Original Article

Attitude of Jos University medical students to their initial encounter with cadavers in the dissecting room

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Abstract

Objective: This study aimed to discover the emotional reactions, attitudes and beliefs of undergraduate medical students of University of Jos medical school to 1st time encounter with human cadaver. **Materials and Methods:** A structured pretested and validated questionnaire was administered to 450 students of 200 to 500 levels all at the same time in May 2012. The age of the students ranged from 21 to 26 years with mean age of 23.1 years. **Results:** 26.1%, 15.6%, 32.3%, and 15.2% of the 200, 300, 400, and 500 level students, respectively, indicated great anxiety as their reaction to the first experience with cadaver. The fear of infection was the most common cause of worry for the studied population (71.4%, 70%, 49.3%, and 87.3% for the 200, 300, 400, and 500 levels, respectively). A number of students had no symptoms on their first encounter with cadavers (40.5% of 200, 34.4% of 300, 27.7% of 400, and 51.9% of 500 levels) however; dizziness was a common symptom experienced. **Conclusion:** Overwhelming majority were of the opinion that cadaver dissection should not be substituted with visuals because cadaver dissection gives the students better appreciation of the three-dimensional. Assessment of the attitudes and reactions of medical students could help medical tutors to formulate better strategies to develop academic and clinical competences.

Key words: Attitude, cadavers, dissecting room, encounter, Jos, medical students

INTRODUCTION

Active dissection and examination of prosected specimens are among the major methods of learning anatomy, which offers important opportunities for cultivating an attitude of professionalism at an early stage in medical education. Numerous medical schools in the United States and abroad have determined that anatomy taught through cadaver dissection is untenable (Aziz *et al*., 2002). However, arguments against dissection tend to ignore the emotional growth students experience in the process. Cadaver dissection prepares the students for one of the core dilemmas of patient care, namely the need to be personally engaged yet clinically not interested (Aziz *et al*., 2002). This dilemma, traditionally encountered with the first incision in the dissection laboratory, will persist throughout professional life, and it must, therefore, be addressed in order to provide humanistic care with

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scientific objectivity. The necessity and utility of cadaver dissection experiences have been questioned by so many people in the society, with some schools even substituting virtual training (i.e., the use of plastic models or computers) for actual dissection (Aziz *et al*., 2002).

More recent studies have indicated that anatomy is only moderately or not very stressful and in fact generate considerable excitement and enthusiasm among the large majority of students (Rajkumari *et al*., 2008; Charlton *et al*., 1994; Rajkumari and Singh, 2007; McGarvey *et al*., 2001). Other studies of the anatomy dissecting room experience have reported that although the majority of their students expressed a positive attitude toward the initial encounter with the cadaver, a small percentage of students found it traumatic, 58% of their students suffer symptoms suggestive of posttraumatic stress disorder (Finkstein and Mathers, 1990; Penny 1985; O'Carroll *et al*., 2002; Evans and Fitzgibbon, 1992; Selvratnam *et al*., 2001; Horne *et al*., 1990; Abu-Hijleh *et al*., 1997). Studies conducted in Nigerian revealed that few (a third) preclinical students identified the dissecting room as a very important stress while majority of them found it exciting (Nnodim 1996; Izunya *et al*., 2010).

There is, therefore, the need for the experienced by medical students in the dissecting room to be explored thoroughly in many different medical schools across the nation and indeed other parts of the world so that there will be overwhelming evidence for or against the use of cadaver in learning anatomy.

MATERIALS AND METHODS

This was a cross-sectional study that was conducted among the medical students of the University of Jos. Because cadaver dissection is a lifelong experience that cannot be easily forgotten, the study population included the 500, 400, 300 and 200 level students. A total of 450 students were recruited for this study. Data were collected using a structured pretested and validated self-administered questionnaire. The basic components of the questionnaire were an introduction of the researchers/research, biodata of the respondents and questions about what they felt during their first encounter with the cadaver in the dissection room. Pretesting and validation of questionnaire was done from a pilot study earlier conducted with an internal consistency of 0.8. Informed consent was sought and obtained from the study population before data were collected. Data were analyzed using SPSS version 17 software (SPSS Inc., Chicago, IL).

