Death on the table – anaesthetic registrars' experiences with perioperative deaths

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2013

Postgraduate approval date: 6 June 2012

Biomedical Research Ethics Committee approval date: 3 July 2012

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ACKNOWLEDGMENTS

I would like to acknowledge the participants of this study for sharing their time and experiences with me.

I acknowledge Dr D Forde for doing a critical reading of this dissertation.

I am grateful to Dr A Torborg for her assistance with administrative details and in formulating the research proposal.

I would like to thank Professor T E Sommerville for his endless patience and guidance throughout this project. His encouragement and constant nudging to explore ideas and concepts further made this a truly valuable learning experience for me.

ABBREVIATIONS / DEFINITIONS

For the purpose of this study, a ***perioperative death*** was defined as any patient death, regardless of cause, occurring in the time between the patient's entry into the Theatre complex and discharge from the Recovery Room.

ASA - American Society of Anesthesiologists: referring to the ASA rating of a patient's preoperative condition

M&M - Mortality and morbidity meeting

MO - Medical officer : a doctor practising in a specific medical discipline or department, but who has not entered into nor completed specialist training.

MVA - Motor vehicle accident

UK - United Kingdom of Britain and Ireland

UKZN - University of KwaZulu-Natal

US - United States of America

ABSTRACT

Background: Perioperative death is thankfully a rare occurrence; it is nonetheless an almost inevitable – and stressful – event in the career of an anaesthetist. Previously published studies indicate that an alarmingly high number of anaesthetists report experiencing adverse personal and professional effects following a perioperative death. There exists a wide spectrum of personal reactions to stress, and an equally large number of personal and external factors that may influence these. Existing literature helps to quantify the problem statistically; this study aims instead at greater understanding of how anaesthetists make meaning of such events and how these experiences impact on them as individuals and professionals.

Methods: This study explores the experiences following perioperative deaths of ten registrars in the UKZN Department of Anaesthesia. Individual, semi-structured interviews were carried out, and analysed thematically in a qualitative manner.

Findings*:* The themes that emerge from analysis can be grouped into three broad categories:

- Perceptions of participants' professional role as anaesthetists – professional practice, effect of increasing seniority, potential effects of being given time out of theatre, ability to function after a perioperative death
- Relationships with patients and patients' families – interaction with patients, differences between elective and emergency cases, interaction with the patient's family, feelings of guilt or responsibility
- Impact on their personal lives – physical impact, support from others, feelings of desensitisation.

***Conclusion**:* Participants' narratives reveal diversity in their experiences, responses, support needs, and coping strategies following such critical events. Participants all felt able to function professionally in theatre immediately after the event, and had evidently developed coping mechanisms during the course of their careers; however, at a personal level these may be suboptimal, or serve to isolate the individual, in particular cases. The way in which the event is handled in the immediate aftermath by the individual, his/her seniors and peers does have potential to impact on how a person copes and processes the event. This study addresses the gap in our understanding of anaesthetists' responses to perioperative deaths. It is hoped that increasing awareness of such issues will encourage a more mindful approach when the situation is next encountered, and will see more emphasis on coping with such stressful situations, in anaesthetic training.

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1

Introduction

1

INTRODUCTION

"The intra-operative death of a patient is a mercifully rare occurrence, but one that can have considerable psychological and professional consequences for all members of the theatre team." [1]

While South African statistics are difficult to come by, UK surveys [2] note that out of 100 000 anaesthetics, up to 30 perioperative deaths may occur, these being due to general surgical causes. The incidence of deaths due to the anaesthetic alone is even more rare, occurring 0.5-0.8 times per 100 000 cases. As uncommon as it may be however, a perioperative death remains an almost inevitable event in the career of an anaesthetist and is potentially one of the most stressful events we encounter. While distressing for the family and for other caregivers, a patient's death may affect the anaesthetist differently, depending upon the circumstances surrounding the event, the course of the anaesthetic, the cause of death, the anaesthetist's personal circumstances, and personal responses to the event. White [1] notes that just as there may be considerable variation in the amount and type of stress experienced by the anaesthetist after a perioperative death, there is similarly a great deal of variation in the individual's ability to cope with that stress and there may be times and circumstances in which normal coping mechanisms become overwhelmed.

The body of literature on anaesthetists' attitudes to perioperative deaths is currently small. One of the earliest articles on the subject, appearing in the literature in 1989, [3] comprised recommendations for the anaesthetist on how to handle the aftermath of a perioperative death. In recent years, several other individuals and anaesthetic societies have followed with similar recommendations [2, 4, 5]. A small number of studies conducted in the US, UK and Canada, all in the form of questionnaire surveys, attempt to quantify the effects of this critical event. The statistics indicate that an alarmingly high number of respondents (up to 70% in some studies)[6-8] report experiencing adverse personal and professional effects following a perioperative death, with relatively few receiving support.

As an anaesthetic registrar myself, I have had my own experiences with perioperative deaths. Some, I have struggled considerably with, whilst others have been easier to come to terms with. I have also seen colleagues exhibit varied responses to such events and in some circumstances suffer significant emotional and professional distress. I wished to understand more about our responses to these events and the possible short and long term consequences arising from them.

Existing studies have created significant awareness of our vulnerability as anaesthetists to the potential emotional and professional impact of such adverse events. However, while the studies quote numbers of anaesthetists who reported effects such as feelings of guilt, compromise in their professional functioning, or a preference for time off after

the incident, none seemed adequately to pursue *why* these events impacted on the individuals concerned in the ways they did. Why did some cases affect them significantly and others not? What would render a group of medical professionals vulnerable to psychological distress of this nature? How did they make meaning of these deaths? To add to the depth of our understanding of this area of practice, the study reported here seeks to explore these questions qualitatively by documenting the experiences of anaesthetic registrars following the occurrence of a perioperative patient death, examining what personal and professional consequences arise from this experience, exploring the possible support needs of anaesthetic registrars following such adverse events, as well as their opinions on the current availability of such avenues of support within the UKZN Department of Anaesthesia.

In the following chapters, I shall explore what literature exists on the subject, describe the methodology of my study, portray my findings, and discuss their significance. The findings include eleven themes that arose from the interview data, which I have grouped into three broad areas: the impact of a perioperative death on the participant's **professional role**, aspects of their **relationships** with patients and patients' families, and the **personal impact** of such an event on the participant. In the discussion, I shall highlight a few interesting dichotomies that surfaced as we compared the narratives of different participants. These include comparisons between participants' feelings of guilt vs. feelings of professional failure, distinctions between one's professional role vs. their personal identity, and, as articulated by one participant, the experience of *dissociation*

vs. disconnection. Finally, in the conclusion, I shall consider some of the implications of the study's findings, and identify potential areas for future research that may further our insight on this subject.

