



Stress among Pharmacy and Medical Students of University of Benin, Nigeria

Stella F Usifoh*, Isabel N. Aika, Jeffrey S. Soni and Ernest Onyeka Odo

Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, University of Benin, Benin City, Nigeria.

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*Corresponding author:

Email : sfusifoh@uniben.edu

Phone : +2348056226668

ABSTRACT

University students go through a spiral of activities to meet up with their academic requirements. The aim is to compare stress on pharmacy and medical students of the University of Benin considering their similar curriculum. A cross-sectional study conducted among medical and pharmacy students from 200 level to 600 level with a structured questionnaire consisting of items from International Stress Management Association (ISMA) tool and items from SF-12 a "short form" Quality of life questionnaire containing 12 questions about physical, social and psychological health. Data were sorted and analyzed with SPSS version 22. About 634 students participated of which 349 were pharmacy students and 285 were medical students. More Pharmacy students 282(81.3%) reported bringing work home than medical students 197(69.6%) and 307 (86.5%) pharmacy students did not have enough time to do all things compared with 231(79.4%) medical students. About one-third of the students from both faculties felt that their self-confidence had reduced, while half of the students in each faculty felt fatigued even after getting adequate sleep. Pharmacy students had a higher mean quality of life score 3.41 ± 0.56 compared to medical students 2.88 ± 0.82 (p-value <0.0001). Males had a statistically significant higher mean quality of life score 3.39 ± 0.63 than females 2.77 ± 0.76 (p-value <0.0001). Males also had higher mean score on each component of the quality of life than females. Both pharmacy and medical students appeared equally stressed. Pharmacy students experienced reduced quality of life compared to medical students, while male students had better quality of life than female students.

INTRODUCTION

Stress is a psycho-physiological process that generates a host of chemical and hormonal reaction in the body. Stress is not always bad sometimes as it can help people perform under pressure and motivate them to do their best, however, when it interferes with one's physical and mental health it can result in detrimental effects^[1]

University students experience undue amount of stress with negative academic, emotional or health outcomes. The stress may be related to transition from secondary school life to higher education, demanding lecture schedules, finances, numerous extra-curriculum activities and family and social ties with their demands. Student stress can vary from semester to semester^[2]. Student stress has been classified into three namely; academic pressures, social issues and financial problems, these stresses have resulted in a range of physical and mental health problems

among students thus affecting their self-esteem^[1,2]. This has led to a growing interest in the relationship with stress and health-related quality of life among university students. Studies show that student stress vary with the course of study as some courses are more demanding than others. Noteworthy is the extensive studies among medical students and some studies conducted among pharmacy students and nursing students^[3,4,5], one study found that pharmacy students were more stressed than medical and dental students^[6].

Students in Medicine and pharmacy spend more years in school with curriculum designed to bridge knowledge and practice as students. A retrospective systematic review of literatures on stress among medical students in Malaysia^[7] showed that medical education is highly stressful to students and teaching processes exerts an unintentional negative effect on students' mental health. Similar study conducted in Mercer

University College of Pharmacy and Health Sciences to examine stress and health related quality of life (HRQoL) among third-year doctor of pharmacy students showed that mental HRQoL decreases as stress increases. A significant negative correlation was found between the two measures. In the study, the most common stress triggers reported by the students includes; family and relationship problems, take-home assignments, examination schedules, and finance^[5].

In Nigeria, faculties of Pharmacy and Medicine have training duration of five and six years respectively, except Faculty of Pharmacy university of Benin whose duration of study is six years because the University operates Doctor of pharmacy program as opposed to five years Bachelor of pharmacy program. Each student, irrespective of the faculty, is expected to fulfil all the necessary requirements to qualify for certification. The curricula for pharmacy and medical programs are demanding and much is also expected of the students in moving from one level to the next^[8]. Graduation from these programs require students to have high scores for each course they take, since there is low tolerance for many failed courses as it could result in either probation (spending extra years) or total dismissal from the program. The students are expected to pass all the courses- comprising theory, practice and site based activities and oral examinations. Hence, the objective of the study was to compare stress on pharmacy and medical students of the University of Benin considering their similar curricula.

MATERIALS AND METHODS

Study Design/setting: This is a cross-sectional study carried out among students in the Faculties of Pharmacy and Medicine, University of Benin main campus Ugbowo, Benin City. The estimated population of students in the University of Benin is about 50,000 full time and part time students. Both Faculties started together in 1970 under one College. Pharmacy later became a separate faculty of its own. The total population of Medical and Pharmacy students in the University of Benin in the 2015/2016 session was about 740 and 690 respectively.

Study Population: Respondents included were under graduate students of the University of Benin from 200 to 600 level in the faculty of Pharmacy and Medicine respectively. Those excluded were non-students of University of Benin, students of pharmacy and medicine below 200level, post graduate students of both Faculties, students of other faculties, academic and non-academic members of staff of the University of Benin. Convenience sampling was used to recruit participants for the study.

