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Does Cadaveric Dissection Influence The Personality Development Of Z Generation Of Medical Students?

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ABSTRACT

Personality development is the process of development of organized pattern of behaviors and attitudes which makes a person distinctive. It emerges over time and it can be influenced by genetics and environment. The temperament (nature) and environment (nurture) are the main factor influences that development of an individual personality. A cross sectional descriptive study was conducted in the Department of Anatomy with six hundred undergraduate medical students from first to final year at Pondicherry institute of medical sciences, Puducherry. Five open ended questions related to the cadaveric dissection from Disrobing to the Robing of cadaver and how the cadaveric dissection is helped to develop their personality development were distributed to those who gave consent to participate in the study directly (First year) and Google form (Senior students). 98.6% students were expressed that cadaveric dissection helped them to develop positive behavioral changes, emotional intelligence, peer discussions, adjustments and coping the subject. Also most the students mentioned that it helps to enhance their Professionalism. The cadaveric dissection not only gives the knowledge of Anatomy but It also shapes the students personality in the form of emotions, discipline, punctuality, leadership qualities ,adaptation, accommodation and academic knowledge.

Keywords: Generation, personality, dissection, genetics, knowledge.

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INTRODUCTION

Cadaveric dissection is the most traditional method of Anatomy education since ancient times. Cadavers (Human Donors) are the first patients for the students who are starting up their career as medical professional. Because cadaver is the first person in whom they learn the anatomical structures by touching and feeling the human anatomical structures. Though there are disadvantages like formalin irritation and inadequacy of cadavers, for the sake of three - dimensional view and to understand the relations of the anatomical structures, cadaveric dissection was found to be essential part of anatomy education. Due to the new developments in technologies of Virtual reality and now learning and understanding of anatomy has become easier. But still lack of orientation of relations and lack of tactile studying had made cadaveric learning as one of the very important method of learning in Anatomy curriculum.

Generation Z are the generation of people who are born between 1997 to 2012.This generation was the first to have free access to all the digital gadgets and digital learning. At present this generation people make the majority of first medical professionals. Due to free accessibility and well versed in technologies, they might prefer the new technological learning rather than traditional cadaveric learning [1].

Personality development is the process of development of organized pattern of behaviors and attitudes which makes a person distinctive. Development of positive personality is necessary in medical profession. As budding doctors, students develop their personality over time and it starts from the first year from the first patient. Cadaveric learning not only improves the anatomical knowledge, but it also provides positive personality development among the first-year professionals [2]. At the end of first year, fear and comfortability towards their first patient (cadaver) had disappeared and students found cadaveric learning of Anatomy interesting and started feeling confident in their subjects [3-5]. Respect and empathy towards their First patient (Human donor) was also recorded in students at the end of the year [6].

Since generation z are freely accessible to the other modalities of learning, attitude and perception towards cadaveric learning might differ. Literature shows evidence of attitude and perceptions in other generation, but we wanted to evaluate the same in current generation. So the aim and objective of this study is to evaluate the perceptions and attitude of generation Z medical first year professional towards their first patient (Cadaver) and cadaveric learning and also to analyze the personality development between the previous and current generation.

Research Question: Does Cadaveric dissection influence the personality development of medical students?

MATERIALS AND METHODS

This descriptive study was conducted in the department of Anatomy at Pondicherry Institute of Medical Sciences. Six hundred Undergraduate Medical students (2018-2021) were consented to participate in the study who belong to various years. Five open ended questions were distributed directly [first year] and through Google form [senior students] related to the activities from day one (Disrobing of cadaver – first day of cadaver introduction – emotional components, team building, peer discussion, cadaveric dissection – exchange of knowledge, adjustments and Robing of cadaver (end of the dissection process).

Disrobing Program

The day one to the dissection class the students are divided into small groups according to their roll numbers and made them to stand in Queue in the entrance to enter into the dissection hall. Before the students arrive, the cadavers were displayed on the dissection tabled covered with white sheets. After the prayer the Dean of medical education unit will give instruction to disrobe the cadavers from head to abdomen then the pelvic area will get exposed to identify the gender of the cadaver in the process each table students will give name for their cadavers. In the observation process of the cadaver the students will document the observation (Color of the cadaver, gender, any scar, injury and tattoos etc.) Finally, the

cadaveric oath will take – How to respect the human tissue in ethical way & how to maintain the professionalism [Figure 1-3].