2

Literature Review

2

LITERATURE REVIEW

Relatively little research has been done on the impact of perioperative deaths on anaesthetists, especially within the South African context. Earlier articles and editorials appearing in the international literature (namely by authors **Bacon**[3] and **Aitkenhead** [5]) acknowledge the stressful nature of such an event and offer an approach on how to handle the sequence of events thereafter. In recent years, a small number of international surveys have sought to quantify the effects of perioperative deaths on practitioners. The **Smith and Jones** [9] survey of orthopaedic surgeons, followed by a survey of cardiac surgeons and anaesthetists by **Goldstone et al.**[10], focus largely on attitudes to working immediately after an intraoperative death. Subsequent studies focusing specifically on anaesthetists include two UK studies by **White and Akerele** [11] and **McCready and Russell** [12], a Canadian survey by **Todesco et al.**[13], and two US national surveys by **Gazoni et al.**[7] and **Bauer et al.**[8]. Recurrent themes in all of these studies include the **emotional impact** of perioperative deaths, **the need for time off** in the aftermath of such an event, **effects on subsequent work performance**, and **post event support and debriefing**. The literature review below will thus be presented broadly in terms of these themes. It will also include literature dealing with advice on the **administrative aspects** of a perioperative death, and will then consider literature from outside the field of anaesthesia, looking at **insights and reactions from other professions**.

- **The nature, causes and effects of stress in anaesthesia**

Literature highlighting the high-stress nature of anaesthesia as a specialty provided a starting point for my review, offering some insight into the stressors encountered and the potential impact on those in the profession [6, 14-16]. In 1997, The Association of Anaesthetists of Great Britain and Ireland published a document entitled 'Stress in Anaesthetists' [16]. They acknowledge the increased vulnerability of anaesthetists to suicide, substance abuse and addiction (a phenomenon well documented in the literature [6, 17]) and propose that this vulnerability to such outcomes is as a result of ineffective coping mechanisms for dealing with stress, and inadequate support systems within our profession. They cite three main causes of stress as (1) lack of control of the work environment, (2) unpredictability of work leading to a high level of permanent anxiety (this, they note, was a feature of all emergency work and characteristic of anaesthesia as a profession), and (3) over-extension due to being pressed beyond real or perceived limits. For the trainee anaesthetist, additional environmental factors include irregular working hours, sleep deprivation, heavy workload related to service provision, the large volume of emergency work and rigorous academic demands. Other sources of stress cited in the document include difficult interpersonal relationships (with surgical colleagues predominantly, as well as with difficult patients and their families), fear of litigation and constant pressure to achieve goals within limited time.

- **Emotional sequelae of perioperative deaths**

Looking firstly at the wider field of medicine, studies focusing on the emotional reactions of medical students, interns and doctors in other disciplines to the death of a patient also bear relevance to this study [18, 19]. They inform us of common acute stress responses to distressing events (e.g. recurrent, intrusive thoughts and avoidant behaviour) that may be experienced universally, regardless of medical specialty. The most significant finding from two such studies [18, 19] was the rarity of debriefings after such events, and the reluctance of senior doctors to discuss with their interns or students the emotional issues surrounding a patient death and how to cope with such reactions. The perception created amongst junior trainees, and hence the subsequent learned behaviour and attitude, was that discussion or displays of emotion were to be avoided.

Looking specifically at the surveys of anaesthetic personnel, White and Akerele [11], in their survey of 251 English anaesthetists of various grades (consultants, registrars, medical officers) note that 35% of their respondents admitted to feelings of personal responsibility for an intraoperative death. Unfortunately no mention was made as to why they felt this, or how they resolved these feelings (if at all). More detail emerged in the Todesco [13] study, which focused specifically on the effects of *unanticipated* perioperative deaths. Though the multiple-choice questionnaire format in this study is somewhat restrictive, an open section inviting written comments was included at the end which received descriptions of the emotional sequelae experienced: blame, feelings

of guilt, and recurrent distressing thoughts about what could have been done differently. Several respondents described “feeling devastated following an unanticipated perioperative death, even after peer review found no evidence of error or anaesthetic contribution” [13].

Respondents in the study by McCready and Russell [12], speaking of their experiences specifically with perioperative obstetric deaths, described long-term sequelae including depression, nervous breakdown and prolonged sick leave. Recurring comments included descriptions of a culture of blame, heightened self-criticism, litigation proceedings, loss of confidence, and increased vulnerability to error.

Similar findings emerged in the studies by Gazoni [7] and Bauer [8] with more than 70% of respondents indicating a high level of emotional impact (guilt, anxiety, reliving the event). These effects were independent of the respondent’s demographics or years of experience, the patient’s condition, the preventability of the catastrophe, or its causal association with the anaesthetic. A total of 88% of respondents in the Gazoni study indicated that it took them some time to recover emotionally from the event; however “emotional recovery” was not defined, nor were the reasons for prolonged emotional impact determined.

- **Administrative measures**

In a 1989 article on the subject, one of the earliest to appear in the literature, author A K Bacon [3] makes criticism about anaesthetists' reluctance to discuss their emotional responses to unanticipated perioperative deaths, the paucity of literature on the subject, and the failure in our medical training to teach anaesthetists how to handle such disasters. His article outlines specific methods on how to break the news to family members, complete relevant documentation, deal with legal processes and debrief those colleagues involved in the incident. He identifies certain situations in which formal 'critical incident stress debriefings' are strongly recommended: "a case charged with profound emotion such as a child or patient with whom the team identify strongly; or a case in which the circumstances are so unusual as to produce a high level of immediate or delayed emotional reaction" [3]. In another landmark article published almost 10 years later, Aitkenhead [5] offers similar advice to help staff cope with the events following a traumatic incident in theatre. Both Bacon and Aitkenhead acknowledge that the anaesthetist may be particularly vulnerable to the stress associated with a death on table, and suggest support from colleagues and the involvement of mental health professionals if needed. Although the intended focus of both these articles is primarily on the administrative processes to follow after a death, and ways of preventing possible litigation, the recommendations that these authors offer are detailed and valuable.

In 2005 the Association of Anaesthetists of Great Britain and Ireland (AAGBI) published guidelines on how to handle the aftermath of a patient death during anaesthesia. This document, entitled "Catastrophes in Anaesthetic Practice – dealing with the aftermath" [2], was further adapted and recommended by the Australian Society of Anaesthetists (ASA) [4]. It serves not only as a guideline for the anaesthetist involved in the adverse event, but also highlights the role of the anaesthetic department and hospital in the management of such an event.

Both the AAGBI and ASA documents offer guidelines regarding initial actions to be taken after the event: medico-legal aspects such as record keeping and preparation of the body, support for the anaesthetist such as the presence of a colleague to assist with tasks and take over duties if needed, dealing with patients' relatives and debriefing the theatre team.