Data Collection: The study was carried out using a self-administered structured questionnaire developed from extensive literature review^[9,10] the questionnaire consisted of three sections: the socio-demographic section, as well as section on the level of stress and quality of life. The level of stress questions were derived from the International Stress Management Association (ISMA) tool^[10] while quality of life section consisted of items from SF-12 a "short form" Quality of life questionnaire containing 12 questions about physical, social and psychological health.

Data Analysis: Data were coded and entered into Microsoft excel spreadsheet and sorted for entry errors, it was thereafter transported into SPSS version 22 for descriptive analysis and inferential analysis. Descriptive statistics are displayed as proportions and percentages.

RESULTS

Seven hundred questionnaires were distributed but only 634 were returned giving a 90.5% response rate. A total of 285 questionnaires were retrieved from medical students, and 349 from pharmacy students. Three hundred and fifty one (55.4%) respondents were males and 284 (44.6%) were females, Three hundred and forty nine (53.9%) of the respondents were between 21 to 25years, while 603 (95.1%) of the respondents were single (Table 1).

Table 2 shows that there was no significant difference between participant's responses to stress-related activities in both faculties. However, more pharmacy students (81.3%) compared to medical students 197 (69.6%). Medical students frequently took school work to their rooms/homes, while 176(61.1%) of medical students do not have time for hobbies or other interests compared to 209 (59.9%) of pharmacy students. About one-third of the students from both faculties felt that their self-confidence

Table 1 : SOCIO-DEMOGRAPHICS OF STUDENTS

Variables		Pharmacy N (%)	Medicine N (%)
Sex	Male	169(48.4)	182(63.9)
	Female	180(51.6)	103(36.1)
Age (Years)	16-20	77(22.1)	56(19.5)
	21-25	200(57.5)	149(51.9)
	26-30	63(18.1)	59(20.6)
	>30	8(2.3)	23(8.0)
Level	200L	79(22.2)	55(18.8)
	300L	69(19.2)	60(20.5)
	400L	75(21.1)	49(16.8)
	500L	67(18.8)	71(24.3)
	600L	66(18.5)	57(19.5)
Marital Status	Single	335(96.0)	269(94.5)
	Married	12(3.4)	16(5.5)
	Divorced	2(0.6)	0
Residence	In School	197(56.8)	153(52.9)
	Hostel		
	Off-Campus		
	With Room	58(16.7)	40(13.8)
	Mate		
	Off-Campus	74(21.3)	76(26.3)
	Alone		

Table 2 : Participant's Responses on Stress-related Activities

Variable items	Pharmacy (%)	Medical (%)	p-Value
I frequently bring work home	282 (81.3)	197 (69.6)	0.8925
Not enough hours in the day to do all things	307 (86.5)	231 (79.4)	
I deny or ignore problems hoping they will go away	89 (25.4)	80 (27.9)	
I do job myself to ensure they are done properly	304 (87.1)	250 (86.8)	
I underestimate how long it takes to do things	173 (51.6)	150 (53.8)	
I feel that there many deadlines	181 (52.2)	153 (53.3)	
My self-confidence is lower than I like it to be	110 (31.5)	94 (32.8)	
I frequently have guilty feelings if I relax	291 (83.1)	222 (76.3)	
I Think about problems even when relaxing	236 (67.6)	182 (63.9)	
I Feel fatigued or tired even after adequate sleep	176 (50.4)	133 (46.0)	
I often nod or finish people's sentences	175 (50.0)	147 (51.0)	
I have tendency to eat, talk, walk and drive quickly	188 (54.2)	158 (55.1)	
My appetite has changed	166 (47.0)	144 (50.3)	
I Feel irritated if the car or traffic is too slow	249 (71.3)	191(66.1)	
Bottle up feelings when annoyed	171 (48.9)	150(52.10)	
I Play sports or game to win whoever I play with	255 (73.3)	197(68.4)	
I Experience mood swings, indecision, etc.	127 (37.1)	95 (32.9)	
I Find fault and criticize others	52 (14.8)	42 (14.5)	
I Seem to be listening even though preoccupied	261 (75.2)	184(63.7)	
My Sex drive is lower	64 (21.6)	37 (14.3)	
I Find myself grinding my teeth	35 (10.1)	38 (9.8)	
Increased muscular aches and pains	138 (39.2)	103 (5.8)	
I am unable to perform tasks as well as I used to	88 (25.6)	79 (27.7)	
I have greater dependence on alcohol, caffeine or drugs	24 (6.9)	33 (11.5)	
I don't have time for many interests or hobbies	209 (59.9)	176(61.1)	

had reduced, while half of the students in each faculty felt fatigued even after getting adequate sleep. Fewer students from pharmacy (6.9%) depended on alcohol, caffeine and drugs than medical students (11.5%).

