The Impact of Patient Death on Psychology, Preparedness, and Coping in Medical Training: A Qualitative Study

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Funding: this study was generously supported by the McMaster Postgraduate Medical Education Research Grant awarded to WY.

The authors have no conflicts of interest or external funding sources to disclose.

Keywords: patient death, end of life care, physician mental health, medical culture, physician burnout

ABSTRACT

Background: Patient death is an inevitability of medical training. Subsequent distress, decreased empathy, and worse learning outcomes have been reported amongst physicians and trainees. Early trainees often feel underprepared to manage death. We aimed to ascertain the impacts of patient death, perceived preparedness to manage the experience, and coping strategies employed by residents at a Canadian University.

Methods: Resident physicians across various residency programs that completed an internal medicine rotation at McMaster University were invited to participate. Semi-structured interviews were conducted to understand circumstances, emotional responses, support, coping mechanisms, and preparedness regarding the patient death experience. Interviews were transcribed and coded to identify emerging themes using thematic and interpretive analysis.

Results: Eighteen participants were interviewed. Three main themes were categorized: 1-patient death circumstances; 2-immediate and delayed emotional impact; 3-preparedness and coping mechanisms. Pronouncing death, cardiopulmonary resuscitation, communicating with families, and unexpected/unknown deaths were common challenges. Feelings of guilt, helplessness, and grief often followed events. Feeling underprepared for the event contributed to emotional consequences which included difficulties sleeping, intrusive thoughts, and emotional distancing in subsequent deaths. While these experiences are congruent with effects of psychological trauma, they were consistently normalized by participants.

Interpretation: Patient death in medical training can be traumatic for trainees and may perpetuate loss of empathy, changes to practice, and residual emotional effects. Further focus is needed to better prepare trainees for this phenomenon and examine the culture in which physicians operate.

Word count: 234

INTRODUCTION

Patient death is an inevitability of medical training. The emotional impact of a patient's death on clinicians can range from an acute grief response with sadness, fear, and shock; to post traumatic stress disorder (PTSD) with hyper-vigilance, cognitive changes, sleep difficulties and emotional instability (1). For healthcare providers the death of a patient often results in guilt, fear, and powerlessness across all clinical environments (1-4). Compassion fatigue, or secondary traumatic stress, is a unique form of psychological trauma that arises from repeatedly witnessing suffering, trauma, or death, and can contribute to emotional exhaustion, depersonalization, and empathy loss (4-6). Traumatic exposures, such as the death of a patient, often occur as early in a physician's career as medical school, and can impact trainees cognitively and emotionally (7). Prior surveys have shown that medical students and internal medicine resident physicians felt that patient death experiences were often traumatic, and they felt poorly prepared to cope with these events (8, 9).

Given the potential psychological impact of witnessing death, our study aimed to explore the impact on trainees of their early experiences with a patient death, ascertain how prepared trainees feel to manage these events, and identify coping mechanisms commonly employed. The objective of our study was to further examine the immediate and delayed impacts of the patient death experience on medical trainees, potentially identifying gaps and opportunities to further support learners during difficult or traumatic events.

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METHODS

A thematic and interpretative analysis approach was used to explore the impact of patient death on resident physicians and the coping mechanisms used. Interpretative thematic analysis is well suited for determining patterns of behaviour or responses amongst our participants in response to patient death (10).

Resident physicians from McMaster University, Canada, were invited to participate via email and social media in a one-on-one semi-structured interview about their experiences with patient death. Trainees of all disciplines were recruited if they had completed at least one block of internal medicine training on the Clinical Teaching Units (CTU) at one of the three main teaching hospitals in Hamilton, Ontario. Purposive sampling was used to ensure a diverse group of residents from all genders, training levels, and programs. Study recruitment continued until thematic saturation was achieved (11).

Semi-structured interviews were conducted to develop an in-depth understanding of resident experiences with patient death. Aspects of focus included the circumstances surrounding the death, empathy and personalization, impact on the resident's emotional and mental wellbeing, and coping mechanisms used. The complete interview guide can be found in Appendix A. Interviews were recorded and transcribed by a commercial transcription service (Transcript

Heroes transcriptheroes.ca). This study was approved by the Hamilton Integrated Research Ethics Board (HiREB) under protocol #5140. Psychological support services were offered to participants at the start of the interview, to access at any time.

Interview transcriptions were analyzed using interpretive analysis to understand which patient death experiences were considered memorable, how trainees were impacted by the situation, how they navigated emotional responses, and coping mechanisms used. The data were analyzed iteratively and concurrently with data collection in a constant comparison method. Transcripts were independently analyzed by authors WY, CG, and DBV.