Dissection Hall: According to the timetable the students will dissect their cadavers and the following activities are taking place:

- Emotional – Empathy – like - their relatives
- Team building
- Exchange of knowledge
- Peer teaching
- Adjustments – formalin smell, time management, higher education, accept their ego, behavior changes
- Team leader

Robing of cadaver: The end of the cadaveric dissection and first year the dissected cadavers were displayed like the first day (disrobing). After the prayer by our chaplain the students will cover the cadaver and showing their respect by keep white rose on the chest of the cadaver by all the members of the dissection table [4-7].

This program was conducted in our institute since 2014 so we want to evaluate whether the importance of these activities really helping and influencing the students to change emotional components for better learning and attitudes'.

So the open ended questions were distributed to first year – final year undergraduate medical students to share their views, benefits and demerits by Google form and their perceptions were analyzed.

Disrobing Program

Figure 1: Disrobing of first patient - February 2021

Figure 2: Cadaveric Oath

Figure 3: Perceptions of Students

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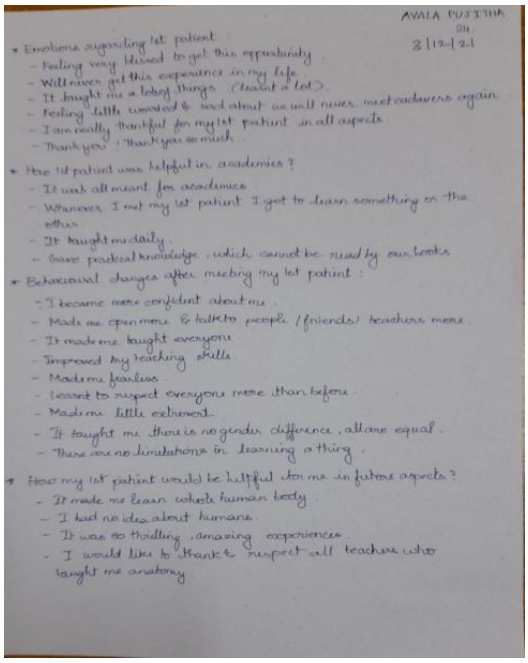
Robing Program

Figure 4: The Questionnaire distributed to students

1. Share your emotions - towards the first patient
2. Mention the academic benefits from your first patient
3. What was your behavioral changes in the dissection hall from day one to today (Robing)
4. Overall benefits/drawback from your first patient
5. Do you have any negative aspects with regard to your first patient?

Figure 5: Robing of first Patient - Perceptions

Figure 6: Perceptions of students



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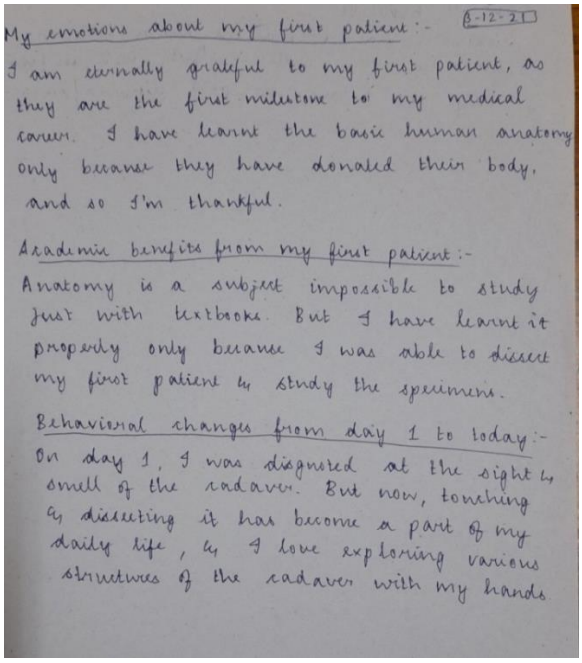
- Emotions regarding 1st patient :
  - Feeling very blessed to get this opportunity.
  - Will never get this experience in my life.
  - It taught me a lot of things. (Learnt a lot).
  - Feeling little worried & sad about as will never meet cadavers again.
  - I am really thankful for my 1st patient in all aspects.
  - Thank you ; Thank you so much.
- How 1st patient was helpful in academics ?
  - It was all meant for academics.
  - Whenever I met my 1st patient I get to learn something or the other.
  - It taught me daily.
  - Gave practical knowledge, which cannot be read by our books.
- Behavioural changes after meeting my 1st patient :
  - I became more confident about me.
  - Made me open more & talk to people (friends) teachers more.
  - It made me taught everyone.
  - Improved my teaching skills.
  - Made me fearless.
  - I learnt to respect everyone more than before.
  - Made me little extrovert.
  - It taught me there is no gender difference, all are equal.
  - There are no limitations in learning a thing.
- How my 1st patient would be helpful for me in future aspects ?
  - It made me learn about human body.
  - I had no idea about humans.
  - It was so thrilling, amazing experiences.
  - I would like to thank & respect all teachers who taught me anatomy.



