ATTITUDE OF PRECLINICAL MEDICAL STUDENTS TOWARDS ANATOMICAL DISSECTION OF CADAVER IN USMANU DANFODIYO UNIVERSITY, SOKOTO, NIGERIA

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ABSTRACT

Attitude is a hypothetical construct that represents an individual's like or dislike for an item. Attitudes are positive, negative or neutral views of an "attitude object': i.e. a person, behaviour or event. A survey of the attitude of 59 preclinical medical students in 2009 (2008/2009 session), towards dissection in human anatomy was made by administering a structured questionnaire, from the Usmanu Danfodiyo University, Sokoto, Nigeria. Of this number, 48(81%) were males (M), and 11(19%) were females (F) (M: F ratio = 4.4:1). The differences between males and females learning the subject of anatomy by dissection with minimal or no pressure, being active during dissection, the value of dissection to understanding anatomy and the usefulness of the hand drawn diagrams to the understanding of anatomy were statistically significant (P<0.01). In conclusion, males students liked dissection and appreciated that its importance could not be overemphasized in aiding the understanding of the anatomy subject, than their female counterparts.

Keywords: *Attitude, preclinical medical students, dissection, Sokoto*

INTRODUCTION

Attitude is a hypothetical construct that represents an individual's like or dislike for an item. Attitudes are positive, negative or neutral views of an "attitude object': i.e. a person, behaviour or event (Jung, 1966). Dissection of the human body is crucial for many medical preclinical courses in the traditional medical schools (Nnodim, 1990). It is unique in distinguishing medical from non-medical students in biological sciences (Firth). In some centres, dissected cadaver-based anatomy is no longer taught (Older, 2004). The patient presents the physician with a problem. The art and science of medicine is defining the problem with as much precision as possible. Defining the anatomical site of the lesion is crucial if the physician is to resolve the problem effectively and compassionately. Therefore, a sound knowledge of anatomy is essential from the beginning of a medical education. This can only be achieved by exposing and examining the body, best revealed and studied by dissection (Bliss and Osler, 1991).

Dissecting a cadaver the student encounters the reality of life, morbidity and mortality, the awesome responsibility of the physician caring for the patient (Older, 2004). Dissection puts undergraduates at the sharp end of medical education (Engel, 1971). They may experience anxiety and stress not as a detachment or indifference but as a defence mechanism, often coming for the first time, connecting with reality and a detached concern (Older, 2004). Dissection-based anatomical analysis facilitated the classification of the 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 (Bliss and Osler, 1991). This study aims at assess the attitude of the preclinical medical students to dissection in human anatomy at the Usmanu Danfodiyo University, Sokoto, Nigeria.

MATERIALS AND METHODS

Of the total 110 third year medical students in 2009 (2008/2009 session) from Usmanu Danfodiyo University Sokoto, Nigeria, involved in the study, only 59 (comprising 48 males and 11 females) satisfied the inclusion criteria. The students were appealed to complete a structured questionnaire irrespective of their sex, age, whether or not they were repeating the class. This freedom in the choice of respondents was necessary to avoid bias in the study. The students were also informed that their response to the questionnaire would contribute to solving problems encountered by students in dissection in anatomy. Only students who completed (answered all questions thoroughly in the) questionnaire were considered for the study. A total of 51 students were excluded from the study due to failure to answer one question or the other in the questionnaire. The students wilfully volunteered information on their personal attitudes to dissection in anatomy. This include interest, whether or not dissecting under pressure frequency of reading, time of reading, understanding anatomy with or without attending dissections, ability to dissect personally. Each student answered the questions contained in the questionnaire.

In testing for validity, the questionnaire was checked by colleagues in Anatomy and Psychiatry departments, noting relevance and adequacy of the questions. The questionnaire was further checked by teachers in Psychology and Education departments of the University. The final questionnaire was a consensus of their opinions. Data were initially sorted manually and tabulated computed using Microsoft Excel and Minitab 15.1 statistical package. Chi-square test was used for comparison of proportions (Harry and Steven, 1995). The questions asked were:

1. Were you under initial pressure about anatomy before you started the course?
2. How many hours in a week, beginning from Monday to Sunday inclusive did you use for your normal private studies in Anatomy?
3. Were you personally dissecting (active) during dissection?
4. Do you read up the area of the body to be dissected ahead of the dissection?
5. Do you read up the lecture topic ahead of the lecture?
6. Are the hand drawn diagrams (illustrations) on the black board useful to your performance?

7. Do you copy the hand drawn diagrams (illustrations) in your Anatomy drawing book?
8. Are the hand drawn diagrams useful for your revision?
9. Do you use an atlas of Anatomy and a text book manual for guidance and identification of structures in cadavers during dissection?
10. One can understand Anatomy without attending dissection.

The students were allowed to answer yes or no as the case was.

RESULTS AND DISCUSSION

The results obtained are summarized in Tables 1-4. A total of 59 students were involved in this study. Of these, 81% were males (M), and 19% were females (F) (M : F ratio = 4.4 : 1).

Table 1: Response of students in relation to being under pressure or not in learning anatomy.

Sex	Under pressure	Not under pressure	Total
Female	8*	3	11
Male	17	31*	48
Total	25	34	59

χ^2=7, df =1, p < 0.01

* Statistically significant in comparison to other values within the same sex at P<0.01

χ^2

Table 2: Response of students in relation to actively participating in dissection or not.

Sex	Active	Not active	Total
Female	3	8*	11
Male	28*	20	48
Total	31	28	59

=3.5, df =1, p < 0.01

* Statistically significant in comparison to other values within the same sex at P<0.01

Table 3: Response of students in relation to understanding anatomy with or without dissection.