Table 3 displays the quality of life of students in both faculties. Students from pharmacy had a higher mean quality of life score 3.41 ± 0.56 compared to medical students 2.88 ± 0.82 which was statistically significant. P value < 0.0001.

Table 4 shows a comparison of quality of life in relation to gender of the students. Males had a statistically significant higher mean quality of life score 3.39 ± 0.63 than females 2.77 ± 0.76 .

Males also had higher mean score on each component of the quality of life than females.

DISCUSSION

This study sought to examine stress and quality of life of pharmacy and medical students. There was no statistically significant difference in the stress-related activities between students from both faculties. Few studies have compared stress level among pharmacy students and other students, one of such studies reported that pharmacy students were more stressed than medical and dental students^[6]. However, majority of the students in this study took school work to their rooms/home, this is an

Table 3 : Comparison of Quality of Life among Pharmacy and Medical Students

Quality of Life Score			
Variable	Pharmacy N=347	Medical N=285	p-Value
	Mean \pm SD	Mean \pm SD	
Accomplish less than you will like to	3.48 \pm 0.61	2.83 \pm 0.79	
Were limited in the kind of work or activities	3.39 \pm 0.41	2.92 \pm 0.99	
Did work less carefully than usual	3.47 \pm 0.61	2.84 \pm 0.71	
Work interfered with your social activities	3.24 \pm 0.41	2.71 \pm 0.78	
Pain interfere with your normal work	3.49 \pm 0.61	2.86 \pm 0.98	
Felt calm and peaceful	3.49 \pm 0.66	2.86 \pm 0.74	
Have a lot of energy	3.26 \pm 0.61	3.13 \pm 0.78	
Have felt downcast and depressed	3.46 \pm 0.52	2.89 \pm 0.78	
Average mean score	3.41 \pm 0.56	2.88 \pm 0.82	<0.0001

Table 4 : Comparison of Quality of life Among Male and Female Respondents

Quality of Life Score			
Variable	Male students N=351	Female N=283	p-Value
	Mean \pm SD	Mean \pm SD	
Accomplish less than you will like to	3.39 \pm 0.61	2.78 \pm 0.68	
Were limited in the kind of work or activities	3.36 \pm 0.50	2.71 \pm 0.92	
Did work less carefully than usual	3.41 \pm 0.71	2.76 \pm 0.62	
Academic work interfered with your social activities	3.41 \pm 0.51	2.78 \pm 0.68	
Pain interfere with your normal work	3.21 \pm 0.60	2.62 \pm 0.99	
Have felt calm and peaceful	3.68 \pm 0.75	2.82 \pm 0.72	
Have a lot of energy	3.26 \pm 0.80	2.89 \pm 0.71	
Have felt downcast and depressed	3.42 \pm 0.54	2.77 \pm 0.88	
Average mean score	3.39 \pm 0.63	2.77 \pm 0.76	<0.0001

indication that their academic programs are quite intense or that the course load of the students which mostly keep them occupied with work throughout the day is enormous, in a study conducted among students taking medical courses, the authors concluded that medical students were more frequent victims of academic stress than other students, possibly due to their higher academic demands and perception of time constraints to fulfil them^[8]. This

observation is consistent with the results of a study done among 300 pharmacy and Pharm D Students in the University of Jordan, in that study, student's perceived stress was related to programme intensity, lack of exercise and social activities, the effects of tasking course load on students' health and immune-related diseases were more pronounced on PharmD students^[1].

Academic stress can be compounded by emotional and physical stress and can negatively affect one's quality of life. The effect of stress and quality of life on gender among students is well documented, some studies report that females are more affected by academic stress than their male counterpart and have lower quality of life^[11,12], one of such studies on the impact of student-life stress on health related quality of life of doctor of pharmacy student in the College of Pharmacy, University of New Mexico showed that females had significantly higher total student-life stress inventory scores and lower mental component HRQoL scores than males^[5,13]. This study however reports that males have lower quality of life score which translates to higher quality of life compared to females, similar result was also reported in a study conducted among medical students^[8]. Possible reasons why stress impacts gender differently are yet to be elucidated. In a related study by Dala *et al*^[13] the measure of comparative stress degrees between male and female students did not show any significant differences.

It is imperative that stress level be assessed on students on both individual and collective basis as it affects academic performance which may impact on their future work behavior. Curricula reviews should be a routine part of university academic duties in order to reduce stress impact on students. Some studies suggests establishment of more recreational and sports activities and establishment of counseling cells in institutions^[14,15].

LIMITATIONS OF STUDY

This study only compared stress between pharmacy and medical students, the effects of stress based on the level of study was not assessed. The interpretation of results from this study was based on the student representative from one institution thus generalization cannot be made.

CONCLUSION

This study showed that majority of pharmacy and medical students appeared equally stressed. Pharmacy students experience a reduced quality of life compared to medical students. The outcome of this study indicated that male students had better quality of life than female students.

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