My emotions about my first patient :- 8-12-21

I am eternally grateful to my first patient, as they are the first milestone to my medical career. I have learnt the basic human anatomy only because they have donated their body, and so I'm thankful.

Academic benefits from my first patient :-

Anatomy is a subject impossible to study just with textbooks. But I have learnt it properly only because I was able to dissect my first patient & study the specimens.

Behavioral changes from day 1 to today :-

On day 1, I was disgusted at the sight & smell of the cadaver. But now, touching & dissecting it has become a part of my daily life, & I love exploring various structures of the cadaver with my hands.

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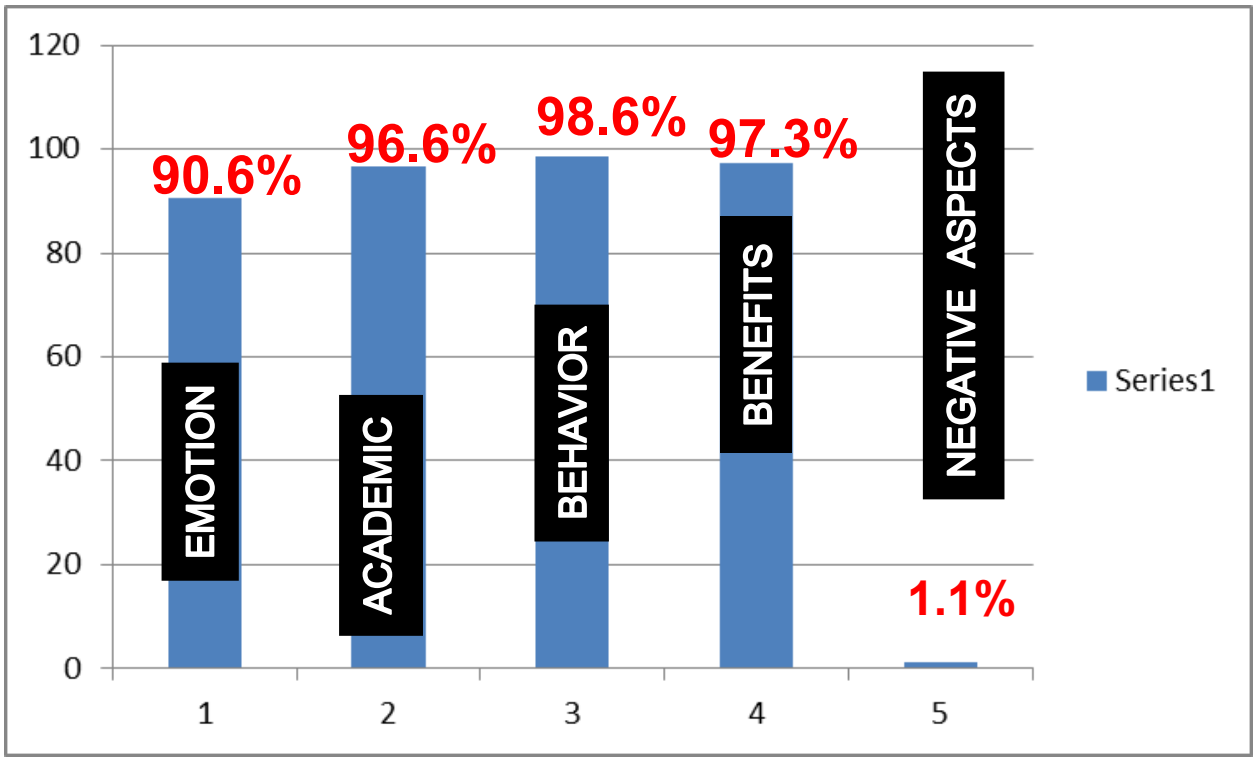
Figure 7: Robing of Cadaver at end of the year