The research team used reflexivity at every stage of the study, through acknowledging and discussing how investigators 'personal experiences may have impacted data interpretation. All disagreements were resolved by consensus at biweekly research meetings. DBV is a General Internist and clinician educator at McMaster University. He has a clinical focus in end of life care and medical assisted death, and supervises learners in the inpatient and outpatient Internal Medicine service at St Joseph's Healthcare Hamilton, Ontario. CG is a Critical Care fellow at the University of Toronto who completed her Internal Medicine training at McMaster University. She has an interest in communication and interpersonal dynamics in medicine. WY is a Nephrology fellow at the University of Toronto who also completed her Internal Medicine Training at McMaster University. She has an interest in medical education and qualitative research methods. IS is currently a medical student at the University of Toronto.

RESULTS

Eighteen participants were interviewed. The mean age of participants was 27 years. The majority (55% percent) of trainees were in their first year of residency, with 29% of participants from Family Medicine and 22% from Internal Medicine. Other disciplines included Radiology, Pathology, Psychiatry, General Surgery, Obstetrics and Gynecology, and Radiation Oncology. Most (72%) of participants had experienced their first patient death during medical school. A summary of participant demographics can be found in Table 1.

Memorable patient death scenarios included unexpected deaths in which the patient deteriorated suddenly, pronouncing death for the first time while on call, cardiopulmonary resuscitations, and meaningful or challenging family interactions around the time of the patient's death. The most common response to patient death was sadness, shock, and helplessness, regardless of the cited circumstance.

"I remember feeling sad…like I was going to cry after both [patient deaths], even though [I did not have] some deep relationship or connection to each of the patients, it was just such a wild experience to see a person who has died." (P11)

During unexpected deaths participants described feeling shock and guilt that the patient clinically deteriorated, and often wondered if their own performance negatively influenced the patient's trajectory.

"Because it was unexpected, I definitely felt guilty because I [wondered] was there something I could have done to prevent this." (P12)

While pronouncing a death on overnight call, participants reported feeling unqualified and unprepared to perform the task.

"I'm reading [in the McMaster Internal Medicine handbook] about how to pronounce a patient's death as I'm going to do it. Like this is the potentially most significant thing in the life of his family…Who am I to come and pronounce somebody dead? Am I even medically competent enough?" (P11).

Cardiopulmonary resuscitations often precipitated feelings of anxiety and distress due to the intensity of the situation. When recalling family interactions, participants were at times conflicted by family dynamics (especially if there was opposition to the patient's previously defined wishes) or saddened by the family's experience of loss.

"I think it was mostly shock and fear for this patient. And a sense of derealisation – like this can't be how the story is playing out. When his wife came I felt so much pain for her. I thankfully had a call room, right on the floor that was about 12 steps away, and the moment I got in there I burst into tears." (P14)

Immediately following the death, both distraction and reflective techniques were used as coping strategies, and participants often discussed the experience with fellow residents and family members. Distraction techniques included exercise, video games, unhealthy eating, and occasionally alcohol; whereas, reflective techniques included journaling, writing letters to the patient or their families (which were never sent), and studying around the physiology and medical management of the case. Some participants had debriefs with the staff or senior resident immediately after the event, and those that debriefed felt this was helpful to process their emotional reaction to the situation.

"Certainly I think there's a big temptation to distract yourself with something unrelated…to watch TV or a movie or play video games. It can help for a time. But I think that if you're using it to avoid emotions that you haven't fully explored yet, that's probably not the best thing. But if it's something that's just too painful for you to think about and you need something to take your mind off it, then I think that's a perfectly reasonable coping strategy." (P6)

"Journaling helps because it gives me a structured way to reflect on things. Once I put it in writing [it solidifies] this is actually how I was feeling at that time." (P8)

Participants unanimously reported that their patient death experience was difficult for them. Trainees often ruminated on how they could have managed the patient differently to

achieve a more favourable outcome, and many reported difficulties sleeping and mood changes following the event.

"[After the patient died] there was something at the back of my mind, but I still did everything normally. When I went home though is when it started to really hit me. I was telling my family [about it] and then I broke down on the phone." (P10)

During subsequent call shifts or clinical exposure participants endorsed feeling nervous of managing similar patients and as a result were hyper-vigilant. Some participants actively avoided similar cases, opting to choose other types of patients to round on, or consciously distanced themselves emotionally from patients that reminded them of the patient who died previously.

