

The impact of patient death experiences early in training on resident physicians: a qualitative study

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Abstract

Background: Patient death is an inevitability during medical training, with subsequent psychologic distress, decreased empathy and worse learning outcomes. We aimed to explore resident experiences with patient death early in training, including the immediate and delayed impacts of these experiences, preparedness of trainees for these events and coping strategies used, potentially identifying gaps and opportunities to further support trainees during difficult or traumatic events.

Methods: We performed a qualitative study using phenomenology methodology to understand trainees' personal experiences with patient death. Resident physicians who had completed an internal medicine rotation at McMaster University, Hamilton, Ontario, were invited to participate from December 2020 to April 2021. Semistructured 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 with the use of thematic and interpretive analysis.

Results: Eighteen participants were interviewed. On average, the interviews were 40 minutes in length. The participants' mean age was 27 years. The majority of trainees (10 [56%]) were in their first year of residency, with 5 (28%) from family medicine and 4 (22%) from internal medicine. Most participants (13 [72%]) had experienced their first patient death during medical school. Three themes were identified: patient death circumstances, immediate and delayed emotional impact, and preparedness and coping mechanisms. Unexpected death, pronouncing death, cardiopulmonary resuscitation and communicating with families were common challenges. Feelings of guilt, helplessness and grief followed the events. Feeling underprepared contributed to emotional consequences, including difficulties sleeping, intrusive thoughts and emotional distancing; however, these experiences were consistently normalized by participants.

Interpretation: Patient death during medical training can be traumatic for trainees and may perpetuate loss of empathy, changes to practice and residual emotional effects. Educational initiatives to prepare trainees for patient death and teach adaptive coping strategies may help mitigate psychologic trauma and loss of empathy; further research is required to explore these strategies.

Patient death is an inevitability during 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 posttraumatic stress disorder (PTSD) with hypervigilance, cognitive changes, sleep difficulties and emotional instability.¹ For health care providers, the death of a patient often results in guilt, fear and a feeling of powerlessness across all clinical environments.¹⁻⁴ Compassion fatigue, or secondary traumatic stress, is a unique form of psychologic trauma that arises from repeatedly witnessing suffering, trauma or death, and can contribute to emotional exhaustion, depersonalization and loss of empathy.⁴⁻⁶ Exposure to trauma such as the death of a patient often occurs as early in a physician's career as medical school and can affect 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 psychologic impact of witnessing death, we aimed to explore the impact on trainees of their early experiences with patient death, ascertain how prepared trainees feel to manage these events and identify commonly used coping mechanisms. 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

Study design and setting

We conducted this study at McMaster University, Hamilton, Ontario, from December 2020 to April 2021. We used a qualitative phenomenology methodology to study trainees' past experiences with patient death. We used interpretive phenomenology as an analytic strategy to both describe the early experiences of residents with patient death from their perspective, and understand the overarching meaning and impact of the experience on trainees. We analyzed interview transcriptions using interpretive thematic analysis to explore which patient death experiences trainees considered memorable, how trainees were affected by the situation, how they navigated emotional responses and which coping mechanisms they used. Interpretive thematic analysis is well suited for determining patterns of behaviour or responses among our participants in response to patient death.¹⁰ We used the Consolidated Criteria for Reporting Qualitative Studies checklist to ensure comprehensive data reporting.¹¹

Participant eligibility and recruitment

Residents from all McMaster University postgraduate training programs were eligible to participate if they had completed at least 1 block of internal medicine training on the clinical teaching units (CTUs) at 1 of the 3 main teaching hospitals in Hamilton between July 2019 and July 2021. The experience with patient death did not have to occur on the CTU rotation. Participants were not eligible if their base training program was from a university other than McMaster, they had not completed a full block on the internal medicine CTU, or they did not provide consent to be interviewed. We used purposive sampling to ensure a diverse group of residents from all training levels and programs.

We initially invited all residents to participate, and then subsequently focused recruitment on specific programs or years of training to ensure a diverse population. Administrative assistants from all eligible postgraduate programs were asked to distribute recruitment information to their residents (Appendix 1, available at www.cmajopen.ca/content/11/5/E1006/suppl/DC1). We posted posters on social media, including X (formerly Twitter) and Facebook, and the chief medical residents sent emails to all current trainees rotating on the CTU between December 2020 and April 2021 to facilitate recruitment. Recruitment continued until thematic saturation was achieved.¹²

Participants received a \$20 electronic gift card. There was no relationship established between the researchers and the participants before study commencement. The participants were informed about the rationale and reason for the study, and they did not have any other knowledge of the interviewer. There was no presence of nonparticipants during interviews.

Data sources and collection

Given that the interview topic was considered personal and sensitive, we conducted one-on-one interviews. Semistructured interviews were conducted by I.S. 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 well-being, and coping mechanisms used. Before interviews were conducted, we pilot tested the interview guide with the research team. Both W.Q.W.Y. and C.G. acted as participants in 2 separate interviews, with I.S. performing the pilot interviews and D.B.V. observing. These pilot interviews were not included in the final analysis. No changes were consequently made to the interview guide (Appendix 1). No follow-up interviews were conducted.