RESULTS

Five open-ended questions pertaining to the experiences of six hundred undergraduate medical students from 2018 to 2021 were submitted through a Google form. The questions focused on the first day's activities, which included team building, peer discussions, cadaveric dissection—a knowledge exchange—adjustments, and Robing of the cadaver. Other activities included emotional components. Students' opinions are displayed as a percentage in Figure 8. Most students believed that the dissection process, particularly its emotional components (90.6%), team building, peer discussion, cadaveric dissection and knowledge exchange (96.6%), adjustments and cadaver robing are helping to change their behavior (98.6%), and overall benefits (97.3%) are good for effectively training students to serve patients. Dissection hall was deemed unpleasant by 1.1% of students due to formalin and awkward.

Figure 8: Perceptions of students represented in percentage



DISCUSSION

Students belong to Generation Z has been different because this was the first generation which got full access to the digital world. This generation also prefers digitalization in all aspects. However, this study finds that even Gen Z considers the cadaveric learning of Anatomy superior to all the forms of

learning Anatomy. Because of the lack of tactile learning is absent in all other modes which is essential for the medical students. In 2019 Plochocki JH [7] mentioned the Gen Z students are unique characteristics will prefer more hands-on experience than just learning by hearing conventional lectures. So the Stakeholders must modify their instruction, curriculum, learning environments.

Our study results also show [Table] a positive perception towards cadaveric learning by the Gen Z students. Inspite of availability of Virtual table, plastic models, 3D Anatomy mobile apps students of Gen Z wanted cadaveric dissection [8,9]. Many of the students at the end of their academic year started feeling connected with their first patients whom their learning began.

Some students were scared to see the cadaver for the first time. And students felt nausea, disgusted and uncomfortable during their first counter with their first patient (Cadaver) which was reported by previous studies [10] and also observed in our study (1.1%).But few students were very excited to see their first patient [8]. But slowly they start unwinding themselves to the environment and at the end of the dissection they found their cadaveric learning very useful and understood its value in the journey of the medicine.

According to Biswas R et al., cadaveric dissection is a vital and essential tool for learning anatomy. Pre-education sessions are also necessary to help improve the attitudes of Gen Z medical students toward cadaveric dissection, as a small percentage of them do not participate in the procedure [11].

Using phrases, poetry, essay writing, self-directed learning, and reflective writing, A. D. Souza et al. developed the CrAFT [Cadaver as First Teacher] modules in 2020. MCQs, quizzes, and poster creation were used to evaluate the module at its conclusion. Positive effects on students' knowledge and attitudes were encouraged by the module [12].So the cadaveric dissection cannot be replaced by the virtual methods because the students are not learning the knowledge alone.

Table: Our student's perceptions:

Question number	Students Perceptions
1.	Distorted feeling, losing a known person, Grateful, Gratitude, Really Thanking the first patient, Stranger become close person, Last day to see him/her.
2.	Orientation, Awakened knowledge, Visual effect, Practical Knowledge, Motivation, how to connect theory and Practical.
3.	Uneasy become comfortable, Team spirit, Team leader, Teaching skill, Adjustment, Awkward become adaptation, Care about others, Like to do dissection without using gloves, Sharing knowledge, Tackling the problems, Irritation by formalin become habituated, Confidence, Responsible, Adaptation, Visual learning, Responsibility, Integration.
4.	Patience, Started liking the subject, Clinical correlation, adjustments with peers, selflessness, good communications skills.
5.	Smell, irritation, Awkward.

CONCLUSION

In addition to teaching anatomy, cadaveric dissection recognizes personality changes in the form of emotions, self-control, punctuality, leadership abilities, flexibility, and academic knowledge.

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