"[The death] played on my mind, feelings of guilt, like what could I have done differently? What happened? It was a hard situation that was playing in the back of my mind and definitely made me more anxious on my next few calls." (P12)

Over time, many participants experienced depersonalization and loss of empathy with repeated exposure to patient death, which was accompanied by a sense of guilt regarding their perceived lack of compassion.

"I don't feel as affected as much anymore. I don't think I've cried since that time. It's an unconscious detachment…I don't let myself go into that mental space where I think about the family members and what they're feeling. I do feel bad about it. There's an element of guilt. But then I rationalize it to myself that this is a defensive mechanism." (P1)

Two participants reported that the patient death prompted an avoidance of fields with similar patient populations, leading to alternative career paths.

"I think [the patient's death] impacted the direction that I want my career to take…I think it's impacted my interest where I now have no interest in [obstetrics]." (P16)

Unanimously, participants normalized their experiences with patient death, and did not believe the emotional impacts were long standing. Witnessing death was perceived as a necessary component of medical training and central to the role of a physician; many endorsed this with a sense of resignation.

"I think [the patient's death] put everything into check. It's like OK, you're doing medicine. This is a part of it. In my head, I think I digested it as…this is a part of the [training] process." (P8)

"[The Senior Medical Resident] knew in a way what I was going through because I think everyone eventually goes through [a profound patient death] at some point." (P15)

Most of the participants further reported feeling underprepared with respect to prior training and education to manage and cope with death.

"No one teaches you how to disentangle from the emotional aspects of a patient dying…I've always thought that it might be nice in medical school to have a discussion about thoughts and feelings surrounding patient death and other difficult situations that you encounter in residency. Nobody tells you that these are going to happen and how to deal with them. They just come up and you're just expected to deal with them based on the [life] skills that you've developed." (P18)

INTERPRETATION

Our study captures the patient death experiences of 18 McMaster resident physicians. Patient deaths that were the most memorable involved unexpected deaths, first time death pronouncement while on call, cardiopulmonary resuscitation leading to death, and challenging family dynamics surrounding the death. Participants experienced feelings of guilt, fear, worry, shock, and sadness, which were accompanied at times by difficulties sleeping, rumination on their role in the patient's care, hyper-vigilance on future shifts, avoidance of similar cases, empathy loss with repeated exposure to death, and even career changes into alternative clinical specialties. Participants unanimously normalized these experiences, and felt underprepared to cope with these feelings.

The emotional and behavioural responses described by participants are congruent with acute grief and psychological trauma, which is defined as emotional, cognitive, behavioural and physical responses to a stressful event (1, 12-14). While more experienced physicians have reported acute grief responses to a patient's death, they require less psychological and emotional support than trainees presumably due to the development of adaptive coping mechanisms over time (15). Impacts on trainees can persist, as a previous randomized controlled trial found that medical trainees exposed to an unexpected patient death in a simulated setting reported an increase in cognitive load during the exercise and worse learning outcomes three months later (7).

Despite empathy playing a central role in physician identity, participants in our study describe a reduction in empathy towards patients with repeated death experiences. A systematic review found a self-perceived decline in empathy throughout medical training amongst trainees, with higher rates occurring during the clinical years where learners are involved in direct patient care (16). A study of trainees rotating through a medical oncology ward reported a decline in empathy that was associated with repeatedly witnessing patient deaths (17), and medical students have described using empathy loss as a self-identified coping mechanism after experiencing patient death early in training (18). This loss of empathy represents a stark discordance to the professional and societal expectations of physicians to provide patients with empathetic and compassionate care.

Difficult situations that lead to psychological distress and trauma are often associated with unexpected events and the perception of loss of control during the scenario (19). Both

human and animal studies have shown that when a subject is given control over a stressful stimulus (for example the ability to change or stop the stimulus) there is a decrease in fear and stress (19-21). Furthermore, perceived self-efficacy and the ability to impact an outcome further attenuates trauma responses, and has been shown to biochemically reduce the level of circulating catecholamines and psychologically lower distress (22, 23). Bolstering coping mechanisms through the use of psychological interventions such as cognitive behavioural therapy to deal with traumatic situations prior to exposure has been shown to reduce psychological trauma, and may be beneficial amongst professionals at risk of post-traumatic stress (19, 24). In our study, participants unanimously reported feeling unprepared to deal with the death of a patient, with many citing unexpected deaths and the fear that their own actions may have impacted the trajectory of the patient's decline as the most distressing part of the patient death experience. In addition to advancing clinical acumen and medical knowledge, programs that focus on how to cope with and manage unexpected patient deaths may reduce trainees 'psychological distress in the clinical setting, although more research is needed to validate such interventions.

