

Expectations of first year undergraduate medical students towards human cadaveric dissection: reflective writing as an effective tool

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ABSTRACT

Introduction: Cadaveric dissection promotes psychosocial development and emotional socialization. The objective of this study was to assess the expectations of first year undergraduate medical students of BPKIHS towards human cadaveric dissection using a reflective writing exercise.

Methods: Qualitative cross-sectional study was conducted before dissection Lab Exercise in Unit 0. Students were divided in twenty groups. Each group consist of 5 students and group leaders were also nominated for timely submission of questionnaire. Each group was instructed to meet their teams in person to discuss their questions before first dissection in department and write their responses to the reflective questions together in 200 words. After data collection, all the data were managed by research team. Qualitative analysis of reflective writing was done by grounded theory data analysis procedure. Afterwards, we framed levels of coding more specifically open, axial and selective coding.

Results: The mean age of participants was 19.63 year; 74.5% were of Indo-Nepalese ethnic groups; 70.4% were male and 72.4% had seen dead body before admission to BPKIHS. Total 147 unique open codes were identified. These open codes were sorted into 8 axial codes such as gratitude/respect, story of patient, anatomy learning, humanity, career building, lifestyle/interpersonal modification, empathy and courage.

Conclusion: The importance of cadaveric dissection in relation to education, career building, interpersonal and intrapersonal benefits were reported by our students.

Keywords: Anatomy, Cadaveric dissection, Empathy, Reflective writing.

INTRODUCTION

Human cadaveric dissection in the gross anatomy laboratory has historically been a key experience in medical education. Its usefulness in the medical education curriculum and accompanying potential for causing emotional distress or anxiety in students are both controversial topics.^{1,2}

The dissection experience also helps students develop teamwork skills, strategies for coping with stress, and time management.³ Medical students gain more than professional identity formation or an understanding of human anatomy from cadaveric dissection, they immerse in the emotionally rich experience of working with the deceased.⁴ Cadaveric dissection also promotes psychosocial development and emotional

socialization that occurs as part of working on a team.⁵

Reflective writing has been described as an effective mechanism for promotion of self-learning within medical education.⁶ Curricula implementation has included Reflective writing groups for students, journaling, portfolios, video essays, and interactive Reflective writing, i.e. use of faculty feedback to support learners' development of more sophisticated reflection skills.⁷

Apart from imparting essential anatomical knowledge, the human dissection room can serve as an ideal ground for cultivating humanistic values among medical students. Medical training essentially begins with the cadaveric dissection and nearly all clinicians remember the details of their first interaction with the human cadaver.⁸ Hence, the dissection lab premises provide the

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educator with an immediate opportunity to teach and encourage humanistic qualities of respect, empathy and compassion among first semester medical students.⁹ Researchers had noted that while dissecting a human cadaver, students come across a myriad of emotional reactions which later on helps them to comprehend the psychosocial factors associated with patient's illness and thereby contribute to the making of empathetic physicians of tomorrow.¹⁰

The rationale of this study was to analyze the expectations of first year undergraduate medical students of B.P. Koirala Institute of Health Sciences (BPKIHS) towards human cadaveric dissection using a reflective writing exercise, which will be significant in the present day medical education scenario.

After an extensive search of the existing literature, we found that very few studies have been undertaken till date on undergraduate study but not related to human body dissection. Therefore, the main goal of this study was to assess the expectations of first year undergraduate medical students of B.P. Koirala Institute of Health Sciences (BPKIHS) towards human cadaveric dissection using a reflective writing exercise.

METHODS

A qualitative study was conducted for MBBS Batch 2023 after obtaining ethical clearance and approval from IRC (BPKIHS-IRC/2383/022). The study population were first year medical undergraduate students of BPKIHS. Sampling technique was Census sampling technique. Thus, sample size was 100 but Students were divided in twenty groups according to their roll number. After obtaining informed consent from students, we distributed reflective questionnaire to groups just before first dissection practical session. Each group consisted of 5 students and a group leader was nominated for timely submission of response. Each group was instructed to meet their teams in person to discuss their response to questions in team within 200 words. The questionnaire had 5 items. The questionnaire was modified from the research done by Abrams et al (2021) after his consent.¹¹

Q1. In what ways do you think learning from

your donor will change the way you will approach patients going forward?

Q2. How will learning from your donor impact the relationship you have with your own body?

Q3. How will learning from your donor change your thoughts and hopes for your life?

Q4. What sentiments will you have like to share with your donor if you could meet them now?

