

STRESS AND PSYCHOLOGICAL HEALTH OF MEDICAL STUDENTS IN A NIGERIAN UNIVERSITY.

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ABSTRACT

Objective: Physician job satisfaction is one indicator of the overall health of our health care delivery system. Excellent but dissatisfied physicians could decide to leave the practice of medicine or highly talented students could opt for different careers if the perception that medicine is not a fulfilling career exists. This study aims to investigate the level of course satisfaction, its relationship to psychological disorder and presence/absence of stress among medical students. Physician job satisfaction is one indicator of the overall health of our health care delivery system. Excellent but dissatisfied physicians could decide to leave the practice of medicine or highly talented students could opt for different careers if the perception that medicine is not a fulfilling career exists. This study aims to investigate the level of course satisfaction, its relationship to psychological disorder and presence/absence of stress among medical students.

Materials and Methods: A cross-sectional study was conducted among 410 medical students of the University of Benin, Nigeria. The respondents completed a self-administered questionnaire and a standard instrument The General Health Questionnaire (GHQ 28).

Results: The response rate was 93.9%. Two hundred and forty four (63.4%) of respondents were satisfied with their course, 331 (86.0%) of them felt medicine was stressful. There was also a statistical significant difference in the level of stress among the various levels of medical students. One hundred and twenty three (31.9%) medical students indicated that they would not study medicine again if given a second chance. One hundred and twelve (29.1%) medical students had psychological disorder. More dissatisfied students had psychological disorder than satisfied students and this difference was found to be statistically significant.

Conclusion: The level of perceived stress among medical students was found to be high and a significant number of students had psychological morbidity. There is a need to identify and correct the causes of dissatisfaction among these groups of students in order to improve on the psychological state of the students. Stress management training is also required as majority of the medical students found the course stressful.

Key Words: Stress, psychological health, Medical students.

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INTRODUCTION

Physician job satisfaction is a complex phenomenon,¹ and it is one indicator of the overall health of our health care delivery system.² For example, excellent, but dissatisfied physicians could decide to leave the practice of medicine or highly talented students could opt for different careers if the perception that medicine is not a fulfilling career exists. Both of these outcomes would clearly weaken patient care and the health care system in general.²

Medical students who eventually decide to practice the medical profession usually carry on with the same perception of the course as they have always had,³ and this rubs off on their practice, positively or negatively.

Behavioural and social science research suggests that job satisfaction and work performance are positively correlated.⁴ This therefore implies that the

Level of satisfaction enjoyed by a doctor directly influences his degree of commitment, and therefore, his job performance in rendering health care services and in establishing satisfactory doctor-patient relationship. Course satisfaction apart from affecting productivity, could affect psychological health and well being. The dreams of most students are actualized on securing admission into a College of Medicine and such students begin to enjoy a first hand experience of all they have probably heard about pertaining to medicine as a course. For some however, gaining admission only marks the beginning of six years of drudgery and unremitting hard-work towards attaining a goal which they may not necessarily be interested in.

The enormity of the workload faced by medical students could be a major deterrent to their smooth transition from the secondary to the tertiary system of learning. Also, most of the study materials required by the students cost a lot of money and may not be affordable by the majority. There appears to be an increasing trend of a relative lack of interest in the

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Practical aspects of medicine by medical students, with a corresponding decrease in their appreciation of what is both expected and required of them as potential doctors.

If this trend were to go unchecked, there will come an era where truly committed doctors would be a rare finding, as it can only result in turning out doctors to whom patient care is not a primary priority. The objective of this study was to determine the relative percentages of satisfied and dissatisfied medical students and presence/absence of stress among them. The researchers also assessed the mental state of the study population with a view to finding a relationship, if any, between their mental state and their level of satisfaction. The mental state assessment was done by means of the General Health Questionnaire (GHQ 28).

