

A Hospital Based Qualitative Study to Create Awareness of Dissection Skills and Tools Session in Preparing 1st Year Undergraduate Learners for Cadaveric Dissection

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Received: 10-05-2023 Revised: 20-06-2023 / Accepted: 25-07-2023

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Conflict of interest: Nil

Abstract

Aim: The main objective of the study was to analyse the learner prior and after interventional sessions as to how effective the session would be helpful in improving the quality and participation of learners in dissection.

Material & Methods: A qualitative prospective cross-sectional study was done in 100 Learners of I MBBS by an interventional session on the topic through General lecture and demonstration. Learners were assessed prior and after the interventional session by same validated questionnaire. Perceptions of learners were also taken. The obtained data were compared and its significance was analysed by Chi-square test using Epi info 7.1 software

Results: Significant improvement evident by P value <0.001 was seen after the interventional session on "Awareness of Dissection skills and tools in preparing I MBBS learners for cadaveric dissection". Most of learners felt that the session was very useful to them in stimulating interest, in-depth knowledge of the subject, acquiring dissection skills, performing qualitative dissections and a worthwhile session to be taken for every batch.

Conclusion: The findings of this research indicate that implementing intervention sessions at the early stages of learning may enhance, motivate, and enhance learners' engagement in dissection activities with more proficiency and ease.

Keywords: Dissection skill, Dissection Tools, Anatomy, Cadaver, First MBBS Learner.

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Introduction

The study of human anatomy has significant importance in the foundational education of undergraduate students and serves as a fundamental component in comprehending advanced medical sciences. The inclusion of instruction in gross anatomy offers a comprehensive educational experience that encompasses both emotional and intellectual dimensions within the field of medicine. The utilisation of cadavers in anatomical education is essential for achieving optimal training outcomes. It plays a crucial role in developing a comprehensive understanding of the human body, including the primary aspects related to patient care, the recognition of anatomical variations, the acquisition of medical terminology, and the tactile perception of both cadavers and live patients. [1] During their undergraduate education in India, medical students are first introduced to the field of anatomy. The aforementioned statement holds true

for the other paramedical courses as well. The acquisition of anatomical knowledge is often regarded as a fundamental cornerstone in the study of several medical disciplines. [2] The practise of dissection serves as a means to study and comprehend the structure of organisms, known as anatomy, while also imparting crucial abilities that facilitate the growth and development of individuals within the realm of medical education. [3]

A Greek word meaning "to cut up" is the derivation of the modern term anatomy. Every learner is expected to do dissection in Anatomy. During dissection, especially at the beginning of the course, instructors can demonstrate dissecting skills that will greatly benefit students during their subsequent dissection. The cadaveric dissection is said to be an essential component to the anatomy

curriculum. It provides hands – on view to understand the various parts and system of the human body and also makes the medical students familiar to it. [4] Despite the advent of modern technology and evolving teaching methods, dissection continues to remain a cornerstone of anatomy curriculum. [5] Its utility is also reflected in the perception of students who are of the opinion that dissection provides them with a foundation critical to development of clinical skills. [5] Using proper technique during dissections is important for developing good dissection skills. [6]

Acquiring technical abilities within the laboratory setting enhances the efficiency of the dissection process and undeniably increases students' acquisition of knowledge. [7] The fundamental objective of learning anatomy is to develop familiarity with the standard organisation and composition of the human body. This information serves as a foundation for recognising and comprehending deviations or modifications caused by various pathological conditions, injuries, or syndromes. By understanding these variations, healthcare professionals are equipped to make critical clinical assessments and decisions. [8] By using appropriate dissection procedures, individuals may not only optimise their time but also enhance their ability to locate, separate, and manipulate anatomical parts more effectively.

The primary aim of this study is to familiarise learners with the equipment and techniques of dissection, enabling them to conduct dissections proficiently and with passion. Additionally, this measure would result in a higher proportion of students successfully engaging in the practise of dissection.

Material & Methods

This prospective cross-sectional study was carried out in the Department of Anatomy, Nalanda Medical College and Hospital, Patna, Bihar, India for one year

Methodology

Total 100 Ist MBBS learners in Anatomy department, of which only 100 participated in answering the questionnaire. The study tools used were General lecture, demonstration with audiovisual aids, validated questionnaires. Pre-analysis was done with a validated questionnaire about their knowledge of dissection skills and tools. An interventional session was done after 1 month of entry of I MBBS Learners with General lecture followed by small group teaching with demonstration by trained faculty using projection of videos of how to use instruments, how to wear and remove gloves, how to wear mask, how to wash hands and techniques of doing dissection. The learners were allowed to practice. Later post-test analysis was done with same validated questionnaire. Perceptions of learners were also taken regarding session.

Statistical Analysis

The pre- and post- test results were analysed and compared. Chi square test using Epi info 7.1 software was used to know the significance of intervention. P value was obtained to know the significance of study.