Q5. Are there any other thoughts/expectations or feelings you wish to share about the dissection experience?

After Data collection, all the data were managed by research team. Qualitative analysis of reflective writing was done by grounded theory data analysis procedure. We identified and sorted themes in student's responses to each question using the three levels of coding. Initially, all authors independently identified open codes and came together at first meeting to confirm reliability of identified codes. Then subsequent meetings were arranged for sorting open codes into axial codes and transformed them into selective codes.

RESULTS

The mean age of participants was 19.63 year. 74.5 % participants were of Indo-Nepalese ethnic groups; 70.4% participants were Male and 72.4% participants had seen dead body before taking admission to BPKIHS.

After thorough reading of reflective writing of students, total 147 unique open codes were identified. Such as "Thankful to you and your loved one for toughest, greatest work of donation."; "Realization of different dimensions of beautiful human body."; "Teaches different aspect of human values, Professionalism and empathy"; "Would also like to know about them such as How they were?, What they used? When alive?"; "Realise about our life is short and fragile, During life it has been called by some name/identity, after death we call it "body" or "Cadaver" and use the pronoun "it" etc.

These open codes were sorted into 8 axial codes collectively by all authors such as gratitude/ respect, story of patient, anatomy learning, humanity, career building, lifestyle/ interpersonal modification, empathy and courage (Table 1). On third meeting, we framed the two selective

codes from student's reflection that *"Cadaveric dissection enhance student's understanding of professionalism and humanity by learning human anatomy dissection."* & *"The gravity of dissection experience is further heightened by knowing the story of patients and their courage for building their career in medicine."*

DISCUSSION

The first contact with the dissection rooms is an unforgettable and important step in a young doctor's education. From generation to generation, the memory of the "amphitheater" has lingered through every doctor's career and was even longer considered a mandatory and essential step, a rite of passage.¹²

Human Cadaveric dissection is valuable as the opportunity to reflect is important for professional identity formation of physicians.¹³ In our study,

students self-reported complex and difficult emotions, which the human cadaveric dissection appeared to evoke, and described a multitude of benefits from the dissection experience, which showed agreement with the study conducted by Chen et al. on students undergoing the rigorous process of professional identity formation in medical school tend to reflect on topics such as empathy, respect, altruism, compassion, teamwork, and self-regulation.¹⁴

The study conducted in medical students of University of Central Florida suggested that the benefits of human cadaveric dissection are far-reaching with educational, interpersonal and intrapersonal benefits reported by patients. Further they reported that student perceptions of the impact of human cadaveric dissection on their personal and professional identity formation, wellness, and ability to learn core anatomical principles.

Table 1. Axial codes with some student's reflection

S/N	Axial Codes	Reflective Quotes from Student's reflection
1	Gratitude/Respect	1. Grateful with deep sense of attachment with donor. 2. Thankful to you and your loved one for toughest, greatest work of donation.
2	Story of patient	1. Slight dilemma about how we had been dealing our life. 2. Would also like to know about them such as How they were? , What they used? When alive.
3	Anatomy learning	1. Fundamentally changes the understanding of our body and refines our dissection skill. 2. Helps to appreciate anatomical variations.
4	Humanity	1. Cadavers as binding tool for science and humanity. 2. Helps to appreciation of human value.
5	Career building	1. Realize to holistic approach to patients rather than a disease or a system. 2. Helps to build good doctor-patient relationship.
6	Lifestyle/ Interpersonal modification	1. Realise about our life is short and fragile, During life it has been called by some name/identity, after death we call it "body" or "Cadaver" and use the pronoun "it". 2. In the competitive race of success, everyone forgot to live happily and to enjoy.
7	Empathy	1. Teaches different aspect of human values, Professionalism and empathy. 2. Cadaver are reflection of our body.
8	Courage	1. Serving also after death for medical students change by thinking process. 2. Dare to donate is greatest act in conservative society like us.

They concluded that humanistic themes revealed by reflective activities also emerged: empathy, humanism, and compassion as also shown by our study.¹¹

CONCLUSION

Thus, the importance of cadaveric dissection associated with educational, career building, interpersonal and intrapersonal benefits were reported by our students. The presence of these themes, increasingly recognized as vital components of student and physician wellness in medical science.

Recommendation: These findings further raise the question: Can digital anatomy exercises or AI Cadaveric dissection or learning from prosection generate a comparable spectrum of effects? Thus, there is a need of longitudinal research to find out the answer of these research question.

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