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The Attitudes of Medical Students in University of Port Harcourt to Cadaveric Dissection

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Abstract **Original Research Article**

Background: The attitudes of Medical Students to Cadaveric dissection was studied in students from 200-300 levels at the University of Port Harcourt. ***Materials and Methods:*** Questionnaires were administered randomly to 400 students in the departments of Anatomy, Physiology and Medicine in the Faculty of Basic Medical Sciences, College of Health Sciences; 362 students responded. ***Results and Discussion:*** Out of 400 students only 362 completed the questionnaires. Only the completed questionnaires were used for this study. The uncompleted ones were excluded. 149 (41.2%) were males and 213(58.8%) were females. The mean age was 22.6 years. 28 (7.7%) were between the ages of 17 and 19 years, 307 (84.8%) were between the ages of 20 and 25 years and 27 (7.5%) were between the ages of 26 and 30 years. From the result, 316 (87.3%) of the students had previously seen a dead body and 183 (50.5%) had been very traumatized by the event. When the students were asked about their feelings before they entered the dissecting room, majority of the students indicated that they were tensed, 149 (41.2%), 93 (25.7%) were excited 37 (10.2%) said they were peaceful, 31(9.1%) were fearful and 50 (13.8%) were without any obvious emotions. Analysis of the data obtained shows that although some students expressed a positive attitude toward the experience at their first entrance and during subsequent dissections, a few students reported a negative attitude initially, which includes fear, nausea, nightmares, rhinitis, irritation and redness of eye, revulsion at the smell of the cadavers, drowsiness and restlessness. ***Conclusion:*** These initial stress reactions dissipated after some weeks of exposure to dissection room. Suppression and repression were used by students to cope with these feelings. Some students reported that cadaveric dissections were a better way to learn or teach anatomy as it brings the knowledge home seeing the structures and how they are situated in proximity to one another.

Keywords: Attitude, Cadaver, Dissection, Medical Students.

INTRODUCTION

Cadaver is a dead human body used as dissection specimen for anatomical studies. Dissection means to cut apart or separate the tissues of the body for study. Cadaveric dissection therefore is the cutting apart or separation of the tissues and structures of a cadaver for the purpose of study [1].

A sound knowledge of anatomy is essential from the beginning of a medical education. This can only be achieved by exposing and examining the tissues and structures within the body, best revealed and studied by dissection. The dissection of human cadavers has served as the basis for understanding the structure and function of the human body for many centuries. Every fresh medical student can discover and learn firsthand as the structures of the body are systematically dissected and examined [2].

Dissection-based anatomical analysis facilitated the classification of bodily components, the development of a vocabulary for describing the body with clarity and precision and mapping the bodily organs and their surface projections which would be later used in physical diagnosis [2]. Despite recent changes in the organization of medical curricula, the use of dissection and dissected parts in the study of human anatomy remains important in anatomy education [3].

The first recorded dissection was around 300 B.C. by the Egyptians who were already well-versed in the craft of mummification. But it was a 16th century Belgian anatomist, Andreas Vesalius, who transformed the discipline into a science. He systematically dissected the human body, publishing his detailed account in the now classic seven-volume text De

Humani corporis fabrica (on the Fabric of the Human Body) [4].

The anatomy dissection laboratory represents a significant emotional challenge to many medical students and symptoms suggestive of Post-Traumatic Stress Disorder (PTSD) are found in a few of the students [4]. Majority of students expressed a negative experience, which kept them away from the dissecting laboratory, especially in recent times when the number of medical students have increased geometrically making the dissecting rooms look too small to accommodate them [5].

The emotional responses of students to the dissected body are more widely reported; several studies suggest that some students suffer stress reactions which significantly impair their learning of anatomy [5]. A medical student reports that "the first cut through the skin (of a cadaver) is really bad, but when you get down there and it begins to look like the anatomy book and it doesn't look like a human being anymore, it's not so bad [5,6]. Another student reports "I didn't really like the whole experience. The first time we went in I cried and have since felt like crying about it too. I find it difficult each time we go into the lab and it takes a while before I can participate in dissection. It is improving each time though" [5, 6]. The student who has experience with the dead body will be better equipped to deal with issues surrounding death and more aware of medical uncertainty, which will contribute to them becoming better clinicians in the future [7]. Some reports showed that the course of gross anatomy has profound effects on medical students. This study was therefore undertaken to assess the attitudes of medical students to cadaveric dissection.