Sex	Without	Without	Total
Female	4	7*	11
Male	4	44*	48
Total	8	51	59

=6.1, df =1, p < 0.01

* Statistically significant in comparison to other values within the same sex at P<0.01

Table 4: Response of students with regards to the relevance of the handrawn (sketchy) diagrams (on the black board) to the understanding anatomy.

Sex	**Useful**	**Not useful**	**Total**
F	3	8*	11
M	40*	8	48
Total	43	16	59

=14, df =1, p < 0.01

* Statistically significant in comparison to other values within the same sex at P<0.01

A sound knowledge of anatomy is essential if the medical practitioner is going to accurately define and successfully treat the problem presented by the patient. The dissected cadaver remains the most powerful means of presenting and learning anatomy as a dynamic basis for solving problems (Older, 2004). Medicine is the compassionate solving of problems by the application of scientific knowledge. This is best achieved by the exposure and examination of the tissues and structures inside the body, and is best revealed by dissection (Older, 2004). Educating medical undergraduates in the principles of anatomy has many facets: it introduces students to the reality of death; develops their manual dexterity; emphasises the concept of biological variation and demonstrates common pathologic changes; teaches the basic language of medicine; assists with social bonding and communication; and instructs how to assess information (Older, 2004).

This study indicates that most of the female students were under pressure in learning anatomy. This is statistically significant (P<0.01) when compared to their male counterparts. Of the total number of students involved in the study, a proportion of 14% was found to be under pressure from the female and 29% from the male groups, respectively. A proportion of 65% of the male students responded not to learning anatomy under pressure. This is statistically significant (P<0.01) when compared to their female counterparts. Of the total students under this study, 53% of males were found to be free from pressure while dissecting. This is statistically significant when compared to only 5% of the females found to be learning anatomy by dissection without pressure.

A proportion of 73% of female students admitted not being active during dissections. This is statistically significant when compared to their male counterparts. Of the total number of students involved in the study, a proportion of 14% was found not to be active during dissection from the female and 34% from the male groups, respectively. A proportion of 58% of the male students were found to be active during dissection. This is statistically significant (P<0.01) when compared to their female counterparts. Of the total students under this study, 47% of males were active during dissection. This is statistically significant (P<0.01) when compared to only 5% of the females found to be active in learning anatomy by dissection. 67% of female students admitted not appreciating the subject of anatomy without dissections. On the other hand, 92% of the male students responded that dissection is mandatory for them to understand anatomy. Of the total number of students under the study,

75% of males and only 12% of females admitted that dissection is indispensable for understanding anatomy, respectively. A proportion of 36% of female students claimed to appreciate the subject without attending dissections. This constitutes 7% of the total students studied. However, only 8% of the male students claimed to understand anatomy without attending dissection. This group constituted 7% of all the students under the study.

83% of male students admitted on the usefulness of the hand drawn diagrammes in aiding their learning of anatomy. This is statistically significant when compared to only 27% of females appreciating the usefulness of these diagrams in learning anatomy. Of the total number of students under the study, 68% of males and only 5% of females, respectively, considered the drawings useful to them in aiding their ability to understand anatomy. A proportion of 72% of female students discredited the usefulness of the hand drawn diagrams to understanding anatomy. However, only 17% of the male students discredited the value of these diagrams to understanding the subject of anatomy. Each group that discredited the value of the diagrams constituted 14%, respectively, of the total number of students studied.

The student must come to grips with human mortality and morbidity (Older, 2004). Of course the patient comes first and many argue that the cadaver is the first patient (Bliss and Osler, 1991). Common-sense and trust appear to suffice in most cases (Kasper, 1969). The 'nodal point' in medical education can lead to the compassionate detachment that is essential if a physician is to cope with issues involved in death and bereavement (Coulehan et al., 1995). A programme which endeavours to connect the student with reality teaches students to observe, conceptualise and test hypotheses (Pelligrino, 1974). The removal or attenuation of cadaver dissection is bound to impair the student's ability to apply the scientific method during diagnosis (Bertman and Marks, 1985). The sensation of touch between physician and patient is essential. This is best learned early in the dissecting room (Evans and Fitzgibbon, 1992). Hands-on teaching on real cadavers is the first experience of the structural organisation of the body, both at the surface and in depth, and leads to a real understanding of the three-dimensional configuration of patients' anatomy.

CONCLUDING REMARK

Human dissection is the one remaining educational modality that teaches preclinical medical students how to use their hands. This helps them to develop touch-based skills which can be transformed to palpation, percussion and auscultation (Evans and Fitzgibbon, 1992). It is better to learn on a cadaver how to use instruments than to experiment on patients. The manual skills learnt in the dissecting room are essential in almost every branch of the medical profession (Older, 2004). One of the most important concepts in medicine is biological variation (Aziz and McKenzie, 1999). No two individuals are necessarily the same anatomically. As students wander

from one cadaver to the next in the dissecting room, they will see anatomical variation associated with developmental anomalies. It may reveal something new, previously unknown, and especially important in the rapidly evolving field of molecular developmental anatomy (Older, 2004).

Students must be prepared for unpredictable variations. These are best learned in the dissecting room laboratory, not with simplified computers or even prosections, although they can be used to enhance the variations seen in the dissecting laboratory (Older, 2004). One of the consequences of poor over simplified undergraduate training is inadequate post-graduate knowledge, which will lead to misdiagnosis and even malpractice (Muller, 1984). In conclusion, males students liked dissection and appreciated that its importance could not be overemphasized in aiding the understanding of the anatomy subject, than their female counterparts.

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