

Behavioural responses of medical students on exposure to cadaver dissection

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Abstract

Objective: Medical Students react differently when exposed to cadaver dissection for the first time. Reactions range from fear to anxiety, conjunctiva irritation, nausea and vomiting. Long term effects include loss of appetite, insomnia, headaches, to mention a few despite its importance in the training of Medical students. This study therefore seeks to determine the influence of cadaver dissection on behavioural patterns and its effect on the consumption of meat among Medical students.

Method: This cross sectional survey includes 240 volunteer first year Medical and Paramedical students of the Delta State University, Abraka, Nigeria, who correctly filled and returned administered questionnaires with thirteen statements of problems. The students were to choose either YES or NO for each statement put forward.

Results: Result reveals 57.9% were excited at first exposure, 61.7% experienced emotional shock, 47.5% experienced fear while virtually all respondents 93.0% experienced eye irritation. A later observation revealed 44.2% experienced headache, 57.5% dizziness, 48.0% experienced disturbed sleep, 27.1% experienced loss of appetite, 23.8% experienced dislike for meat and 19.2% experienced unusual thirst.

Conclusion: Most of their experiences could be associated with improper orientation before contact with cadaver, smell of formalin and its constituents. However most students believed cadaver dissection is important in their training. Therefore, proper orientation before first contact with cadaver could help reduce some of the behavioural responses observed.

Keywords: *Cadaver, dissection, behavioural response*

Résumé

Objectif : Les étudiants en médecine réagissent différemment lorsqu'ils sont exposés à la dissection de cadavre pour la première fois. Les réactions vont

de la peur à l'anxiété, l'irritation conjonctive, des nausées et vomissements. Les effets à long terme inclure la perte d'appétit, l'insomnie, des maux de tête, pour n'en citer que quelques-uns en dépit de son importance dans la formation des étudiants en médecine. Cette étude cherche donc à déterminer l'influence de la dissection des cadavres sur les comportements et leurs effets sur la consommation de viande parmi les étudiants en médecine.

Méthode : Cette enquête transversale comprend 240 bénévoles étudiants en première année de médecine et paramédical de l'Université de l'Etat de Delta, à Abraka, au Nigéria, qui ont correctement rempli et renvoyé les questionnaires administrés avec treize déclarations de problèmes. Les étudiants devaient choisir OUI ou NON pour chaque énoncé proposé.

Résultats : Le résultat révèle que 57,9% ont été excités à la première exposition, 61,7% ont éprouvé un choc émotionnel, 47,5 % ont eu peur et pratiquement tous les répondants 93,0% ont éprouvé une irritation des yeux. Une observation ultérieure a révélé que 44,2% ont eu des maux de tête, 57,5% d'étourdissements, 48,0% de sommeil perturbé, 27,1% de perte d'appétit, 23,8% d'aversion pour la viande et 19,2% de soif inhabituelle.

Conclusion : La plupart de leurs expériences pourraient être associées à une mauvaise orientation avant le contact avec le cadavre, l'odeur de formol et ses constituants. Cependant, la plupart des étudiants croient que la dissection du cadavre est importante dans leur entraînement. Par conséquent, une bonne orientation avant le premier contact avec le cadavre pourrait aider à réduire certaines des réactions comportementales observées.

Mots-clés: *Cadavre, Dissection, Réponse comportementale*

Introduction

Anatomy which deals with the structure of the body is vital to the training of medical student. It is one of the three core subjects taught at the preclinical level. Traditionally, gross anatomy is taught in various medical schools with the aid of cadaver or cadaver specimen, this is accepted universally [1]. Cadaver, as a teaching and demonstrating tool is also accepted in Nigeria. Most medical students look forward to

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dissecting cadaver for the first time. Dissection tends to bring about familiarity with the human body. All association of anatomy clearly state cadaver dissection provides an essential building block of knowledge for medical students [2].

Previous studies revealed cadaver dissection contributes to the ritual transformation of lay people to medical practitioners [2]. 'Dissection of cadaver is a daunting experience and is regarded as the first rite of passage in medical training'[3]. Dyer and Thornlike (2000) revealed the persistence and universality of cadaver dissection as features of medical education [4]. For over five hundred years, human cadaver has been constantly used as a learning tool [5-7]. Cadaver dissection seems to be the most accepted universal tool for training of medical students. The first medical student to dissect a cadaver was Andreas Vesalius [8].

In the last few years however, concern and controversies have ensued in the effectiveness and appropriateness of using humans as learning tools. Some researchers feel prosected bodies or models are as effective as dissection. [5,9,10]

Aziz *et al.*, (1999) admit cadaver is without doubt an unwieldy tool in teaching anatomy to medical students despite his promotion of re-evaluation of cadaver as teaching tool [11]. He claimed anatomy dissection exposes students to high level of formaldehyde and diseases from fixation resistant viruses. Dubhashi *et al.*, (2011) also revealed that students, during dissections are exposed to high level of formaldehyde which is well documented for its toxic effects [12]. Older (2004) reveals students may experience anxiety and stress when exposed to cadaver dissection [13]. Some researchers claim prosected bodies are as effective as traditional dissection in the study of anatomy [5, 9]. Some also believed cadaver dissection is archaic and should be replaced with anatomical models and electronic media. About 25-48% of medical student in the USA and UK see dissection as challenging [14,15]. Despite the shortcoming associated with dissection, it is still a major teaching tool in most medical schools as most medical student look forward to it with great excitement. This study therefore seeks to determine student's behavioural responses towards cadaver dissection and its effect on meat consumption among Medical and Paramedical students of Delta State University, Abraka, Nigeria.