Some studies have been done in the past on cadaveric dissection, and teaching [8-10, 15-22].

This study was aimed at determining the attitudes of medical students in University of Port Harcourt to cadaveric dissection.

The objectives are to determine the emotional and psychological reactions of medical students to their first exposure to dissection, coping mechanism employed by medical students to adapt to the stresses and fears they face in the dissecting room and the effect on their academic performance.

MATERIALS AND METHODS

The study was descriptive cross-sectional conducted on medical students in the second and third year of their respective programmes (200-300 level) at the University of Port Harcourt. Questionnaires were used. A total sample size of four hundred volunteers were recruited and 400 questionnaires were distributed randomly to students in the departments of Anatomy, Physiology and Medicine in the Faculty of Basic Medical sciences, College of Health Sciences. The anonymity of the participants was respected.

The sampling method used was stratified random sampling to have a good representation of the students in the various programmes who do anatomy dissection. The comprehensive list of the class was used as a guide in the sampling process, table of random numbers was used to select who should be recruited into the study from the class list. All those selected were contacted, informed about the aim of the study and given a copy of the consent form to sign before being considered as part of the study. Those that did not give consent where replaced with others by repeating the same process of selection. The questionnaires used for the study were pre-tested in another population before commencement of the study.

The questionnaires consist of 15 questions. Questions 1-9 comprised questions relating to demographics and pre-dissection information of the respondents, any previous exposure to dead human bodies and varying degrees of fear or stress responses. Questions 10-15 comprised questions relating to physical, emotional and cognitive reactions resulting from students' exposure to dissecting room at first and subsequently, and also to assess the coping strategies that the students might have used. Provision was made on all questionnaires for students to make any additional comments they might feel prompted to express which was not stated in the options.

The completely filled questionnaires were retrieved from the students. Relevant data was obtained from the information given and analysed using descriptive statistical tool in SPSS version 21, with the results represented in tables.

RESULTS

Out of 400 students only 362 completed the questionnaires. Only the completed questionnaires were used for this study. The uncompleted ones were excluded. 149 (41.2%) were males and 213(58.8%) were females. The mean age was 22.6 years. 28 (7.7%) were between the ages of 17 and 19 years, 307 (84.8%) were between the ages of 20 and 25 years and 27 (7.5%) were between the ages of 26 and 30 years.

Some of the questions asked in the questionnaires and the answers given are analysed below.

Table-1: Demographics and per-dissection questions

Questions	Responses	Number of respondents	Percentages (%) of respondents
Departments	Anatomy	206	56.9
	Physiology	91	25.1
	Medicine	65	18.0
Sex	Males	149	41.2
	Females	213	58.8
Age	17-19	28	7.7
	20-25	307	84.8
	26-30	27	7.5
Previously Seen a dead body	Yes	316	87.3
	No	46	12.7
How did you feel before you entered the dissecting room for the first time?	Peaceful	37	10.2
	Tensed	149	41.2
	Fearful	33	9.1
	Excited	93	25.7
	Without any feeling	50	13.8

Table-2: Physical, emotional reactions of students in dissecting room

Questions	Responses	Number of respondents	Percentages (%) of respondents
Feeling on first entrance to the dissecting room	Fearful	119	33.2
	Excited	114	31.8
	Felt like crying	32	8.9
	Cried	03	0.8
	Without any feeling	90	25.1
Feeling in course of dissecting the cadaver	Nauseated	27	5.2
	Irritated by smell of cadaver	168	32.5
	Fear of infection		
	Rhinitis (running nose)	34	6.6
	Irritation and redness of eye	71	13.7
		217	42.0
Effects of dissecting Cadaver	Drowsiness	143	41.2
	Weakness	114	32.9
	Lack of concentration	36	10.4
	Nightmares restlessness	18	5.2
		36	10.4
When experiences started diminishing	Two weeks	180	60.4
	Four weeks	73	24.5
	Six weeks	24	8.1
	Eight weeks	09	3.0
	Ten weeks	12	4.0
Coping mechanism	Suppression	76	22.8
	Repression	13	3.9
	Feeling of a doctor to be	216	64.7
	Never got used to it	29	8.7

DISCUSSION

From the result, 316 (87.3%) of the students had previously seen a dead body (Table I) and 183 (50.5%) had been very traumatized by the event. Those students who had previously seen a dead body still indicated negative reaction on entering the dissection room. This is in accordance with the studies of Nnodim [13] who reported preclinical student reactions to dissection, death and dying. Nnodim reported that 62 students had seen a dead body previously and 30 students had been bereaved within two years preceding the study. However, neither prior exposure to a dead body nor bereavement was a safeguard against persistent upset by dissection [13].