The recommended role of the relevant anaesthetic department and hospital management include: assessing the risk of recurrence of the catastrophe and the risk posed to other patients or staff, providing support to the anaesthetist, arranging relief of their duties if required, and implementing a system of informal mentoring to assist the anaesthetist to gain insight and perspective about the events that occurred. More senior management may become involved with inquiries and liaison with media.

To create awareness around how the catastrophe may affect the anaesthetist personally, the documents describe a number of emotions and physical symptoms that may be experienced following an adverse event: e.g. reliving the event, sleeplessness, fear, anger, guilt and exhaustion. They attempt to reassure the anaesthetist that such responses to extreme stress are not uncommon or abnormal, and encourage the anaesthetist to speak to senior colleagues, and to seek help with personal emotional responses as well as with difficulties experienced at work.

- **The need for time off after a perioperative death and effects on subsequent work performance**

Following a 1999 UK enquiry into the deaths of two elective patients on the same operating slate, recommendations followed that surgeons should not operate for 24 hours following an intraoperative death [11]. In response, Smith and Jones [9] undertook a questionnaire survey of 31 Welsh orthopaedic surgeons to assess their attitudes towards intraoperative deaths. The focus of this study was to determine the appropriate time to return to operating after having a death on the table. Respondents were also asked if they had received counseling following the death, and their opinions regarding the need for this. This survey reveals a lack of consensus amongst the respondents, with influential factors being the nature of the case (elective vs. trauma), severity of injury in trauma cases, and whether the trauma-related death was expected or not. Of those surgeons who continued operating immediately thereafter, none felt that their

competence had been compromised. Of those surgeons who indicated a preference for time off after an intraoperative death, the published article does not elaborate on their reasons, or state whether such details were asked in the questionnaire. While the stated objective of this study was to find out "if there was consensus amongst orthopaedic surgeons on how to cope with intraoperative death", it seems to focus solely on the impact of this adverse event on their professional functioning, and makes no mention of any personal or emotional sequelae, coping strategies employed, or what avenues of support were available to respondents.

A similar 2004 study by Goldstone [10], surveying cardiac surgeons and anaesthetists, also investigated whether an intraoperative death affected the outcome of subsequent operations by the same surgeon. This study included 371 respondents, who cumulatively reported an estimated 3672 intraoperative deaths. In this survey, 53% of the surgeons and 22% of the anaesthetists had stopped working for the day following an intraoperative death. Factors influencing the decision to stop working were listed in the article as fatigue (most common), emotion, medico-legal concerns, advice of surgeons or anaesthetists or managers, and reports in the literature. It is not stated whether these groupings were summarised from open responses, or were listed as possible options for respondents to select in a closed-ended questionnaire format. It was felt by 29% of anaesthetists and surgeons in this study that their subsequent ability to work was compromised by an intraoperative death. Though no increase was seen in mortality of patients operated on in the immediate aftermath of an intraoperative death, this

cannot necessarily be taken as an indication that the surgeon's professional ability was unaffected. No mention is made as to the operating times of these subsequent operations, complications experienced, nor more subjective factors such as the surgeon's ability to concentrate, feelings of confidence, levels of hyper-vigilance etc. Though these factors may not have translated into mortality outcomes in this study, they are nonetheless significant, and cannot be ignored when proposing guidelines on theatre practices. Such factors would apply similarly to the anaesthetist who continues working after a death on the table. To date, no objective study has been done to assess the effects of a perioperative death on the subsequent work performance of anaesthetists in the immediate aftermath, or in the days to weeks following the event.

When the findings of the Smith and Jones [9] survey were published on the website of the British Medical Journal, several of the responses received on the website were from anaesthetists, who commented that the impact of an intraoperative death was not limited solely to the surgical team, but affected all theatre staff involved in the case. Many respondents also expressed concern over the scarcity of research in this area [11]. This prompted White and Akerele's [11] questionnaire survey specifically of anaesthetists. The majority (87%) of respondents in this survey continued working, and delivered another general anaesthetic in the 24 hours after having a perioperative death. Of those who continued working, 77% reported no compromise in their professional ability during that period. However 71% of respondents "agreed that it was reasonable for medical staff not to take part in operations for 24 hours after an

intraoperative death". In the absence of professional compromise, respondents' reasons for a preference of time-off were not mentioned, nor what activities/interventions they would like to participate in during that time (e.g. time at home away from work, debriefing with seniors, counseling sessions with other mental health professionals).

Reasons reported by respondents in the Todesco study for returning to work after a death include no relief available to take over cases, pressure from surgeons, and distraction with work as a coping mechanism [13].

In contrast to previous studies, Gazoni et al. report that the majority of their respondents (67%) *did* feel compromised in their ability to provide anaesthetic care in the subsequent 24 hours [7]. While the authors looked to the literature in other areas to demonstrate the impact of stress on work performance, specific details of how respondents in this study considered their professional functioning to be compromised was not sought. This information becomes crucial when considering that despite 67% of respondents admitting to feeling their capacity in theatre impaired, only 7% of the respondents in this study were given time off after the event. While 93% of respondents returned to work, the reader is left without a clear picture of which aspects of their functioning might have been affected.

Bauer et al. similarly reported that 70% of respondents in their study felt their confidence in future cases was affected, while 50% felt their future performance was affected [8]. Details of *how* their performance was affected were not elaborated on. Only 4% of these respondents took time off after the episode, most being less than 24hours. Pressure to continue with busy theatre slates was cited as one of the main reason for continuing to work immediately after a perioperative death.

- **Post event support**

In the White and Akerele study, less than a third of respondents participated in any form of debriefing, yet the majority considered debriefing to be appropriate [11]. We have no further insight into what respondents wished to gain from the debriefing sessions, and whether they were able to achieve this through any other means in the absence of debriefing.

With specific focus on obstetric intraoperative deaths, McCready and Russell's [12] survey of 706 anaesthetic consultants asked directed questions about the nature, source and benefit of support received by respondents. They found that 60% of respondents involved in an obstetric death or other traumatic event received no offer of support, and 65% were unaware of potential sources of support. They received descriptions of highly stressful litigation procedures and coroner's inquests, as well as comments on the existence of a 'culture of blame' and a perception of weakness if one admitted to

distress after a traumatic event. While departmental M&M meetings and 'critical event audits' were felt to be constructive and valuable by some, a "few describe a humiliating experience of standing before their departments feeling condemned, unsupported and fighting to justify their actions". [12]

Approximately half of respondents in the Gazoni, Bauer and Todesco studies attended some type of formal debriefing (departmental morbidity and mortality meetings, confidential hospital quality assurance meeting or other type of formal debriefing)[7, 8, 13]. Debriefings occurred as often in university hospitals as in non-academic hospital, and more frequently for anaesthetic trainees (registrars) than for specialists. The majority of respondents from all 3 studies believed that mandatory debriefing sessions, counseling, and operating room debriefings would be beneficial.