DISCUSSION

The student-cadaver-patient encounter is more important than any other thing in the medical profession because it gives a better appreciation of the three-dimensional anatomy (Andres and Diana-Zulima, 2011).

Students' amphitheater practice evoked positive feelings in most students [Table 1]: Curiosity (84.7) and anxiety (23.3%), as stated in a Colombian study revealing that majority of the students were curiously waiting for their first experience as reported by 54.8%, 50%, 38.7%, and 41.8% of 2nd, 3rd, 4th, and 5th year students, respectively, while just a few 1.6% of year 2, 2.2% of year 3, 0.7% of year 4, and 0% of year 5 students said it was scary/horrible (Andres and Diana-Zulima, 2011).

The most frequent cause of fear [Table 2] in this study was the fear of infection as reported by 71.4%, 70%, 49.3%, and 87.3% of 200, 300, 400, and 500 level students and the smell of the room as stated by 66.7% of year 2 students, 70% year 3, 34.8% year 4, and 86.1% year 5 students. This was comparable to the findings of a Malaysian study which reported fear of infection between 61.4% of year 1 students and 34.6% of year 2 students (Selvratnam *et al*., 2001).

The most frequent strategy [Table 3] used by our students to overcome fear was by focusing on the task (71.4% of the year 2, 76.7% of year 3, 60% of year 4, and 59.5% of year 5 students) and relaxation by (47.6%, 30%, 36.1%, and 54.4% of 2nd, 3rd, 4th, and 5th of year students). The most frequent methods of coping in other studies were rationalization, relaxation, discussion with fellow students, friends and family (Abu-Hijleh *et al*., 1997; Horne *et al*., 1990).

Some studies have reported that few students (30%) showed physical symptoms [Table 4] on first exposure to cadavers in the dissecting room (Horne *et al*., 1990), 46% of students experiencing some level of fear before and during the initial dissecting room practical (Abu-Hijleh *et al*., 1997) and 50% of 1st year students and 56.6% of 2nd year students showing no symptoms on first contact with cadaver. However, 17.1% of 1st-year students and 21.1% of 2nd-year students suffered prolonged symptoms lasting over a year (Selvratnam *et al*., 2001).

In this study, no student experienced prolonged symptoms [Table 5] but most of the students stated that they experienced symptoms only on their first visit

Table 1: The reaction of students to first experience with the cadaver

Response	*n* (%)			
	Year 2	Year 3	Year 4	Year 5
Curious	69 (54.8)	46 (50)	62 (38.7)	33 (41.8)
Great anxiety	33 (26.1)	14 (15.6)	50 (32.3)	12 (15.2)
Scary/horrible	2 (1.6)	5 (5.6)	1 (0.7)	0 (0)
Exited	7 (5.6)	2 (2.2)	17 (11.0)	3 (3.8)
Wow	15 (11.9)	23 (25.6)	25 (16.1)	31 (39.2)

Table 2: The cause of fear

Causes	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Smell	48	36	84	66.7	63	27	63	70	28	26	54	34.8	36	32	68	86.1
Sight	6	27	33	26.2	24	18	42	46.7	36	33	69	44.5	27	21	48	60.8
Touching	30	18	48	38.1	27	9	36	40	18	26	44	28.4	19	13	32	40.5
Looking	6	6	12	9.5	12	3	15	16.7	7	14	21	13.6	5	8	13	16.5
Infection	51	33	90	71.4	37	26	63	70	48	28	76	49.3	38	31	69	87.3
Others	Fear of cutting hand, nightmare															

Table 3: The strategies used to overcome fear

Strategies	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Focusing on the task	51	39	90	71.4	33	36	69	76.7	56	37	93	60	25	22	47	59.5
Praying	27	18	45	35.7	15	18	33	36.7	20	14	34	21.9	8	17	25	31.7
Reading holy Bible/Quran	18	9	27	21.4	0	3	3	3.3	13	6	19	12.3	5	10	15	19
Relaxation	42	18	60	47.6	15	12	27	30	39	17	56	36.1	23	20	43	54.4
Gisting with friends	24	12	36	28.6	12	9	21	23.3	25	11	36	23.2	22	25	47	59.5
Advice from lecturers	24	12	36	28.6	9	9	18	20	19	4	23	14.8	11	8	19	24.1
Others	Learning from senior colleagues, accustom, and accepting it as part of learning															