When the students were asked about their feelings before they entered the dissecting room, majority of the students indicated that they were tensed, 149 (41.2%), 93 (25.7%) were excited 37 (10.2%) said they were peaceful, 31(9.1%) were fearful and 50 (13.8%) were without any feeling. This is not surprising

because seeing a dead body is not part of everyday experience. To some students, entering the dissection room was their first encounter with dead bodies. This corroborates the reports of previous authors [5, 6].

On entering the dissecting room for the first time, 119 (33.2%) of the students indicated that they were fearful. This seems to agree with a similar research carried out by Abu-hijleh *et al.*, [14] on the attitudes and reactions of Arab medical students to the dissecting room. They found out that 46% of their respondents indicated varying degree of fears on first entering the dissecting room. 114 (31.8%) were excited. This again is consistent with the findings of McGavey *et al.*, [3] who reported that 95% of the respondents found the prospect of their first visit to the anatomy room exciting.3 32 (8.9%) felt like crying, 03 (0.8%) cried and 90 (25.1%) were without any obvious feelings.

On the coping mechanism employed, 216 (64.7%) said that it was the feeling of a doctor to be that was used to cope with the feelings, they had, 76 (22.8%) indicated that it was by suppression, 13 (3.9) said it was by repression and 29 (8.7%) said they never got used to the dissecting room. This finding is in agreement with the report of Williams *et al.*, [21].

When the students were asked about their view about models, audio visuals, prosected specimens and computer aids in the learning of anatomy, 321 (93.%) of the students said that they should be a supplement to the dissection of human cadavers and 21(6.1%) said that dissection of cadavers should be completely replaced by these aids. This agrees with the reports of Eppler *et al.*, Gosh and Whelan respectively [8-10].

The students attributed their stress reactions to the embalming fluid (chemical), the size of the dissecting room and the number of cadavers. Some of their comments reflected distress: some of the respondents indicated that they felt like not using the hands to eat even after a thorough hand washing, the odour of the cadaver and embalming fluid deterred them from entering the dissecting room, reminiscence of the dissecting room and the cadaver caused a sort of distraction and lack of concentration which eventually resulted in a poor academic performance. These were also reported in previous studies [16, 17, 19, 20].

Moreover, some students had to develop a coping mechanism that enabled them to adjust to the cadaver dissection and the room experience because they thought dissection was a better way to learn or teach anatomy.

The study revealed that dissection of human body shows the beauty of anatomy and to further have a firm grip of anatomy, instructors (members of staff) should be available to demonstrate the process.

CONCLUSION

This study on the attitudes of medical students in University of Port Harcourt to cadaveric dissection, shows that the dissection of human cadavers has a psychological and traumatic effect on some students. Those students affected by the stress of dissection are unable to separate it from their academic lives. A significant percentage of students reported initial adverse effect which dissipated relatively rapidly. There remains a few of the students who reported that they had high level of stress which never diminished even after ten weeks of dissection.

However, some students reported that cadaveric dissections were a better way to learn or teach anatomy as it brings the knowledge home seeing the structures and how they are situated in proximity to one another.

RECOMMENDATIONS

We recommend that the department or faculty should have counsellors to provide support for the few students who might be temporarily disturbed by the potentially traumatic experience of the dissecting room and prepare the students psychologically before their entrance to the dissection room. In addition, the dissecting room should be enlarged since the number of students increases each session and more cadavers made available to reduce the number of students allocated to each cadaver. This will make dissection more interesting to the students and enable them adjust quickly to the stresses.

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We write to state that all authors have contributed significantly and that all authors are in agreement with the contents of the manuscript. 'Author A' (Peter D. Okoh) designed the study and protocol, wrote the first draft of the manuscript; reviewed the design, protocol; 'Authors B' (John N. Paul) examined the intellectual content of the manuscript, 'Authors C' (Edna I. Ogbonda) did the analysis of the study and literature search. All authors read and approved the final manuscript.

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