Results

Table 1: Pre, post-test scores and percentages with validated questionnaire

	Pre-Test		Post test		Improved	P-value
	Score	Percentage	Score	Percentage		
At what angle is scalpel used?	25	25	87	87	66	<0.001
Enumerate steps of inserting and removing scalpel blade from BP Handle of scalpel.	12	12	81	81	73	<0.001
Will you be able to demonstrate the above one with ease?	8	8	72	72	65	<0.001
Indicate where toothed and Non-toothed forceps are used?	18	18	87	87	74	<0.001
Give indications where hand lens is used in dissection?	5	5	86	86	82	<0.001
Are you aware of technique of wearing and removing gloves?	30	30	84	84	55	<0.001
If so, can you demonstrate the above one?	13	13	77	77	65	<0.001
Do you know how to wear a sterile mask?	35	35	93	93	59	<0.001

Enlist the names of instruments in dissection toolbox?	58	58	87	87	34	<0.001
How to keep the dissections moist/ life like?	16	16	89	89	73	<0.001
How to reduce effect of formalin while doing dissections?	18	18	91	91	74	<0.001

Significant improvement evident by P value <0.001 was seen after the interventional session on "Awareness of Dissection skills and tools in preparing I MBBS learners for cadaveric dissection".

Table 2: Perceptions of learners about the session

Question	The instructor stimulated interest in the subject	Excellent /Strongly agree 70	Very good/ Agree 19	Good/ Neutral 10	Fair/ disagree 0	Poor/ strongly disagree 1
The instructor demonstrated in depth knowledge of the subject		66	26	8	3	1
This was a worthwhile class		47	31	25	0	1
How do you rate your experience with this session		32	36	11	24	3
Would you recommend this session to your juniors		62	31	5	2	6
Has this session improved your dissection skills		63	26	5	10	1
How do you grade this session?		48	38	11	0	2
Do you think this should be included in anatomy as a chapter		46	32	13	5	7

Most of learners felt that the session was very useful to them in stimulating interest, in-depth knowledge of the subject, acquiring dissection skills, performing qualitative dissections and a worthwhile session to be taken for every batch.

Discussion

The dissection of cadavers is a crucial component in the education of MBBS students, serving as a fundamental element that imparts key information necessary for their future studies. [9] Since the Renaissance, it has been widely recognised as a fundamental component of anatomical education, specifically for comprehending the three-dimensional nature of human anatomy. [1,10] The process of dissecting a human corpse as part of an anatomy course elicits inquiries from the novice medical student on matters such as the infringement upon personal privacy, the origins of cadavers, the concept of mortality, and the phenomenon of death. [11] The emotional and emotive components of human dissection play a significant role in the development of professional identity. Professionalism in the medical field is characterised by adherence to ethical principles, ensuring integrity, and promoting appropriate professional behaviour. [12] Typically, a diverse range of emotional responses and ambivalent sentiments are seen among first-year medical students upon their first interaction with human cadavers. There are many distressing elements

associated with the practise of cadaver dissection. These include the visual and olfactory perception of deceased individuals, the emotional impact of facing mortality, the act of desecrating and dismembering corpses, the dehumanising effect on the deceased, and the infringement upon personal privacy. [13-14] There are other worries about the potential impact of cadaver dissection on medical students, including the possibility that it may diminish their terror response and reduce the sense of urgency to provide timely care to real patients. This might be attributed to the students' gradual desensitisation to death and suffering via repeated exposure throughout the dissection process. Anatomists often assume the role of primary educators within the curriculum, necessitating their cognizance of ethical dilemmas. It is essential to allocate more emphasis on the first interaction of students with the cadaver, while also providing them with the option to engage in discussions pertaining to their emotional experiences. [15]

A statistically significant improvement, as shown by a P value of less than 0.001, was seen after the intervention session focused on enhancing the awareness of dissection techniques and instruments among first-year medical students in preparation for cadaveric dissection. The majority of learners said that the session was very beneficial in terms of inspiring interest, fostering a comprehensive understanding of the subject matter, developing dissection skills, conducting qualitative dissections,

and being seen as a valuable session that should be included in every cohort's curriculum. It is well acknowledged that students acquire knowledge of anatomy via the study of cadavers. Typically, first-year medical students exhibit diverse reactions when they are introduced to a corpse in the dissection hall, as well as when they engage in the act of dissection and study the topic of anatomy. The examination of the questionnaire in the current research revealed a positive perspective towards the practise of cadaver dissection and its essential role in the acquisition of anatomical knowledge. The aforementioned data indicate that medical students possess a strong desire to acquire knowledge from the corpse, which they see as their first patient. This is in spite of the increasing apprehensions over the traumatic consequences of dissection and its ramifications for later learning and professional application. [16]

The students expressed their belief that the lesson was valuable and recommended its inclusion in the curriculum for future students. Similar findings were seen in the research conducted by Zhang G whereby participants expressed the belief that their dissection skills were enhanced via the use of dissection procedures. [17] The research done by Selcuk et al. (2019) found that the performance of undergraduate, resident, and postgraduate students in surgical skills may be enhanced by the use of appropriate cadaveric dissections. [18] The acquisition of manual skills via dissecting room training has been determined to be necessary across several domains within the medical field. [19] In addition, the practise of dissection has been widely recognised as a crucial component in the study of gross anatomy, specifically in understanding the three-dimensional nature of human anatomy. It has consistently been seen as a fundamental step in the journey towards becoming a medical professional, placing undergraduate students at the forefront of medical education. [20-22]

Conclusion

The findings of this research indicate that implementing intervention sessions at the early stages of learning may enhance, motivate, and enhance learners' engagement in dissection activities with more proficiency and ease. This intervention would also facilitate the learner in developing enhanced autonomous surgical abilities and comprehension throughout the clinical stages of education. Consequently, it is recommended to use this approach at the first part of the first year of medical school, namely in the study of anatomy.

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