Effect on skill – "the 3 victims"

In a 2012 editorial, Martin and Roy [20] raised the possibility of 'first, second and third victims' in a perioperative catastrophe. The patient who has suffered death or disability in such an adverse event is the first victim. The anaesthetist who suffers emotional and psychological trauma in the aftermath of such an event may be considered the second victim. If the anaesthetist's professional capacity is impaired as a result of an acute stress response, a patient who is subsequently anaesthetised by the impaired anaesthetist may become the third victim in this catastrophe. Martin and Roy raise some key questions pertaining to this possibility. Can the anaesthetist involved in the event be considered to be transiently "impaired" in the period immediately following a catastrophe? Is it appropriate for such an anaesthetist to resume clinical duties in the following hours or days? Are subsequent patients placed in their care being exposed to an increased risk? How can the anaesthetist best be helped to process and recover from a catastrophic event? While Martin and Roy provide a strong argument in favour of a temporary break from clinical duties, they acknowledge that the financial and logistical implications of cancelling operating slates to facilitate time-off for the anaesthetist are often prohibitive, and most practitioners continue working after an adverse event in theatre. Anecdotally, in the South African training context, staff shortages and resource constraints are also prohibitive factors in the provision of such post-event support for anaesthetic trainees.

In their study on the phenomenon of 'second victims', Scott el al. [21] interviewed 31 health care professionals (doctors, nurses, social workers, physical therapists etc.) who had been involved in an unanticipated adverse patient event. These interviewees described their experiences, and various distressing symptoms in the aftermath of the event. Though individual coping methods differed, Scott et al. concluded that second victims experience a largely predictable "post-event trajectory" consisting of six stages: (1) chaos and accident response, (2) intrusive reflections, (3) restoring personal integrity, (4) enduring the inquisition, (5) obtaining emotional first aid and (6) moving on. They concluded that successful screening of 'at-risk' professionals after such an adverse event, and the provision of appropriate support, could expedite recovery and lessen potential negative career outcomes.

- **Insights from other fields – reactions of other professions**

Several of the studies described above report experiences of emotional and psychological distress as well as professional impairment to some degree amongst their respondents. However little exists in the literature regarding how anaesthetic personnel make meaning of these experiences and cope with these effects, either acutely or in the long term. To gain greater insight into this area, I looked to other areas in the literature from which I could draw parallels.

Paramedics are a group of medical professionals whose job holds many similarities to that of anaesthetists, namely high stress levels, the urgent nature of many of the medical conditions being attended to, the relative anonymity of the patients due to lack of prior contact, and the high levels of trauma seen. In an ethnographic study on the strategies used by paramedics to cope with patient death, Palmer [22] identified six mechanisms frequently used: educational desensitisation, humour, language alteration, scientific fragmentation, escape into work and rationalisation. His description of 'scientific fragmentation' is a common trait amongst medical personnel whereby patients are identified by and discussed in reference to their disease process or injury, rather than by name or personal characteristics: "that MI we brought in the other day", "the old hip woman". This method of depersonalisation enabled the paramedic to focus on less emotive medical details of the case and allowed a degree of emotional detachment from the patient and their personal circumstances. 'Language alteration', making use of complex, precise medical terminology with its inherent effect of distancing one's self from the patient, is another mechanism seen among paramedics and anaesthetists alike. Palmer's observations were helpful in highlighting and drawing parallels to some of the coping mechanisms employed by the participants in this study.

Ashforth and Humphrey[23] explored the role of emotion in the workplace – specifically how emotions are *expressed* compared to how they are *experienced*. They talk of the 'emotional labour' involved in interacting with clients/patients/customers in a regulated or predefined manner deemed appropriate to that social or professional context, and

the resultant stresses brought about by attempting to conform to these expected behaviours. Aspects of this phenomenon are certainly seen within the medical context and help to highlight the stresses experienced by this study's participants when attempting to conform to professional roles in the operating theatre environment.

Sonnentag's [24] contribution to research on the phenomenon of 'burnout' offers insight into depersonalisation as a coping strategy. This finds relevance in our study by highlighting certain features coming through in our participants' narratives and allowing us to see these in the context of possible coping mechanisms.

A wider search in the literature yielded two interesting studies on the experiences of teachers [25] and working mothers [26]. Both studies highlight circumstances giving rise to discord between professional and personal personae. O'Connor [25] conducted a qualitative, interpretive study on the emotional and professional experiences of secondary school teachers. She found that two key factors influencing teachers' experiences of caring were their "need to sustain positive professional relationships with their students and their individual beliefs about their role as a teacher". Rusch-Drutz [26] examines the disequilibrium between women's working personae and their maternal identity, noting that in many professional spheres, women's work is often regarded as "separate and independent from their role as mothers". These studies shed some light on the dichotomy emerging in our study between participants' professional role as anaesthetists and their personal identities.

- **Research methods used**

The research designs of the seven studies discussed above (of reactions to perioperative deaths) were quantitative in nature, making use of anonymous closed-ended questionnaire surveys distributed via post or email [7-10, 12, 13]. The survey instruments were designed based on the current literature on this topic at the time, and sometimes in conjunction with a psychologist.

Most of the studies elicited responses from various kinds of health care facilities, but from consultants/qualified specialists mainly. Only 2 studies included trainee anaesthetists in various stages of their careers.

McCready and Russell [12] and Todesco et al. [13] made use of a closed ended-questionnaire survey but also included an open section inviting further written comments. The descriptions obtained here, in the respondents' own words, provided interesting, detailed examples of some of the effects being surveyed e.g. emotional sequelae experienced. The confinement of McCready and Russell's study to obstetric deaths, and a sample population only of consultant obstetric anaesthetists, is noted as a limitation to their study.

The questionnaire in the Gazoni [7] study consisted of several types of questions, including single-answer responses, multiple responses, open-ended questions and

three-point scales, allowing responses of greater depth and detail. The terms "perioperative" and "catastrophe", as used in their questionnaire, were not defined however, and were thus left open to interpretation. In addition to patient deaths, respondents also included non-fatal adverse events in their responses.

The ethnographic study by Palmer [22] on the strategies used by paramedics to cope with patient death yielded considerably different data from the abovementioned quantitative studies. Through a prolonged period of fieldwork, Palmer immersed himself in the culture of paramedics on duty, and through multiple data collection methods (participant and direct observation, informal interviews, conversation and inspection of written documentation) provided unique insight into the paramedic culture and possible explanations for the effects seen rather than just a quantification of the effects themselves.

- **Summary**

Having reviewed both anaesthetic and non-anaesthetic literature, several interesting features emerge. A significant number of respondents in the studies referred to above admit to experiencing a range of emotional sequelae as well as professional impairment in the aftermath of a perioperative death. Post-event support was infrequent and inadequate, and time off from work in the aftermath of the event was rare. Both undergraduate medical training and specialist training places little emphasis, if any at

all, on how to cope with such stressors, or how to address the emotional aspects of patient death. Against the backdrop of an already stressful specialty, anaesthetists are particularly vulnerable to the consequences of such adverse events.

