

Exploring the Hidden Curriculum in Cadaveric Dissection: A Literature Review and the
Pedagogical Implications for Hong Kong Medical Schools

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Abstract

So much as it is a space for anatomy teaching, dissection lab is simultaneously a space where medical students confront the concept of death and grapple with ethical considerations, subsequently developing moral and professional values. This essay serves as a literature review to discuss the “hidden curriculum” within cadaveric dissection, which encompasses the exploration of death, ethical considerations, and professional growth. It highlights the pedagogical potential of cadaver lab to impart humanistic values and fosters the development of medical professionalism among students. Finally, it emphasizes the implication of this aspect for medical schools in Hong Kong.

Medicine is not only a science. It is also an art. It does not consist of compounding pills and plasters; it deals with the very processes of life, which must be understood before they may be guided. – Paracelsus

So much as it is a space for anatomy teaching, dissection lab is simultaneously a space where medical students confront the concept of death and grapple with ethical considerations, whether intentionally designed or not. Within this space, medical students undergo a transformative process. They engage in a rite of passage and transition into a new social identity as they acquire professional knowledge, practice skills, and navigate through ethical values to develop professional characteristics.

In this essay, through drawing upon studies that examine medical students' attitudes and responses to cadaveric dissection, I discuss the "hidden curriculum" within cadaveric dissection, which encompasses the exploration of death, ethical considerations, and professional development. In doing so, I highlight the pedagogical potential of cadaver lab as a space to impart humanistic values and foster the development of medical professionalism among students. At the end, I also emphasize the implications of this aspect for medical schools in Hong Kong.

Scholars have reported that many medical students find cadaveric dissection to be a psychologically challenging activity.¹⁻³ In a study by Finkelstein and Mathers² involving 175 students from Stanford University School of Medicine, 5% of the students reported traumatic experiences, including "nightmares, intrusive visual images, insomnia, depression, and learning impairments" that resembled post-traumatic stress disorder, while other students "reported similar but less severe responses." Other studies have reported that student experiences stress, anxiety, and physiological reactions such as nausea during dissection.^{1,4,5} While the discomfort for most students tends to reduce over time, Evans and Fitzgibbon³ found that a minority of students continued to be seriously disturbed.

These psychological challenges faced by students are likely a product of their intimate experience with death for the first time.^{1,2,4,5} The idea in terror management theory, initially proposed by anthropologist Ernest Becker⁶ and subsequently developed by psychologist Greenberg, Solomon, and Pyszczynski⁷, suggests that the inevitability of death, coupled with human's fear and defence mechanism surrounding it, forms the basis of social behaviours. According to this theory, our mind is wired to avoid thoughts and contemplations of death. However, in the cadaver lab, where students intimately interact with and dissect a cadaver, they confronted the reality death – what remains after death is a body absent of agency and vulnerable to physical harm.⁸ This experience can cause disruption to students' existing mental framework. During these moments of disorientations, students become aware of a need for reflection, and they are motivated to inquiry and investigate the topic.⁹

In terms of ethics, dilemmas in cadaver labs primarily arise from the ambiguity surrounding the cadaver body. The cadaver is viewed as simultaneously a “memorial body of a former life” and “a tool for learning”⁴, which creates a conflict between using and treating the body as an object while also showing respect for it.¹⁰ The act of dissection involves manipulations of the body that would under any other circumstances be considered unlawful and immoral. Even if a student approaches the dissection rationally, acknowledging the voluntary donation of the cadaver's body and the inability to cause harm to a body that no longer feels, personal details like the face and nails can still evoke a sense of violating autonomy, privacy, and non-beneficence.⁸ These experiences often lead to feelings of guilt.⁴

Studies have reported on how students respond to these conflicts. Many students cope by reducing, objectifying, and depersonalizing the cadaver, perceiving it as an object rather than as a memorial body.^{4,5,10–12} The objectification of cadaver can take on different forms, such as focusing on the vessels and nerves rather than the body itself, referring to the cadaver as animals or objects, and making effort to cover the face and skin of the cadaver.¹³ These

actions help to shift students' focus onto the scientific aspect and makes students "feel supported by its cultural and curricular legitimacy," alleviating the guilt associated with manipulating or dismembering the cadaver.¹³