Materials and method

Type of study

This is a descriptive questionnaire-based cross sectional study. The purpose of this study was

explained to all first year medical and paramedical students of Delta State University, Abraka, Nigeria who take part in cadaver dissection.

Study population

Two hundred and forty volunteer Medical and paramedical students of Delta State University, Abraka correctly filled and returned structured questionnaires with thirteen statements of problems anonymously.

Method of data collection

Questionnaires that were not properly filled were discarded. Students' excitement at first contact, emotional shock, eye irritation, fear, unusual thirst, nausea, vomiting, tiredness, disturbed sleep, headache, dizziness, loss of appetite, hatred for any meat were assessed. Respondents were to either tick Yes or No, regarding each statement. The questionnaire had two sections.

Section A: experience at first encounter

Section B: experience on a latter date

Analysis of data

Data obtained were analyzed using SPSS Version 21 for descriptive statistics. Results are presented in frequency and percentages of responses for each item of the questionnaire. Results were then compared with available literature.

Results and discussion

On first contact with cadaver a total of 139 (57.9%) students were excited, 148 students (61.7%) were shocked, 114 (47.5%) students became afraid of cadaver and virtually all the student experienced eye irritation (93%). Also, 48 students felt like vomiting (20.2%), 5 (2.08%) actually vomited and 138 (57.5%) felt dizzy. Result also revealed that students experienced the following after some weeks of dissection. 44.2% experienced headache, 57.5% tiredness, 20% disturbed sleep, 27.1% experienced loss of appetite, 23.8% developed hatred for meat and 19.2 % unusual thirst. Our study has established the influence of cadaver dissection on students' behavioural responses to fear, shock, excitement, eye irritation as well as its effect on meat consumption.

Results reveal cadaver dissection is an interesting part of learning anatomy as students looked forward to it with eagerness. First dissection experience was exciting and interesting to students as shown in table 1. A study by Rajkumari *et al.*, (2007) also showed certain similarities. (16) 61.7% experienced emotional shock despite their initial

Table 1: Behavioural response experienced on first entry into dissecting room

Questions	Yes (%)	No (%)
1. Did you find your first visit to dissecting room exciting	139 (57.9)	101(42.1)
2. Did you experience emotional shock at first exposure to cadaver	148 (61.7)	92 (38.3)
3. Did you experience eye irritation at first exposure to cadaver	224 (93)	16 (7)
4. Were you afraid on first exposure to cadaver	114 (47.5)	126 (52.5)
5. Did you feel like vomiting on seeing a cadaver for the first time	48 (20.2)	192 (79.8)
6. Did you vomit at first exposure to cadaver	5 (2.08)	235 (98)
7. Did you feel dizzy at first exposure to cadaver	138 (57.5)	102 (42.5)

Table 2: Symptoms experienced on later date after exposure to dissecting room

Questions	Yes (%)	No (%)
1 Do you feel headache after exposure to dissections	106 (44.2)	134 (55.8)
2 Do you feel tired after exposures to dissection	138 (57.5)	102 (42.5)
3 Do you experience disturbed sleep after exposures to dissection	48 (20.0)	192 (80.0)
4 Do you experience loss of appetite after exposures to dissection	65 (27.1)	175 (72.9)
5 Do you have any hatred for meat after exposures to dissection	57 (23.8)	183 (76.3)
6 Do you experience unusual thirst after exposures to dissection	46 (19.2)	194 (80.8)

excitement; Izunya (2010) reported a similar trend in his study [5]. Face to face contact with cadaver gave emotional shock to 61.7% of the student studied and brought fear into the heart of about 114 students (47.5%). These could be attributed to some cultural beliefs, norms and folktales associated with the dead and handling the dead. It was obvious that some were seeing the dead for the very first time and the fact that they had to dissect the human bodies seem unpleasant to some. Tiredness/dizziness, vomiting and nausea experienced could be attributed to component of the preserving solution. Some students claimed they experienced disturbed sleep, this could also arise from cultural beliefs, norms and folktales. The nightmares experienced could be a replay of their activities during the day.

It is interesting to note that majority of students 147 (61.3%) agreed that cadaver dissection is considered important and indispensable in anatomical studies, and they would prefer such dissection sessions in the future., This is also in agreement with other studies which reported that dissection gives students a better appreciation of the three-dimensional view in human anatomy. Moreover, removal of cadaver dissection in learning anatomy will impair the students ability to apply scientific method during diagnosis [11]. From this study, cadaver dissection had no negative effect on

dietary choice, although a few developed hatred for meat (beef) because of its resemblance to cadaver tissues but quickly substitute it with alternatives. Cadaver is still a powerful means of presenting and learning anatomy.

Conclusion

Cadaver as an educational tool teaches medical student how to use their hands and help develop touch based skills. However, students should be given proper orientation to prevent psychological stress they undergo at first exposure. Prosectors should also be present at each dissection to guide the students.

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