While much of the data from the UK-, US- and Canadian-based studies may be extrapolated to our local setting, one needs to bear in mind the differences experienced by South African anaesthetists with regard to available resources, staffing, working conditions, levels of trauma seen, patient load, etc., as compared to our colleagues in these first world settings.

While there is increasing awareness and research into this area, some aspects still remain unclear, and the dynamics of this issue within our South African setting are largely unknown. This study seeks to explore in a more in-depth, qualitative manner, the *reasons behind* many of the reported effects i.e. why anaesthetists experience the impact that they do, how they resolve or cope with these effects, and what impact it has on their professional practice and on them personally.

3

Methodology

3
METHODOLOGY

The body of literature describing the characteristics, complexities and differences between various research paradigms is exhaustive, and admittedly rather intimidating for one, such as myself, with no comprehensive background in research. In an attempt to understand and define the methodological approach I chose to take, I look to Sommerville's listing of the characteristics of four groupings of research paradigms: Positivist, Interpretive, Critical and Postmodern [27]. My research endeavours seem to be best encompassed in the Interpretive paradigm.

* Table (1) **A classification of research paradigms** [27]

	Positivist	**Interpretive**	**Critical**	**Postmodern**
Ontology (nature of reality)	Stable, single external reality that can be apprehended	Internal, subjective, multiple realities	Power dynamics shaped by multiple factors	Local, specific, co-constructed realities
Epistemology (nature of knowledge)	Distanced Objective → truth revealed Reductionist	Engaged Relative, negotiated experiences	Value-mediated findings	Transactional build-up of findings
Methodology (nature of research)	Deductive Experimental hypothesis-testing	Inductive Interactional interpretive qualitative	Dialectical critique Collaboration	Deconstruction Textual & Discourse analysis
Axiology (role of values)	Bias eliminated /minimised	Bias revealed, discussed	Bias negotiated	Bias discussed, deconstructed
Truth	Reality Hypothesis → law	Contextual	Evaluative Structural & historical insight	Local stories Coalescence of consensus
Aim	Explaining Drawing out natural laws Prediction and control	Understanding	Challenging Transformation Restitution Emancipation	Changing perceptions
Researcher's stance	Detached, objective	Empathetic subjective participant	Suspicious political advocate	Facilitator of multi-voiced reconstruction
Types of data	Quantitative	Qualitative	Qualitative	Qualitative

*Incorporating insights from: [28-34]

I understand that the Interpretive approach contrasts with the more traditional Positivist paradigm, in which the researcher initially formulates a hypothesis and then by means of a deductive methodology sets out to collect data either supporting or refuting that hypothesis. Interpretive research instead allows theory to emerge from the data rather than being prescribed. It looks to the participants to make meaning of their own experiences [27]. My study acknowledges the literature which strongly suggests that the perioperative death of a patient is indeed a stressful event for the anaesthetist [1, 3, 5-7, 11, 21]. However I did not hypothesise as to what specific individual or circumstantial factors fuel this stress, how that stress may manifest, or whether it is of any personal, social or professional significance at all. Instead, these are the findings that were expected to emerge from my interaction with the participants in this study.

The stance of the positivist researcher is that of a detached observer, who, through a particular study design, seeks to limit personal influence on, and involvement with, research subjects. Connection to the subject of the research may be construed as bias and hence a limitation of such a study. The interpretive researcher takes a somewhat different stance, interacting with the research subjects, having an awareness of subjective biases, and declaring these at the outset. My bias arises from having my perspective shaped by my own experiences with perioperative deaths and my impression of a lack of support. I did not seek to be a detached observer during this study, but rather to engage personally with the participants. I sought not to allow my

perspective to influence their responses, but rather to allow my familiarity with their occupation to give me greater insight into their experiences.

"Qualitative data describe. They take us, the readers, into the time and place of the observation so that we know what it was like to have been there. They capture and communicate someone else's experience of the world in his or her own words. Qualitative data tell a story." [35]

My role as an interpretive researcher (and one of the key aims of this study) is to facilitate the telling of this story, and to analyse and describe the data that emerge.

Having chosen an Interpretive methodological approach, I then sought to gain an understanding of some of the more common research designs within qualitative research: these included grounded theory, ethnography and phenomenology. The goals of each of these approaches varies. The **phenomenological** approach is concerned with accurately describing "the lived experiences of people, and not to generate theories or models of the phenomenon being studied."[36] Data collection is primarily via in-depth interviews, with an emphasis on communicating the respondents' specific meaning, description, and interpretation of the particular phenomenon being explored. The **ethnographic** approach aims to learn about a culture, (its values, beliefs and practices), directly from the members of that culture. A culture may be defined widely to include a society, a community, an organisation etc. The two key data collection methods during periods of in-depth fieldwork are interviews (providing an insider's perspective) and

participant observation (providing an outsider's perspective)[36]. The **grounded theory** approach aims to explore social-psychological processes. Central to the study design are theoretical sampling and constant comparison during data analysis to "develop a theory that accounts for behavioural variation".[36]

The study design of my qualitative research did not conform strictly to any one of these approaches, but rather encompassed different aspects of the different approaches. Data collection was based only on semi-structured, individual interviews and did not include participant observation. I did not adopt an ethnographic approach as the focus of my study was not in documenting the 'culture' of the anaesthetic registrars. A phenomenological approach was also not appropriate to my study. While I was exploring the phenomenon of a perioperative death, I was interested more in the range of *responses* to this phenomenon, rather than the phenomenon itself. I did not employ a theoretical sampling method key to the grounded theory approach, but rather established my sample group at the onset.

- **Sampling strategy**

Sampling is a key component to research methodology, however the issue of sampling in qualitative research is a complex one. A number of different sampling strategies are described in the literature, along with several classifications, with considerable overlap between the different strategies. Table 2 describes some of the commonly used

strategies, but is by no means a definitive classification. My study design makes use of ***purposive*** sampling, whereby participants are specifically selected to "represent some explicit predefined traits or conditions" [37]. The "predefined condition" in this study was an anaesthetic registrar who had experienced a perioperative death.