In objectifying the cadaver, students are also, in a sense, engaging in the practice of detached concern.^{13–15} Detached concern refers to a balanced attitude that combines detachment and concern, enabling individuals to achieve both objectivity and empathy – qualities that could be considered as attributes of mature and emotionally stable physicians.^{15,16}

Apart from depersonalization, some students make jokes and laugh during dissection, adopting humor as a coping mechanism.^{10,13,17} For instance, a student carved a heart out of the cadaver's buttock during Valentine's Day, and others joked about the cadaver's tissues being like minced pork and beef tendons.^{8,17} Here, humor functions as an expression of students' "off-balance" experience in the cadaver lab¹⁰, allowing them to "acknowledge a problem and to relieve tension without having to confess weakness."¹³ It also enables them to simultaneously engage with and create a psychological distance from the cadaver.¹⁰

The range of coping mechanisms adopted by students goes beyond what have been described above. Ultimately, the cadaver lab shapes students' understanding of death and various ethical issues, consequently developing their professional attitudes. However, it is crucial to acknowledge the concerns expressed by scholars regarding the maladaptation of coping mechanisms during medical school, when these processes of socialization into the medical profession are not properly guided. In medical settings, a lack of appropriate emotional management and coping mechanisms may lead to burnout and the dehumanization of patients.^{4,14} Considering the psychological challenges associated with cadaveric dissection, if stress and anxiety from these experiences are not effectively resolved, or if suitable emotional management methods are not developed, students may carry these emotions into their clinical practices.^{12,14,18}

Additionally, given that physicians inevitably have to manage death and bereavement scenarios, their understandings and feelings – or lack thereof – about death may influence how they treat their patients. In facing dying patients and their families, discomfort and a lack of competence in confronting the reality of death may lead to unempathetic and mistreatment of patients.^{12,18} These factors underscore the importance of guiding and monitoring students' attitude throughout the journey of anatomy learning.

Among the primary studies cited above, there is a notable emphasis of the pedagogical potential of the cadaver lab in fostering the development of students' medical professionalism. In some schools, interventions have been implemented to target students' development of medical professionalism within cadaver dissection and achieved positive results. In the death education programs at the University of Massachusetts and Dalhousie Medical School designed by Mark, Bertman and Penny^{18,19}, students are provided with an opportunity to openly discuss topics including death, grief, and coping mechanisms. Additionally, information about donor programs was provided and memorial events were organized. The interventions demonstrated positive impact on the development of “caring physician-patient relationships” and the facilitation of “exploration of humanistic and ethical issues in medicine.”

In another study, Souza et al.²⁰ developed an intervention that consisted of lectures and reflection practices before, during, and after a dissection course. The intervention was able to sensitize students prior to dissection and promote the development of professionalism, human values, and empathy. The above examples illustrate the potential use of interventions in cadaveric dissections to guide students and enhance the development of medical professionalism during early stages of medical education.

As of the writing of this literature review, no research has been found on the attitudes or responses of Hong Kong medical students on cadaveric dissection. Nonetheless, based on the author's ethnographic observation as a medical student at the University of Hong Kong

(HKU), it appears that Hong Kong students experience similar conflicts and coping mechanisms as previously mentioned. Additionally, it is worth noting that at HKU, while ethical and humanistic issues associated with dissection are addressed during an opening ceremony that takes place at the beginning of the dissection course (this ceremony includes an introduction to cadaver donation, a call for respect, and a moment of silent), guidance and monitoring of students' attitude remain minimal. This suggests that there is room for increased guidance for students to navigate the humanistic issues surrounding dissection, potentially through the implementation of interventions like those mentioned above.

During cadaveric dissection, students not only acquire anatomical knowledge but also confront death and grapple with ethical issues. In this process, they experiment ways to manage emotional stress and navigate moral conflicts. As such, cadaveric dissection is also a process where students develop moral and professional values and engage in a rite of passage into the medical profession. However, the lack of guidance and monitoring of these developments can lead to serious consequences pertaining to medical professionalism. There is a need for serious consideration of incorporating humanities teaching within dissection sessions. Further research is needed to better understand the experiences of Hong Kong students during cadaveric dissection, which can inform targeted interventions for professional development, maximizing the pedagogical potential of cadaveric dissection.

