. Some students' records were excluded because of missing data. This was however minimal due to the meticulous record-keeping and storage practices among the medical records officers, nurses and other staff at the clinic. This study was conducted at one of the campuses of a private university among law undergraduates, hence the findings from this study may not be generalizable to all universities in Nigeria.

Conclusion: The morbidity pattern among university students in this study has been described. The common presenting complaints were headaches, catarrh, and cough while the commonly diagnosed conditions were malaria, respiratory tract infections, and Dysmenorrhea. The commonly prescribed medications were analgesics, haematinics, antibiotics, antihistamines, and antimalarials. The study findings are important in

planning university health services to reduce common morbidities and also provide drugs including other essential supplies for managing commonly diagnosed conditions. The university needs to increase sensitization among students aimed at improving clinic service utilization. Similarly, positive lifestyle modification such as improved physical activities, balanced diet and adequate sleep should be promoted to reduce the burden of overweight and obesity among undergraduates. Future studies using longitudinal study designs may be appropriate to assess disease patterns and health care seeking behaviour of undergraduates as well as postgraduate students with gender disaggregations.

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Contributions to joint publication: TOO conceived the study, did the data analysis, and partly drafted the initial manuscript (introduction, methods and results). MOO and EFB managed data collection and drafted parts of the results and discussion. OA and KS worked on data analysis and interpreted the results. OO and AA revised the results section and finalised the discussion, WA provided initial study concepts, supervised data collection, revised the results and proof read the manuscript. All authors approved the final version of the manuscript.

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