MATERIALS AND METHODS

A cross sectional study was conducted among medical students of the College of Medical Sciences, University of Benin, Benin City, Edo- State, Nigeria, between September 2004 and February 2005. The study population comprised the 200 level to 600 level medical students. The population of the students as at the time of the study was 1390. A total of 410 students were included in the study. (Minimum sample size was 384) This comprised 29.5% of the student population; hence 29.5% of students were taken at each level thus:

29.5% of the 200 level student populations (262) ----
- 77 students

29.5% of the 300 level student populations (273) ----
- 81 students

29.5% of the 400 level student populations (359) ----
- 106 students

29.5% of the 500 level student populations (295) ----
- 87 students

29.5% of the 600 level student populations (201) ----
- 59 students

Using a sampling ratio of 1:3, the questionnaire was administered to every third student encountered in his or her class until the required number was achieved. The 1st student was selected among the 1st three by simple random sampling method. Course satisfaction was measured using a self administered questionnaire. Information sought included demographic data such as age, sex and marital status. A 5 point Likert scale (ranging from very dissatisfied to very satisfied) was used to grade levels of satisfaction. The questionnaire was pretested at the College of Medicine, Ambrose Alli University Ekpoma, Edo-State, Nigeria. The final questionnaire was a product of the modifications detected by the pretesting. Psychological ill health was measured using a standard instrument, GHQ 28. The GHQ is a self- administered screening

instrument designed to measure psychological health with high specificity and sensitivity.⁵⁻⁷ Respondents had to indicate on a 4 point scale whether they have experienced any of the GHQ symptoms recently. As recommended, an overall GHQ score was obtained using the 0-0-1-1 scoring system for the four responses possible for each item. Scores of 4 and above indicate an increased likelihood of psychological ill health. The research was approved by the Department of Community Health, School of Medicine, University of Benin, Edo State, Nigeria and the University of Benin Teaching Hospital Ethical Committee. Informed consent was gotten from the participants who were assured of strict confidentiality as regards their responses in the questionnaires. Data analysis was done using Microsoft words Excel and PEPI Version 3. Differences between groups were analysed using the chi-squared test (X^2). Statistical significance was established at $P < 0.05$.

RESULTS

A total of 385 questionnaires were retrieved and analysed from a total medical student population of 410 giving a response rate of 93.9%. The mean age of the medical students was 24.51 3.351. Two hundred and thirty-five (61.0%) of the respondents were male, while 150 (39.0%) were females. (Table 1)

The level of course satisfaction is shown on table 1. Two hundred and forty-four (63.4%) respondents were satisfied with their course, 57 (14.8%) were dissatisfied, while 84 (21.8%) were undecided about their course. (Table 1). Among the male medical students, 146 (62.1%) were satisfied with the course, 41 (17.5%) were dissatisfied, while 48 (20.4%) were undecided about the course. (Table 1) Among the female students 98 (65.3%) were satisfied with the course, 36 (24.0%) were undecided, while 16 (10.7%) were dissatisfied with the course (Table 1) Fifty one (68.9%) 200 level students, 36 (53.7%) 300 level students and 64 (63.4%) 400 level students were satisfied with medicine as a course, while 55 (65.5%) 500 level and 38 (64.4%) 600 level medical students were satisfied with the course. (Table 2)

Respondents were asked to rate the level of stress in the medical school. Three hundred and thirty-one (86.0%) felt medicine was stressful, 29 (7.5%) did not find it stressful. (Table 3) Those who were undecided about their level of stress totaled 25 (6.5%) (Table 3). Three (5.3%) of the students who were dissatisfied with the medical course did not find medicine stressful, 52 (91.2%) of them found medicine stressful, while 2 (3.5%) were undecided whether medicine was stressful or not. Among the satisfied respondents, 20 (8.2%) of them did not find medicine stressful, 211 (86.5%) found it stressful, while 13 (5.3%) were undecided if medicine was stressful or not. (Table 3) Fifty-four (72.9%), 50 (74.6%) and 95 (94.1%),

Table 1: Level of Course Satisfaction and Sex of Respondents

Level of satisfaction	Male (%)	Female (%)	Total (%)
Satisfied	146 (62.1)	98 (65.3)	244 (63.4)
Undecided	48 (20.4)	36 (24.0)	84 (21.8)
Dissatisfied	41 (17.5)	16 (10.7)	57 (14.8)
Total	235 (100.0)	150 (100.0)	385 (100.0)

$X^2 = 3.528$, $df = 2$, $P = 0.171$ Not Significant.

