

Attitude of Preclinical Students to Cadaver Dissection in a South West Nigerian Medical School

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Abstract: Dissection of cadaver has been central to medical education since the Renaissance however, there are variety of mixed feelings and emotional reactions experienced by students when they are exposed to human cadavers. This present study was conducted to determine the altitude of pre-clinical students in their 1st year training in a medical school to cadaver dissection in anatomical studies. Questionnaire with 20 statements was administered to 65 students of Osun State University, Osogbo, Nigeria. The questionnaires required them to choose one out of three possible responses; yes, no or undecided as its best and truthfully describe their response to the question. However, out of the 65 students involved in this survey, 60 students responded correctly and completely and their answers were analyzed by descriptive statistics. Majority of the students (70%) found their first visit to the dissection room exciting, 46.7% were upset at the beginning of the dissection while 36.7% showed anxiety and stress immediately before and during dissection. About 76.7% were mentally prepared for dissection and 20% were not. Total 81.7% of the students agreed that dissection enhanced their thinking ability and 93.3% were of the option that dissection provided the best method for learning anatomy. About 90% of them considered cadaver dissection as ethically acceptable while 50% reported that prior experience of a dead body helped them develop a better coping mechanism. Most students (98.3%) considered the dissection of cadaver very important in anatomy learning. Total 86.6 and 91.7% of medical students reported that cadaver dissection is religiously and culturally acceptable, respectively. Conclusively, it may be inferred that cadaver dissection is still significant in anatomy learning.

Key words: Medical students, cadaver, stress, South West Nigeria, education, feelings

INTRODUCTION

Dissection of cadaver has been central to medical education since the Renaissance and the use of cadaver has been traditionally the chief pillar for anatomy learning. (Rajkumari *et al.*, 2008). On the other hand, Anatomy which is the study of the structure of the human body is one of the most basic and important subjects studied by medical students as they begin their medical career (Rajkumari and Singh, 2007). The use of cadaver as a learning tool has been practiced for >500 years with many virtues attributed to it (Sanner, 1997; McLachlan *et al.*, 2004; Prakash *et al.*, 2007).

Dissection in anatomy learning most especially in gross anatomy is considered as an essential requirement for the three dimensional aspect of human anatomy and the most universally recognized step in becoming a doctor or anatomist (Rajkumari *et al.*, 2008; Hill and Anderson, 1991). However, some researchers believe that human anatomy can be taught effectively without students

coming in contact with cadaver. They concluded that medical students who learnt human anatomy by prosection and audiovisuals perform just as well in anatomy examination as those who learn by dissection (Nnodim *et al.*, 1996; Cahill and Leonard, 1997; Druce and Johnsons, 1994). In recent times there has been a lot of controversy surrounding the ethics and effectiveness of using human tissue as a learning tool (Izunya *et al.*, 2010).

In particular, there has been concern that work on cadaver may have negative consequences on students that may out-weigh the benefits of using cadaver as a learning tool. Cadaver dissection has been identified as been expensive time consuming, potentially hazardous to human health and difficult to establish for new medical schools (Azis *et al.*, 2002; McLachlan, 2004) hence, dissection which is a learning modality has been marginalized from medical curriculum to the despair of some scholars (Jones, 1997; Dinsmore *et al.*, 1999). In addition, other area of concern is the variety of mixed feelings and emotional reactions experienced by students

when they are exposed to human cadavers for the 1st time in the dissection room (Rajkumari *et al.*, 2008). Studies have showed that no experience has a more profound input on health science students than their first encounter with cadaver (Abu-Hijleh *et al.*, 1997; McGarvey *et al.*, 2001). However, having contact with cadaver for the first time can be stressful to some students (Parker, 2002).

There are few studies about the attitude of 1st year pre-clinical students towards cadaver dissection in medical education literatures. Results of the few studies on student's opinions are conflicting (Benbow, 1990; Dinsmore *et al.*, 1999; Pearse and Parkin, 2000). However, just a study has describe the attitude of 1st year pre-clinical students in Nigerian University but this was only a survey of student's attitude in that South-South (Niger Delta region) part of the country. This study, however did not consider the cultural and religious acceptability of cadaver dissection in anatomical studies. Therefore, it is important to determine the attitude of 1st year pre-clinical students towards cadaver dissection in a South-West Nigerian Medical schools and also to determine the religious and cultural acceptability since Nigerian is a country with diverse culture and religion which differs geographically.

MATERIALS AND METHODS

Type and place of study: This study was quantitative and investigatory in nature. It was carried out in the Department of Anatomy, College of Health Sciences, Osun State University, Osogbo campus, Osun State, Nigeria.