References

1. Nnodim JO. Preclinical student reactions to dissection, death, and dying. *Clin Anat.* 1996;9(3):175–82.
2. Finkelstein P, Mathers LH. Post-traumatic stress among medical students in the anatomy dissection laboratory. *Clinical Anatomy.* 1990;3(3):219–26.
3. Evans EJ, Fitzgibbon GH. The dissecting room: Reactions of first year medical students. *Clinical Anatomy.* 1992;5(4):311–20.
4. Robbins BD, Tomaka A, Innus C, Patterson J, Styn G. Lessons from the dead: the experiences of undergraduates working with cadavers. *Omega (Westport).* 2008 2009;58(3):177–92.
5. Hancock D, Williams M, Taylor A, Dawson B. Impact of cadaver dissection on medical students. *New Zealand Journal of Psychology.* 2004 Mar;33(1):17–25.
6. Ernest, Becker. *The Denial of Death.* New York: Free Press; 1973.
7. Greenberg J, Pyszczynski T, Solomon S. The Causes and Consequences of a Need for Self-Esteem: A Terror Management Theory. In: Baumeister RF, editor. *Public Self and Private Self [Internet].* New York, NY: Springer; 1986 [cited 2024 Feb 29]. p. 189–212. (Springer Series in Social Psychology). Available from: https://doi.org/10.1007/978-1-4613-9564-5_10
8. Ng HY. *Ethos.* 2024 [cited 2024 Feb 29]. Navigating Mortality and Morality: Making Sense of Dehumanization in Cadaver Labs. Available from: <https://www.ethos.hku.hk/dehumanizationincadaverlabs>

9. Warnick BR. Cadaver dissection and the limits of simulation. *J Clin Ethics*. 2004;15(4):350–62.
10. Olejaz M. When the dead teach: Exploring the postvital life of cadavers in Danish dissection labs. *Medicine Anthropology Theory*. 2017;4(4):125–49.
11. Tseng WT, Lin YP. “Detached concern” of medical students in a cadaver dissection course: A phenomenological study. *Anat Sci Educ*. 2016 May 6;9(3):265–71.
12. Druce M, Johnson MH. Human dissection and attitudes of preclinical students to death and bereavement. *Clinical Anatomy*. 1994;7(1):42–9.
13. Smith AC, Kleinman S. Managing Emotions in Medical School: Students’ Contacts with the Living and the Dead. *Social Psychology Quarterly*. 1989;52(1):56–69.
14. Hafferty FW. Cadaver Stories and the Emotional Socialization of Medical Students. *Journal of Health and Social Behavior*. 1988;29(4):344–56.
15. Fox R. *Essays in Medical Sociology: Journeys into the Field*. New Brunswick, U.S.A: Transaction Books; 1988.
16. Lampert B, Unterrainer C. Detached concern, me and my clients—Professionals’ emotion regulation, burnout, and patients’ care quality at work. In: *Emotions and identity*. Bingley, United Kingdom: Emerald Group Publishing; 2017. p. 111–33. (Research on emotion in organizations).
17. Segal DA. A Patient So Dead: American Medical Students and Their Cadavers. *Anthropological Quarterly*. 1988;61(1):17–25.

18. Marks SC, Bertman SL, Penney JC. Human anatomy: a foundation for education about death and dying in medicine. *Clin Anat.* 1997;10(2):118–22.
19. Bertman SL, Marks Jr. SC. The dissection experience as a laboratory for self-discovery about death and dying: Another side of clinical anatomy. *Clinical Anatomy.* 1989;2(2):103–13.
20. D Souza A, Kotian SR, Pandey AK, Rao P, Kalthur SG. Cadaver as a first teacher: A module to learn the ethics and values of cadaveric dissection. *Journal of Taibah University Medical Sciences.* 2020 Apr 1;15(2):94–101.