Table 2: Course Satisfaction and Class Level of Medical Students

Level of Course Satisfaction	Class Level of Medical Students (%)					Total
	200L	300L	400L	500L	600L	
Satisfied	51(68.9)	36(53.7)	64(63.4)	55(65.5)	38(64.4)	244(63.4)
Undecided	10(13.5)	24(35.8)	23(22.8)	16(19.0)	11(18.6)	84(21.8)
Dissatisfied	13(17.6)	7(10.5)	14(13.9)	13(15.5)	10 (17.0)	57(14.8)
Total	74 (100.0)	67(100.0)	101(100.0)	84(100.0)	59(100.0)	385(100.0)

$X^2 = 11.891$, $df = 8$, $P = 0.156$ Not Significant

Table 3: Level of Stress in the Medical School and Level Of Course Satisfaction Among Respondents

Presence/Absence of Stress	Level of Course Satisfaction			Total (%)
	Satisfied (%)	Undecided (%)	Dissatisfied (%)	
Not stressful	20 (8.2)	6 (7.1)	3 (5.3)	29 (7.5)
Stressful	211(86.5)	68 (81.0)	52(91.2)	331 (86.0)
Undecided	13(5.3)	10 (11.9)	2 (3.5)	25 (6.5)
Total	244 (100.0)	84 (100.0)	57 (100.0)	385 (100)

$X^2 = 5.546$, $df = 4$, $P = 0.236$. Not Significant

Medical students in two three and four hundred level respectively felt that medicine was stressful. Among the 500 level and 600 level students, 77 (91.7%) and 55 (93.2%) felt medicine was stressful respectively. (Table 4)

Of the total number of respondents, 202 (52.5%) indicated that they would study medicine again given a second chance, 123 (31.9%) indicated that they would not study medicine again if given a second Chance, while 60 (15.6%) were undecided about studying medicine again given a second chance

(Table 5) . When willingness to study medicine was related to level of course satisfaction, 146 (59.8%) of the respondents who were satisfied with the course, were willing to study medicine again, while 66 (27.1%) medical students who were satisfied with the course were not willing to study medicine again. (Table 5). Among the students who were dissatisfied with the course, 27 (47.4%) were willing to study medicine again, while 23 (40.3%) were not willing to study medicine again (Table 5).

Table 4: Stress and Class Level of Medical Students

Level of Stress	Class Level of Medical Students (%)					Total
	200L	300L	400L	500L	600L	
Not stressed	9(12.2)	10(14.9)	5(4.9)	3(3.6)	2(3.4)	29(7.5)
Stressed	54(72.9)	50(74.6)	95(94.1)	77(91.7)	55(93.2)	331(86.0)
Undecided	11(14.9)	7(10.5)	1(1.0)	4(4.7)	2(3.4)	25(6.5)
Total	74 (100.0)	67(100.0)	101(100.0)	84(100.0)	59(100.0)	385(100.0)

$X^2 = 30.458$, $df = 8$, $P = 0.000$ [1.75E 04]. Significant.

Table 5: Willingness of Students to Study Medicine Again and Level of Satisfaction

Willingness to Study Medicine Again	Level of Course Satisfaction			Total (%)
	Satisfied (%)	Undecided (%)	Dissatisfied (%)	
YES	146 (59.8)	29 (34.5)	27 (47.4)	202 (52.5)
NO	66 (27.1)	34 (40.5)	23 (40.3)	123 (31.9)
Undecided	32 (13.1)	21 (25.0)	7 (12.3)	60 (15.6)
Total	244 (100.0)	84 (100.0)	57 (100.0)	385 (100.0)

$X^2 = 19.100$, $df = 4$, $P = 0.001$ [7.51E 04] Significant

Table 6: Psychological Health and Level of Course Satisfaction Among the Respondents.

Psychological Disorder	Level Of Course Satisfaction			Total (%)
	Satisfied (%)	Undecided (%)	Dissatisfied (%)	
YES	61 (25.0)	27 (32.1)	24 (42.1)	112 (29.1)
NO	183 (75.0)	57 (67.9)	33 (57.9)	273 (70.9)
Total	244 (100.0)	84 (100.0)	57 (100.0)	385 (100.0)

$X^2 = 7.039$, $df = 2$, $P = 0.030$. Significant.

One hundred and twelve (29.1%) medical students had psychological disorder (GHQ score 4), while 273 (70.9%) did not have psychological disorder. (GHQ score 4). (Table 6) Of the 244 satisfied respondents, 61 (25.0%) had psychological disorder, while 183 (75.0%) did not. Of the 57 (100.0%) dissatisfied respondents, 24 (42.1%) had psychological disorder, while 33 (57.9%) did not have psychological disorder. Among the

Table 7: Psychological Health and Class Level of Medical Students.