Study population: Sixty five 1st year preclinical students of Medicine in the College of Health Sciences, Osun State University (2010/2011 session) volunteered to participate in the study.

Data collection: All the 65 medical students participated in the study. The objectives of the studies and structure of the questionnaire containing 20 items were explained to the each student before the questionnaires were distributed to them. For each question, the student had to choose one of the three possible responses: yes, no or undecided. The questionnaire provided information about the first visit to the dissection room; emotional shock, feelings, anxiety and stress at initial exposure to cadaver; mental preparation before dissection; sympathy and respect for the cadaver; prior experience with a dead body before dissection and its impact on coping mechanism; possible alternatives for replacing cadaver dissection by plastic models, computer assisted training programme

importance and indispensability of cadaver dissection, ethical, religious and cultural acceptability of cadaver dissection. The ethnicity of the students based on the major tribes in Nigeria; Hausa, Igbo and Yoruba and the two most predominant religious background; Christians and Muslims were considered.

Data analysis: The data was analyzed using SPSS Version 11.0. Descriptive statistics was utilized in drawing inferences from the analysed data.

RESULTS AND DISCUSSION

Out of the sixty five students that participated in the study, only sixty students completed the questionnaire correctly. The age, gender, religion and ethnicity were considered. The mean age was 21.12±2.04, twenty six were males while thirty four were females, forty four were Christians and fifteen were Muslims while one belongs to other religion. Six of the students were Igbo and fifty four belong to Yoruba tribe as shown in Table 1. The responses of the students regarding the attitude towards cadaver dissection are shown in Table 2.

There has been much debate over the years on the values of cadaver dissection to medical students in Human Anatomy courses. Some studies have indicated that students learn anatomy as well by studying prosections as they do by traditional dissecting (Bernard, 1972; Peppler *et al.*, 1985; Jones and Welsh, 1998; Nnodim *et al.*, 1996). The present study was conducted to explore further insights in this area.

Analysis of the questionnaire showed that most (70%) students found their first visit to the dissecting room exciting, 46.7% were upset at the beginning of dissection and 38.3.7% expressed emotional shock at the initial exposure while 58.3% did not show any emotional shock. The response to emotional shock is contrary to earlier studies that reported that more than half of the students experience emotional shock at initial exposure

Table 1: Demographic characteristics of the students

Characteristics	Frequency	Percentage
Sex		
Female	34	56.7
Male	26	43.3
Ethnicity		
Hausa	0	0.0
Igbo	6	10.0
Yoruba	54	90.0
Religious background		
Christianity	44	73.3
Muslim	15	25.0
Others	1	1.7

Table 2: Questionnaire and responses of students

Particulars of question	No. of Yes response (%)	No. of No response (%)	No. of undecided response (%)
Do you find your first visit to the dissection room exciting?	42 (70.0)	17 (28.3)	1 (1.7)
Are you upset at the beginning of dissection?	28 (46.7)	30 (50.0)	2 (3.3)
Do you feel any emotional shock at initial exposure to cadaver?	23 (38.3)	35 (58.3)	2 (3.3)
If so, whether the shock decreases gradually?	44 (73.3)	12 (20.0)	4 (6.7)
Do you have any apprehension to handle the cadaver directly?	21 (35.0)	34 (56.7)	5 (8.3)
Do you experience considerable anxiety and stress immediately before and during dissection?	22 (36.7)	36 (60.0)	2 (3.3)
Do you prepare mentally for dissection of human cadaver?	46 (76.7)	12 (20.0)	2 (3.3)
Do you ever think that the cadaver you dissected was once a living human being like you?	57 (95.0)	2 (3.3)	1 (1.7)
If so, do you ever have any sympathy and respect for him/her?	50 (83.3)	9 (15.0)	1 (1.7)
Do you think that you can do the dissection with assistance from your teacher?	53 (88.3)	6 (10.0)	1 (1.7)
Do you have any prior experience of a dead human body before entering the dissection room?	30 (50.0)	30 (50.0)	0 (0.0)
If so, whether the prior experience helps you in developing a better coping mechanism to adjust to cadaver dissection?	30 (50.0)	27 (45.0)	3 (5.0)
Do you think that dissection enhance the skill of thinking in a logical manner?	49 (81.7)	9 (15.0)	2 (3.3)
Do you think that dissection gives the best method for learning anatomy?	56 (93.3)	3 (5.0)	1 (1.7)
Do you think that cadaver dissection for anatomical learning is ethically acceptable?	54 (90.0)	2 (3.3)	4 (6.7)
Do you think that cadaver dissection technique can be replaced by plastic models, computer assisted training programme, etc. in the near future?	27 (45.0)	31 (51.7)	2 (3.3)
Do you think that actual hands on training on cadaver dissection gives better results than demonstration of prosected specimen?	53 (88.3)	4 (6.7)	3 (5.0)
Do you think that cadaver dissection is still considered important and in dispensable in Anatomy learning?	59 (98.3)	1 (1.7)	0 (0.0)
Do you think that cadaver dissection for anatomical learning is culturally acceptable?	55 (91.7)	2 (3.3)	3 (5.0)
Do you think that cadaver dissection for anatomical learning is religiously acceptable?	52 (86.6)	4 (6.7)	4 (6.7)