Table 4: Symptoms experienced on first entry into the dissecting room

Symptoms	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Dizziness	47	18	65	51.6	15	19	34	37.8	39	36	75	48.4	17	19	36	45.6
Sweating	22	6	28	22.2	13	3	16	17.8	10	6	16	10.3	12	13	25	31.7
Palpitation	13	9	22	17.4	4	2	6	6.7	9	3	12	7.7	9	16	25	31.7
Vomiting	3	6	9	7.1	0	1	1	1.1	2	1	3	1.9	0	1	1	1.3
Loss of appetite	19	15	34	27	8	22	30	33.3	27	39	66	42.6	22	25	47	59.5
Fainting/ syncope	0	3	3	2.4	0	2	2	2.2	0	3	3	1.9	0	0	0	0
Nausea	12	12	24	19.1	3	9	12	13.3	21	7	28	18.1	6	7	13	16.5
No symptoms	36	15	51	40.5	15	16	31	34.4	20	23	43	27.7	24	17	41	51.9
Others	Long-time of sleep, breathlessness, hallucination, tremor, weakness, and irritation of the skin and eye															

Table 5: The duration of the symptoms

Durations	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Only first visit	23	9	32	25.4	25	11	36	40	35	19	54	34.8	13	11	24	30.4
Days	12	8	20	15.9	7	7	14	15.6	29	11	40	25.8	3	2	5	6.3
Weeks	6	14	20	15.9	9	2	11	12.2	9	7	16	10.3	2	1	3	3.8
Months	1	2	3	2.4	12	3	15	16.7	1	3	4	2.6	3	3	6	7.6

(25.4% of year 2, 40% of year 3, 34.8% of year 4, and 30.4 of year 5 students). This study also showed that the most common symptoms were dizziness (experienced by 51.6%, 37.8%, 48.4%, and 45.6% respectively for 2nd, 3rd, 4th, and 5th year students) followed by loss of appetite as reported by (27%, 33.3%, 42.6%, and 59.55%, respectively for 2, 3, 4, and 5 hundred level students).

Furthermore, most of our students (97.6%, 91.1%, 93.5%, and 98.7%, respectively of 200, 300, 400, and 500 levels) admitted that cadaver dissection enhanced their level of understanding anatomy [Table 6] and this is in tandem with findings of other similar studies (Rajkumari *et al*., 2008; Johnson 2002; Mutyala and Cahill, 1999; Week *et al*., 1995).

Expectedly, on the issue of replacing actual cadaver dissection with visual alternative in the nearest future [Table 7], majority of our students across all the levels of training did not agree to cadaver replacement (80.2% of year 2 students, 85.6% of year 3

Table 6: Whether cadaver dissection enhances level of understanding anatomy

Response	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Yes	77	46	123	97.6	48	34	82	91.1	88	57	145	93.5	45	33	78	98.7
No	1	2	3	2.4	3	5	8	8.9	4	6	10	6.5	0	1	1	1.3

Table 7: Should actual cadaver dissection be substituted with visual dissection

Response	Year 2				Year 3				Year 4				Year 5			
	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage	Male	Female	Total	Percentage
Yes	19	16	25	19.8	1	12	13	14.4	13	11	24	15.5	4	6	10	12.7
No	59	42	101	80.2	50	27	77	85.6	79	52	131	84.5	41	28	69	87.3

students, 84.5% of year 4 students, and 87.3% of year 5 students). This finding is consistent with what was obtained in previous studies (Leong 1999; Jones 2001; Parker 2002; Johnson 2002; McLachlan *et al.*, 2004).

Studies have also reported that Cadaver dissection gives students a better appreciation of the three-dimensionality of human anatomy, which is not possible with the plastic models or computers and that removal or attenuation of cadaver dissection is bound to impair the students' ability to apply the scientific method during diagnosis (Aziz *et al*., 2002; McLachlan *et al*., 2004; Parker 2002).

CONCLUSION

This study found that anxiety, fear and stress are being experienced by medical students during their first encounter with a cadaver in the dissecting room. It is, therefore, very important that medical educators bring up new ideas/strategies to reduce such problems in the dissecting room. Further studies, especially in other regions of the country are highly recommended to possibly replicate the findings in this study.

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Conflicts of Interest

There are no conflicts of interest.

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