Interviews were recorded via Zoom and transcribed by a commercial transcription service (Transcript Heroes, <https://transcriptheroes.ca/>). Zoom video conferencing was used to facilitate convenient meeting times for participants and to maintain social distancing during the COVID-19 pandemic. Psychological support services that could be accessed at any time were offered to participants at the start of the interview. Transcripts were not returned to participants for comments or corrections. We did not perform member-checking for participants to provide feedback on the data.

Data analysis

W.Q.W.Y. and C.G., both internal medicine residents at the time of data collection, analyzed the data independently, iteratively and concurrently with data collection in a constant comparison method. The interview transcriptions were analyzed one by one by means of thematic analysis to understand which patient death experiences were considered memorable, how trainees were affected by the situation, how they navigated emotional responses and which coping mechanisms they used (level 1 coding). A code book was created with NVivo (QSR International). All data were reviewed by D.B.V. and I.S., and codes were expanded and merged (level 2 coding).

The research team used reflexivity at every stage of the study, through acknowledging and discussing how their personal experiences may have affected data interpretation. All disagreements in coding were resolved by consensus at research meetings, held every 1–2 interviews. D.B.V. is a male general internist and clinician educator at McMaster University with more than 5 years of experience in qualitative methods, including a master's degree in Health Professional Education from Chicago University. He has a clinical focus on end-of-life care and medical assistance in dying, and supervises learners in the inpatient and outpatient General Internal Medicine Clinical Teaching Unit at St. Joseph's Healthcare Hamilton. C.G. is a female 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. W.Q.W.Y. is a female 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. I.S. is a female medical student at the University of Toronto. All members of the research team received training from D.B.V. before interviews and data analysis.

Ethics approval

This study was approved by the Hamilton Integrated Research Ethics Board (protocol 5140).

Results

Twenty-eight participants were screened, of whom 8 did not respond to follow-up contact and 2 did not meet the inclusion timeline for CTU completion. The remaining 18 participants were interviewed. On average, the interviews were 40 minutes in length. The participants' mean age was 27 years. The majority of trainees (10 [56%]) were in their first year of residency, with 5 (28%) from family medicine and 4 (22%) from internal medicine. Other disciplines included radiology, pathology, psychiatry, general surgery, obstetrics and gynecology, and radiation oncology. Most participants (13 [72%]) had experienced their first patient death during medical school. A summary of participant demographic characteristics is presented in Table 1.

Themes identified

The major themes identified in the interviews were patient death circumstances, immediate and delayed emotional impact, and preparedness and coping mechanisms, which effectively explored what the experience was and how it affected those involved. Describing the patient death circumstances identifies the types of death experiences that residents found memorable and therefore were associated with the highest impact. The immediate impact includes the behavioural and emotional consequences that occurred as a result of the death over the days that followed, and the delayed impact illuminates the longer-lasting effects that persisted over time. Preparedness to cope with the circumstance identified potential gaps in support and prior education offered to trainees, and coping mechanisms provided insight into how residents therefore navigated these situations on their own.

Patient death circumstances

Memorable patient death scenarios included unexpected death in which the patient's condition deteriorated suddenly, pronouncing death for the first time while on call, cardiopulmonary resuscitation, and meaningful or challenging family

interactions around the time of the patient's death (Table 2). The most common response to patient death was sadness, shock and helplessness, regardless of the cited circumstance.

Table 1: Participant demographic characteristics

Characteristic	No. (%) of participants n = 18
Age, yr	
20–29	15 (83)
30–39	3 (17)
Residency program	
Family medicine	5 (28)
Internal medicine	4 (22)
Radiology	2 (11)
General pathology	2 (11)
Psychiatry	2 (11)
Radiation oncology	1 (6)
Obstetrics and gynecology	1 (6)
General surgery	1 (6)
Year of training	
PGY 1	10 (56)
PGY 2	5 (28)
PGY 3	1 (6)
PGY 4	2 (11)
Occurrence of first patient death	
During medical school	13 (72)
During residency	5 (28)
Prior personal exposure to patient death	14 (78)
Note: PGY = postgraduate year.	

Table 2: Patient death circumstances

Theme	Illustrative quote
Unexpected death with sudden deterioration of patient's condition	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) Because it was unexpected, I definitely felt guilty because I [wondered whether] there was something I could have done to prevent [the death]. (P12)
Pronouncing death	I'm reading [in the McMaster Internal Medicine handbook] about how to pronounce a patient's death as I'm going to do it. ... 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 resuscitation and family interactions	I think it was mostly shock and fear for this patient. And a sense of derealization — 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)

During unexpected death, participants described feeling shock and guilt that the patient's condition deteriorated and, in many cases, wondered whether their own performance had negatively influenced the patient's trajectory. Participants reported feeling unqualified and unprepared to pronounce a death on overnight call. In many cases, cardiopulmonary resuscitation precipitated feelings of anxiety and distress owing to the intensity of the situation. 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.