There are some limitations with our study. Through specifically inquiring about memorable patient deaths, we may have introduced selection bias by recruiting trainees that had more traumatic experiences. To minimize this bias, recruitment materials simply inquired about patient death experiences to maintain neutrality, in an attempt to also explore positive scenarios. While the more memorable circumstances may not fully represent non-traumatic death exposures, the traumatic experiences may better identify gaps and opportunities to improve learner support. Finally, our study recruited participants solely from McMaster University in Ontario, Canada, and may not be fully generalizable to the experiences of trainees at other residency training programs or hospital sites. There may be educational programs already in place at other institutions that focus on developing coping strategies for patient death experiences. Despite the heterogeneity of our participant population, patient death experiences amongst participants were universal.

Overall, the death of a patient can be a traumatic experience for medical trainees, and may be associated with acute grief and psychological stress. Repeated exposure leads to depersonalization and empathy loss. While the professional expectation of physicians is to provide compassionate, empathetic patient care, traumatic experiences during medical training may negatively impact this over time through empathy loss and compassion fatigue. Educational initiatives to prepare trainees for these experiences and teach adaptive coping strategies may help mitigate psychological trauma and empathy loss, although further research is required to explore these strategies.

Word count: 793

Total word count: 2621

ACKNOWLEDGEMENTS

The authors would like to extend a thank you to the program administrators for their assistance in recruitment for this study. We would also like to thank the resident trainees who shared their stories for the purpose of this study.

FUNDING AND SUPPORT

This study was generously supported by the McMaster Postgraduate Medical Education Research Grant awarded to WY.

OTHER DISCLOSURES

None.

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TABLES AND FIGURES

Table 1: Participant Demographics

Participant	Age	Program	Year of Training	Occurrence of First Patient Death	Previous Personal Exposure to Death (Y/N)
1	33	Internal Medicine	3	Residency	Y
2	26	Internal Medicine	1	Residency	Y
3	27	Obstetrics	2	Medical School	Y
4	24	Internal Medicine	1	Medical School	Y
5	25	Internal Medicine	1	Medical School	--
6	29	Radiation Oncology	1	Residency	Y
7	28	Psychiatry	2	Residency	Y

8	27	General Pathology	4	Medical School	N
9	30	General Surgery	2	Medical School	N
10	25	Radiology	1	Medical School	Y
11	25	Family Medicine	1	Medical School	Y
12	27	Family Medicine	1	Residency	Y
13	27	Psychiatry	1	Medical School	Y
14	24	Family Medicine	2	Medical School	N
15	28	Radiology	2	Medical School	Y
16	28	Family Medicine	1	Medical School	Y
17	26	Family Medicine	1	Medical School	Y
18	37	General Pathology	4	Medical School	Y

APPENDIX

Supplemental Data: Semi-Structured Interview Guide

Demographics

1. What year of residency are you in?
2. What residency program are you in?
3. How old are you?
4. When during your medical training did you have your first experience with a patient's death?
5. Did you have a personal or professional experience with death prior to starting medical school?

Interview Questions

1. Please describe your first experience with a patient's death during medical training.

   a. How involved were you with the care of this patient?
   b. How much time did you spend caring for the patient?
   c. What were the circumstances surrounding the death? (ex. planned, expected, unexpected, medical error)
   d. What was your role before and after the patient's death?
   e. Did you speak with the family of the patient?
   f. Were you present at the time of death? Were you involved in pronouncing the death?
   g. Was there a specific/formal conversation or discussion about this patient's death?
   h. Who was involved in this conversation? What did it entail? How was it useful?
   i. What would you have changed about it?
   j. Did you talk about this experience with someone else outside from work? Who? How was it useful?
2. How did this experience with patient death impact you?
   a. For example, did it impact your learning, ability to provide patient care, mental health, work?
   b. Did this experience affect any of your personal relationships?
3. Did you feel like the training you received prepared you for this experience?
4. What kind of things would have made this experience more positive?
5. Did you use any specific strategies or resources to cope with the death of the patient?
   a. Which resources were you aware of within or outside of PGME at McMaster?
   b. Were you concerned about any of the strategies you utilized?
   c. Were there any other activities that you found helpful when dealing with a patient's death? – e.g. some people focus on hobbies, cooking, exercise, etc.
6. Can you think of another experience with a patient's death that stands out? Was this experience affected by the first one?
7. Did the policy changes with COVID-19 (protected code blues with minimal junior learners in room, no visitor's policy) impact your experiences with patient death?
8. Any other comments?