Table (2) **Commonly used sampling methods** [38]

Types of sampling	Purpose	Example
Intensity sampling	To provide rich information from a few select cases that manifest the phenomenon intensely but are not extreme cases	Interviewing survivors of date rape to learn about how coerced sex affects women's sexuality
Deviant case sampling	To learn from highly unusual manifestations of the phenomenon in question	Interviewing men who do not beat their wives in a culture where wife abuse is culturally accepted
Stratified purposeful sampling	To illustrate characteristics of particular subgroups of interest; to facilitate comparisons	Interviewing different types of service provider (police, social workers, doctors, clergy) to compare their attitudes toward and treatment of abuse victims
Snowball or **chain sampling** (locate one or two key individuals, and then ask them to name other likely informants)	To facilitate the identification of hard-to-find cases	Finding commercial sex workers to interview about experiences of childhood sexual abuse by getting cases referred through friendship networks
Maximum variation sampling (purposely select a wide range of variation on dimensions of interest)	To document diverse variations; can help to identify common patterns that cut across variations	Researching variations in norms about the acceptability of wife beating by conducting focus groups: young urban women, old urban women, young rural men, old rural men, women who have been abused, women who have not experienced abuse
Convenience sampling (select whoever is easiest, closest, etc.)	To save time, money and effort. Information collected generally has very low credibility	Forming focus groups based on who is available that day at the local community centre, rather than according to clear criteria
Criterion sampling	To investigate in depth a particular "type" of case; identify all sources of variation	Specifically interviewing only abused women who have left their partners within the last year in order to better understand the variety of factors that spur women to leave

- **Study population**

The study population in my study comprised anaesthetic registrars in their fourth year of training in the UKZN Department of Anaesthesia. This group of registrars represents those toward the end of their training, having had significant and varied exposure to perioperative patient deaths over the course of their four years. I hoped that they would be able to reflect back on their experiences over the course of their anaesthetic career thus far, relating also the differences they experienced as junior staff early on in their training as compared to the present.

- **Sample size**

At the time of this study, there were 15 registrars in their fourth year of training in the UKZN Department of Anaesthesia. All were invited to participate in the study. Of this group, three registrars had not had any perioperative deaths and two were not available for interview. Talking to the latter two individuals casually, however, their experiences seemed to have been comparable to the other participants. Of the 10 participants who were included in the study, there was a fair spread of gender, age and years of experience. In contrast to the larger sample sizes needed to achieve statistical significance in quantitative studies, I understand that qualitative approaches are concerned with producing "*a wealth of detailed information about a smaller number of people – thereby furthering our understanding of the case/people but with limited*

generalizability." [35] A sample group of 10 participants was therefore considered appropriate for my study.

- **Inclusion/exclusion criteria**

This study was limited to anaesthetic registrars in their fourth year of study who had experienced at least one perioperative death during the course of their training.

- **Data collection methods and tools**

In describing data collection methods that allow open-ended responses, Patton [35] highlights that the nature of qualitative data is that which reveals the respondent's thoughts, experiences, perceptions and depth of emotion.

For the purpose of my study, face-to-face interviews seemed the most appropriate method of collecting such data, attempting to gain adequate depth of information, allowing participants to express themselves freely, as well as being a more personal and respectful manner of engaging with participants about a potentially sensitive topic. Semi-structured interviews were conducted individually with each member of the sample group. An interview schedule was used, and the topics raised in the interviews were based on a distillation of issues raised by previous studies. The interview was audiotaped for later analysis. A pilot study consisting of two interviews was initially

conducted in order to test the interview schedule. As a result of the pilot study, the questions as initially framed were left intact, but the experience I gained enabled me to improve my interview technique and conduct subsequent interviews with greater confidence, adopt a more conversational manner, and become more aware of the use of leading questions.

- **Data analysis techniques**

The audiotaped interviews were first transcribed verbatim. Participants were asked to review their transcription to verify its accuracy. Initial analysis of the interview content involved categorisation of the data based on themes emerging from the interviews. The data were independently reviewed by my supervisor and similarly categorised based on emerging themes. These categories were then examined for the existence of patterns, core consistencies and meanings [39] that led to a better understanding of the experiences, personal consequences and needs of the participants involved.

- **Limitations of the study**

In discussing possible limitations to the study, I am aware that these may appear under different headings in a qualitative study as compared to a positivist study. When considering the trustworthiness of research, Lincoln and Guba [39] argue that we cannot apply a single set of criteria to a range of different research paradigms, as the inherent characteristics and values of each paradigm differ. They outlined four criteria traditionally used to interrogate positivist research and offered four corresponding criteria deemed more appropriate to naturalistic/interpretive inquiry.

* Table (3) **Aspects of trustworthiness** [27]

Question item	Positivist criterion	Naturalist criterion
Truth value	Internal validity	Credibility
Applicability	External validity	Transferability
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability

* Extracted and combined from Lincoln and Guba [39], pp.290-294

The **credibility** of this study "*depends upon the closeness with which the data reveal actuality*" [27] and is largely determined by how accurately participants related their experiences and opinions during the interviews. Inconsistency associated with retrospective self-reporting of events thus becomes significant here – as time passes, and one relies on memory alone to recall details of specific events, the emotional intensity that one recalls having experienced could become diminished or exaggerated - leading to an over- or under-estimation of reported effects.

In assessing the **transferability** of my findings, I am mindful of the fact that there exists a wide spectrum of personal reactions to stress or trauma, and an equally broad set of personal and external factors that may influence this. This study aimed to explore the nature of that spectrum within our local setting. It does not intend to predict what impact such an adverse event may have on each individual registrar, but rather examines what the common experiences of a group of registrars have been. In doing so, it hopes to create awareness about what *potential* impact may be experienced by other registrars going through our training program.

As an inexperienced interviewer, I expected that my skill in extracting information from participants would differ (and hopefully improve) from the initial to the later interviews. I was mindful of the possibility that should new issues emerge in subsequent interviews, this might prompt further questioning or a different line of enquiry than that explored in interviews with the initial participants. To maintain consistency and the **dependability** of the data, I made use of an interview schedule and made provisions to perform a second round of interviews if needed, to ensure that all participants were given the opportunity to respond to any new questions and ideas that emerged. Further interviews proved unnecessary however.

My role as interviewer raises the issue of **confirmability**. I am currently a registrar in the UKZN Department of Anaesthesia, having had my own experiences with perioperative patient deaths. As the primary interviewer, participant's responses were thus filtered

through my own experiences. However, my familiarity with the participants and the nature of their work should not be seen as a limitation of the study. Rather the empathy and insight added by my shared experience in this field added unique dimensions to how I heard, interpreted and communicated the data. I was nevertheless cautious against influencing the tone of the interview in any particular way and made use of an interview schedule with questions articulated in a neutral manner.

- **Ethical considerations**

Omitting names and identifiable descriptions ensured anonymity of the participants. Similarly, any details of the cases conveyed during the interview that could identify individual patients were also kept anonymous. Confidentiality of the participant was limited as the content of the interviews and direct quotations were reproduced in the research paper. However no quotations were used that could in any way identify the source. Consent to participate in the study as well as for the use of direct quotations was obtained from the participants. Participants derived no direct benefits or incentives, and retained the right to withdraw from the study at any given time.