Immediate and delayed emotional impact

Participants reported using both distraction and reflective techniques as coping strategies immediately after the death, and, in many cases, they discussed the experience with fellow residents and family members (Table 3). Distraction techniques included exercise, video games, unhealthy eating and, occasionally, alcohol consumption. Reflective techniques included journalling, writing letters to the patient or their family (which were never sent), and study around the physiology and medical management of the case. Some participants debriefed with the staff or senior resident immediately after the event, and those who debriefed felt this was helpful to process their emotional reaction to the situation.

All participants reported that the patient death experience was difficult for them. Many ruminated on how they could have managed the patient differently to achieve a more favourable outcome, and many reported difficulties sleeping and mood changes after the event. During subsequent call shifts or clinical exposure, participants reported feeling nervous about managing similar patients and, as a result, were hypervigilant. Some participants actively avoided similar cases, opting to

choose other types of patients to do rounds with, or consciously distanced themselves emotionally from patients who reminded them of the patient who had died.

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

Preparedness and coping mechanisms

All participants normalized their experiences with patient death and did not believe the emotional impacts were long-lasting (Table 4). Participants perceived witnessing death as a necessary component of medical training and central to the role of a physician; many endorsed this with a sense of resignation. Most participants further reported feeling underprepared with respect to prior training and education to manage and cope with patient death.

Interpretation

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

Table 3: Immediate and delayed emotional impact

Theme	Illustrative quote
Distraction and reflection	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) Journalling helps because it gives me a structured way to reflect on things. Once I put [my thoughts] in writing, [it solidifies] this is actually how I was feeling at that time. (P8)
Rumination and hypervigilance	[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) [The death] played on my mind, feelings of guilt ... 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)
Depersonalization, loss of empathy and avoidance	I don't feel as affected as much anymore. I don't think I've cried since [that patient death]. 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 to myself that this is a defensive mechanism. (P1) 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)

Table 4: Preparedness and coping mechanisms

Theme	Illustrative quote
Normalization of experience	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)
Preparedness	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)

normalized these experiences and felt underprepared to cope with their feelings.

The emotional and behavioural responses described by our participants are congruent with acute grief and psychologic trauma, which is defined as emotional, cognitive, behavioural and physical responses to a stressful event.^{1,13-15} Although more-experienced physicians have reported acute grief responses to a patient's death, they require less psychologic and emotional support than trainees, presumably owing to the development of adaptive coping mechanisms over time.¹⁶ Impacts on trainees can persist: a previous randomized controlled trial showed 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 3 months later.⁷

Although empathy plays a central role in physician identity, participants in our study described a reduction in empathy after repeated patient death experiences. In a systematic review, Neumann and colleagues¹⁷ found a self-perceived decline in empathy throughout medical training among trainees, with higher rates occurring during the clinical years when learners are involved in direct patient care. A study of trainees on a medical oncology rotation showed a decline in empathy that was associated with repeatedly witnessing patient death,¹⁸ and medical students have described using empathy loss as a self-identified coping mechanism after experiencing patient death early in training.¹⁹ 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 psychologic distress and trauma are often associated with unexpected events and the perception of loss of control during the situation.²⁰ 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.²⁰⁻²² Furthermore, perceived self-efficacy and the ability to affect an outcome further attenuates trauma responses, and have been shown to biochemically reduce the level of circulating catecholamines and to psychologically lower distress.^{23,24} Bolstering coping mechanisms through the use of psychologic interventions such as cognitive behavioural therapy to deal with traumatic situations before exposure has been shown to

reduce psychologic trauma and may be beneficial among professionals at risk for posttraumatic stress.^{20,25} All our participants reported feeling unprepared to deal with the death of a patient, with many citing unexpected death and the fear that their own actions may have affected 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, implementing a program focused on how to cope with and manage unexpected patient death may reduce trainees' psychologic distress in the clinical setting, although more research is needed to validate such interventions.

Limitations

Our study may have been subject to selection bias, as participants who chose to share their patient death experiences may have had more memorable or traumatic experiences than nonparticipants. In an attempt to minimize this bias, our recruitment materials simply inquired about patient death experiences to maintain neutrality as well as explore positive scenarios. Although the more memorable circumstances may not fully represent exposure to nontraumatic death, the traumatic experiences may better identify gaps and opportunities to improve learner support. Our study recruited participants solely from McMaster University, and our findings may not be fully transferable 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 strategies for coping with patient death. Finally, despite the heterogeneity of our participant population, patient death experiences among participants were universal.

Conclusion

The death of a patient can be a traumatic experience for medical trainees and may be associated with acute grief and psychologic stress. Repeated exposure may lead to depersonalization and loss of empathy. Although physicians are expected to provide compassionate, empathetic patient care, traumatic experiences during medical training may lead to loss of empathy and compassion fatigue over time. Educational initiatives to prepare trainees for patient death and teach adaptive coping strategies may help mitigate psychologic trauma and loss of empathy. Further research is required to explore these strategies.

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Data sharing: Original transcripts will not be made available. Thematic analysis is available on request to the corresponding author.

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