(Izunya *et al.*, 2010). This might be due to the effect of counseling on students before they are allowed access to the dissection room. Medical students in the institution are first counseled on issues relating to death and cadaver dissection as this have been shown to reduce stress and shock faced by students at their first exposure to cadavers (Javadnia *et al.*, 2006; Ajao *et al.*, 2008). The majority of those that experience shock (33.3%) disclosed that the shock decreased gradually while 10% said their shock decreased with time. About 36.7% experienced anxiety and stress whereas 60% did not show any anxiety and stress immediately before and during dissection.

These phenomena have been reported as several studies suggest that some students suffer stress reaction due to formalin fumes (Dubhashi *et al.*, 2011) which significantly impair their learning of Anatomy (Finkelstein and Matters, 1990; Evans and Fitzgibbon, 1992; Cahill and Leonard, 1997) while Rajkumari *et al.* (2008) reported that most 1st year medical students suffered very little or no stress at all on their first visit. On the issue of apprehension towards initial expose to cadaver, researchers observed that one third (35%) of the student expressed apprehension to handle cadaver directly while 56.7% did not. This is in consonance with report of Izunya *et al.* (2010) and Rajkumari *et al.* (2008) were 35 and 32.5% of medical student, respectively experience some level of fear before and during the initial dissection. On student's mental preparedness to face cadaver dissection, the findings show that 76.7% of the students were mentally prepared for dissection while 20% were not. About 50% of medical students had seen a dead body

before. Similarly 50% of the students who had prior experience of dead body, developed a better coping mechanism towards cadaver dissection. This is in consonance with previous studies that first year pre clinical students rapidly developed a coping mechanism that enables them to view cadaver dissection as an occupation (Charlton *et al.*, 1994; Horne *et al.*, 1990). Literature has also shown that students who have experience with the dead body will be better equipped to deal with issues surrounding death and more aware of medical uncertainty which will make them better doctors (Parker, 2002).

It is interesting to note that majority (88.3%) stated that they prefer dissection with assistance of their teachers. This is in line with report by Rajkumari *et al.* (2008). On the issue of replacing cadaver dissection with plastic model, computer assisted training programme in the nearest future, 45% of students favoured such replacement while 51.7 did not. This is in agreement with other studies (Parker, 2002; McLachlan *et al.*, 2004) that reported that dissection gives students a better appreciation of the three-dimensionality view of human anatomy while plastic model and computer programmes will not. Moreover, removal of cadaver dissection in anatomy learning will impair the student's ability to apply scientific method during diagnosis (Azis *et al.*, 2002). On the preferred method of learning anatomy, it was observed that an over whelming majority (93.3%) believed that dissection remains the best method of anatomical studies, this is in line with the view of many anatomist although, there is little evidence for this assertion (Cahill and Leonard, 1997). Expectedly, 81.7% agreed that cadaver

dissection enhanced their skill of thinking in a logical manner. Furthermore, majority of student (88.3%) agrees that actual hands on training on cadaver gave better results than demonstration by the projector. This is in consonance with earlier studies (Nnodim *et al.*, 1996; McLachlan *et al.*, 2004; Izunya *et al.*, 2010). In the same vein, researchers observed that 98.3% of students thought that cadaver dissection is still considered important and indispensable in anatomical studies. About 90% of students agreed that cadaver is ethically acceptable, 95% agreed that the cadavers they dissected were once a living human being like them and 83.3% of them had sympathy and respect for them. Finally, this studies reports for the first time the cultural and religious acceptability of cadaver dissection for anatomical learning. Interestingly, 91.7 and 86.6% of the students agreed that cadaver dissection is accepted culturally and religiously, respectively.

CONCLUSION

This study shows that despite the various reports available in literature, it may be inferred that cadaver dissection is still considered important and indispensable in anatomical studies. This study shows that the attitude of medical students in the South West and South South part of Nigeria is similar. It is suggested that attention should be paid to preparing student mentally and emotionally through counseling as these help to cope better and also alleviate their stress and apprehension, we also recommend that teachers should assist students in dissection of cadaver since a vast majority believe they can do better with the assistance of teachers.

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