Approval for the study was obtained from the UKZN Biomedical Research Ethics Committee prior to commencement. (see details of BREC approval on page 2)

4

Findings

4
FINDINGS

PARTICIPANTS' DETAILS

Participants' details are given in Tables 3 and 4. The number of perioperative deaths experienced by participants, either as the primary anaesthetist, as a junior working with a consultant, or assisting during a resuscitation in a colleague's theatre, ranged from 1 to 20. Participants' total time spent in anaesthetic practice ranged from 5 to 14 years. The sample group comprised five males and five females.

Table (4) **Relevant information about interview participants**

Participant	Gender	Age (years)	Years of anaesthetic practice	Number of perioperative deaths recalled
1	M	34	6	3
2	F	33	8	1
3	F	39	8	1
4	F	30	5	2
5	M	34	5 ½	5
6	M	39	6	15-20
7	M	35	7	10-15
8	M	40	14	3
9	F	30	5	2
10	F	33	8	2

The number of deaths that participants could remember was quite varied. Participants 6 and 7, who estimated their involvement in a larger number of perioperative deaths than the others, had worked in particularly busy hospitals which dealt with a high number of severe trauma-related injuries, and to which patients quite often presented late in the course of their disease process.

Table (5) **Breakdown of cases discussed in interviews**

Participant	Number of cases discussed	*Year of practice in which death occurred MO	1st	2nd	3rd	4th		Elective cases	Emergency cases
1	3	1			2				3
2	1	1							1
3	1		1						1
4	2				2				2
5	5	1	2		1	1		1	4
6	2								2
7	6	3		1	2			2	4
8	3		2	1					3
9	2		1			1			2
10	2		1			1		1	1
TOTAL	**27**	**6**	**7**	**2**	**5**	**3**		**4**	**23**

* Year of practice in which death occurred may include any of the years of practice as a Medical Officer (MO), or during one's 1st, 2nd, 3rd or 4th years of registrar time.

During the interviews with participants 6 and 7, only two and six cases, respectively, were discussed out of the number of perioperative deaths they estimated they were involved in. The eight cases they discussed in the interview were the cases they could recall most clearly and which stood out in their minds for various reasons. Participant 6 could not, however, recall out of several deaths when the two we discussed had occurred.

While increasing seniority in anaesthesia seems to incur increased responsibility in terms of complexity of cases handled, it is not obvious from Table 4 that seniority necessarily correlated with an increase in the number of perioperative deaths experienced. If anything, there were fewer deaths with increasing experience. It can be seen in Table 4 that there was a relatively high number of deaths while participants were medical officers prior to joining the registrar programme or during their first year

of registrar time. During these years, these participants may well have been practising in peripheral hospitals, seeing high volumes of trauma-related cases and in situations with minimal oversight.

THEMATIC ANALYSIS

The findings discussed in this section include eleven themes that arose from the interview data. These show a large degree of confirmation with previous studies. In addition my findings seemed to group themselves into three broad areas. These are : 1) the impact of a perioperative death on the participant's **professional role**, 2) aspects of their **relationships** with patients and patients' families, and 3) the **personal impact** of such an event on the participant.

1) PROFESSIONAL ROLE

- **Role of the Anaesthetist**

"I always tell people the reason I became an anaesthetist is to be there for my patient during the most stressful part of their life. People go through stress in their life, but going through theatre is one of the worst experiences you can have, and I want to be there for my patient, to reassure them, to make them feel like, actually, things are OK because I'm here. So it's that issue of trust, of knowing that a life's been put in your hands now and you're responsible for a lot of things that happen…"

To gain a greater understanding of the professional personae of participants, they were asked what they considered their role as an anaesthetist to be. Most saw themselves as advocates and guardians of the patient:

*"…we are the patient's advocates…the onus is on us…to point out to the surgeons what **my** limitations are, what **his** limitations are and what the patient's expectations are."*

Participants described being part of a *"theatre team"* along with the surgeons and nursing staff, yet often having to take the lead role in resuscitations. Several made reference to the anaesthetist's objective overview of events as they occurred in theatre compared to the surgeons who tended to be more task-focused. This consequently placed a responsibility on the anaesthetist to be more alert to developing complications than other members of the theatre team.

*"The key comes to picking up things, that's the art of anaesthesia. Anyone knows when things are **already** going wrong, the alarms are blaring. It's the person who can see when things are **starting to go** wrong and stops things… I think that often we're the person who's in that position..."*

One female participant noted that the ability to maintain respect and authority amongst colleagues, and not be perceived as over-emotional, was a greater struggle for females. Some participants described the pressure they sometimes felt to maintain their composure during high-stress situations, and the expectation placed upon the anaesthetist always to be the one who remains calm and in control, despite internal panic or turmoil.

"It was one of the most exhausting cases that I've ever done because I couldn't let anyone else know that I was very stressed. Because I feel if the anaesthetist loses it in theatre, everyone else goes a little pear-shaped!"

In the event of a perioperative death, I asked participants whether or not they felt they were still able to fulfill their perceived role.

" … I certainly don't think I failed as an anaesthetist because my patient died…I don't beat myself up because of it."

One participant commented that even though the fatal outcome of one of his cases was unexpected, his ability to speak to the patient before the emergency operation, establish some degree of rapport and trust, explain the procedure, and make a reasonable choice of anaesthetic, was sufficient to make him feel that he had still fulfilled his role as the anaesthetist.

Another participant spoke of her frustration over a difference of opinion with the surgical team in the management of a critically injured patient.

"Rationally I knew that it wasn't our fault but emotionally we think we are the advocates for these patients and there's absolutely nobody else fighting for them. So we become very idealistic about it. And the problem is that there's a very fine line between being their advocate and becoming emotionally involved."

This participant described one of her key roles as an anaesthetist as being the patient's advocate. Despite the patient having demised in this case, by voicing her concern to the surgeon numerous times (even though unsuccessfully), she felt she had fulfilled her role by attempting to protect the rights and best interests of the patient.

Participants expressed elements of sadness, guilt and feelings of responsibility about various aspects of the outcomes of their cases. Some did agonise about their anaesthetic techniques and whether this contributed to the death, but my impression from these interviews was not that they felt a sense of personal failure as anaesthetists in the event of these particular perioperative deaths.

"When you lose a patient, hopefully it's not a negligent loss, so you've not betrayed your role. And if it's an inevitable loss, then you are still a guardian, but you've done what needed to be done."

- **Effect of seniority**

"I think you grow a bit with every complication you have in theatre."

Gazoni [6] noted that the earlier in our training a perioperative death is experienced, the more stressful the event is perceived. Participants described that with more seniority comes a greater exposure to high-risk cases, hence a greater likelihood of complications and perioperative deaths. This enabled more realistic expectations of patients' prognoses and in some cases aided in acceptance of poor outcomes.

"You're able to cope a bit better [the more senior you become], you're more used to it, it's happened more often. And you kinda get the idea that 'this happens, it's inevitable; you will have anaesthetic deaths'."