Psychological Disorder	Class Level of Medical Students (%)					Total
	200L	300L	400L	500L	600L	
YES	26(35.1)	15(22.4)	36(35.6)	24(28.6)	11(18.6)	112(29.1)
NO	48(64.9)	52(77.6)	65(64.4)	60(71.4)	48(81.4)	273(70.9)
Total	74 (100.0)	67(100.0)	101(100.0)	84(100.0)	59(100.0)	385(100.0)

$X^2 = 8.005$, $df = 8$, $P = 0.433$ Not Significant.

respondents who were undecided about the medical course, 27 (32.1%) of them had psychological disorder, while 57 (67.9%) of them did not have. (Table 6)Twenty six (35.1%) 200 level, 15 (22.4%) 300 level and 36 (35.6%) 400 level medical students had psychological disorder. Among the 500 level medical students, 24 (28.6%) had psychological disorder, while 11 (18.6%) 600 level medical students had psychological disorder. (Table 7)

DISCUSSION

The mean age of the respondents' (24.5 3.35) was similar to that found in another study⁸ carried out at the College of Medicine, Lagos State University, Nigeria. Respondents who were satisfied with the medical career (63.4%) made up the majority of the population. This is similar to a study conducted in the University College Galway, Ireland where it was observed that majority expressed satisfaction with their choice of University course.⁹ A greater proportion of the female respondents were found to be satisfied with medicine as a career than the male respondents, but this was not found to be statistically significant ($X^2 = 3.526$, $df = 2$, $P = 0.171$). This is similar to the findings of a study at a Canadian Medical School, where there were non sex related differences in job dissatisfaction and career dissatisfaction.¹¹ The 200 level medical students were most satisfied with the course, though there was no statistical significant difference amongst the various levels of medical students. ($X^2 = 11.891$, $df = 8$, $P = 0.156$) Majority of the medical students (86.0%) perceived medicine to be a stressful course. More students (91.2%) who were dissatisfied with the course found it stressful than those who were satisfied with the course (86.5%). Although this was not found to be statistically significant ($X^2 = 5.546$, $df = 4$; $P = 0.236$). This level of stress is high. Among the various levels of medical students, there was a statistical significant difference in their level of stress. The 400 level medical students were most stressed, followed by 600 level medical students. The least stressed students were the 200 level students followed by 300 level students. This could be as result of the fact that in 200 level and 300 level first semester, no examinations are taken. Medicine is known to be one of the occupations prone to work-related stress.¹² Stress management training is required to help the students cope with the pressure of the medical training that cannot be removed or minimized. This is because stress has a high cost for individuals, companies, organizations and for the society,¹² these include health impairments, loss of capacity to cope with working and social situation, loss of career opportunities, and even employment. It can give rise to greater strain in family relationships and with friends. In Companies or organization, the cost of stress takes many forms. These include absenteeism, higher medical cost of recruiting and training new workers. Stress also takes a heavy toll in terms of reduced productivity and efficiency.¹¹ A significant number of students (31.9%) were unwilling to study medicine again given a second chance. More students who were dissatisfied with the course (40.3%) were unwilling to study medicine again if given a second chance than students who were satisfied with the course (27.1%). This difference was found to be statistically

significant ($X^2 = 19.10$, $df = 4$, $P = 0.001$ [7.51E 04]. A significant number of students 112 (29.1%) had psychological morbidity. This is at variance with the findings of a study among first year medical students at the University of Edinburgh, where 17% of the medical students had psychological morbidity.¹⁰ It was also higher than the findings of a study among physicians in the same university where 21 (14%) of them were found to have psychological disorder. It has been well documented that adaptive capacities of medical students are hampered by psychiatric symptoms.¹³ Healthy medical students are likely to become healthy physicians.¹⁴ The students who were dissatisfied with medicine as a course had more psychological disorder than (42.1%) than those who were satisfied (25.0%) with medicine. There is a need to identify and correct the causes of course dissatisfaction among these groups of students in order to improve on the psychological states of the students. There is also a need for stress management training among the medical students as majority of them found the career stressful. There should be seminars for the students which will identify, eliminate sources of stress and enable them cope with stress intrinsic to medicine which can not be eliminated.

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