Increased seniority fostered an increase in confidence and ability. However it also placed a greater burden of responsibility on the registrar. While a junior might be limited in skill and insight, a senior is expected to anticipate, recognise and manage complications with greater proficiency.

"Maybe in the first couple of years, if an ASA 1[*] patient died on the table, I might not know any different, depending on my exposure ... I might have brushed that off. Now I know exactly what kind of patients should complicate or what kind of patients shouldn't complicate. I should have that clinical acumen to not be caught off guard. I think that'll bear down a lot on my self-confidence."

One participant shared her opinion on a level of maturity that develops as one grows and gains greater experience in this field:

"We move from a place of thinking that if everything's perfect, if we're perfect, if the situation's perfect, everything will turn out right. If you do it by the book. Then your world kind of expands and you realise that a lot of what we do is adapting to our situation and thinking on our feet. And often times you can't predict what will unfold. You make the best decision with what you have - and then the situation has to unfold. … So it's become a lot more textured as I've gotten more experience."

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[*] ASA 1 refers to a normal healthy patient according to the American Society of Anaesthesiology preoperative physical status classification.

- **Time off after a perioperative death**

"Medics have this pressure on themselves to get through the work. So if you've got an emergency Caesar to follow and you're the only theatre running, no matter how bad I feel, I would never delay a case because I'm feeling upset or whatever."

With time and experience, anaesthetists inevitably grow into their role, but a perioperative death during any stage in their career still poses considerable challenges. I sought to understand how participants coped in the immediate aftermath of a death.

In the cases described, none of the participants were relieved of their duty or given a period of time off. Some were fortunate not to have any further cases booked, and so, even though still on-site, were not required to administer any further anaesthetics. However, for many participants the following case was delayed only long enough to clear the theatre, complete documentation, and transfer the body of the deceased patient to the mortuary.

"You don't have much time to stop, to take in everything, except to write your documentation as quickly as possible and move on with the next case."

Some participants felt they would have benefited from a period of time away from anaesthesia in order to extract themselves from the situation temporarily, to rest, to allow the stress of the situation to dissipate, to process the events, and if possible to debrief.

"It was traumatising because you've still got this at the back of your mind, you're still trying to work things out, you're still reeling from the final decision there and yet you've got to continue working and put your mind to the next case…so it is emotionally draining and taxing."

They expressed concern about possibly putting themselves or subsequent patients at risk if they continued working without addressing any acute emotional or psychological distress – the so-called *second and third victims* in a perioperative catastrophe as described by Martin and Roy [20] .

"My personal feeling is that if you have a death on the table of any kind, you should actually stop, and not go back. Your shift should stop there and someone should take over, because the repercussions only start to show up later on…when you're starting your next patient…you become hyper-vigilant, or you start second-guessing yourself, or you start wondering if there's more you could have done."

Conflicting with this concern however, was a pressure or sense of obligation felt by participants to continue working, sometimes self-induced and sometimes placed on them by surgeons.

"We were alone, I think it was a night call, so there was no other back-up. There's obviously a consultant on call for you to call and tell what's going on… They would tell you to stop theatre, take the time you need. But when you've got a board full of patients, you can't really take ***all*** *the time you need! So you have to just move on and keep going, and then process everything the following day. Which is probably the wrong thing to do."*

Other participants considered time off after the event unnecessary, even counter-productive in some instances. Their personal coping mechanism relied on diverting their attention, keeping busy, and allowing little time to *"ruminate"* on the events that had just occurred.

"I think you just want to keep working to take your mind off things. It's just how you handle stress."

"I don't know if you can sit and lament on it too long … I suppose moving on and keeping focus on something else maybe is helpful."

- **Functioning in theatre after a perioperative death**

Regardless of their reasons for retuning to duty shortly after a death on the table (personal choice, pressure from the surgeons, no one else to take over the following cases), participants' subjective sense of the impact of this event on their professional practice varied.

One participant reported a notable difference in his mood during subsequent cases:

"I don't really remember struggling to be able to get my mind set to tackle the next case. I never felt like `I'm breaking down, I can't continue'. But I definitely would say that the cases that followed, I would be far more irritable with the nursing staff, the next patient, less forgiving of the surgeons' bad work-up for cases that would follow."

None of the participants felt that such an experience would impair their subsequent judgment or ability to deliver a safe anaesthetic.

"I would have functioned, it's part of our life as an anaesthetist. People live, people die. People live miraculously, people die unexpectedly. So it wouldn't have jeopardised my functioning."

However, although all participants agreed that they were able to *function*, many expressed doubt about the *effectiveness* of that level of functioning.

One participant commented that this ability to keep functioning in the face of recent adversity was a learned process, a coping mechanism that she has had to develop in response to the stressors of her career, and was not without its consequences.

"…you stop feeling, you become very mechanical at that point. And you just have to push on. So my ability to cope is to be able to do that. And I can completely cut off the emotional aspect and carry on. But later on it will catch up."

Some participants described further effects on their professional functioning in the days following the perioperative death. These included high levels of anxiety and inappropriate hyper-vigilance during subsequent cases, a reluctance to perform similar anaesthetic techniques, and self-doubt, even in completely dissimilar cases.

"I was on call the next day…and I definitely felt a very high level of anxiety. …[I had] a baby for a laparotomy…and even though with a Paeds case… there is a certain level of hyper-vigilance, for that case it was completely out of proportion. It wasn't something that I manifested outwardly, but inside, I was very unhappy. I felt I had a tachycardia, I was sweating. It was inappropriate, because I'm comfortable with Paeds and it's something that I do regularly. But for that case, the level of stress and the level of anxiety -- I double-checked, triple-checked the machine, the equipment, I was watching the surgeon like a hawk…it was excessive… I think it was spillover from the night before, and it was actually something that persisted for a few days."

In describing their perceived professional role, patient advocacy and an expectation of vigilance and composure in theater were common aspects expressed by participants. These responsibilities and expectations were felt to increase with increasing seniority. Opinions on the need for time out of theatre immediately after a perioperative death varied. All participants expressed that they felt able to continue functioning in theatre after a death, although, as noted, their functioning was not always qualitatively the same as usual.

2) RELATIONSHIPS

Having talked to participants about ways in which their professional capacity was influenced by a perioperative death, I then explored how their interactions with other individuals involved in the event influenced their experience.

- **Interaction with patients - rationalising trauma-related deaths**

"Some patients are just non-starters".

"It was a stab heart so we knew that we were fighting a losing battle from the start, so that was easier for us to cope with."

The majority of the cases described were trauma-induced (e.g. penetrating or blunt injury to chest/abdomen). Many of the participants reported that trauma cases had minimal emotional impact on them and that in general these deaths were easier to accept. They noted that injury severity and critical condition on arrival indicated a poor prognosis. Often the surgery was a salvage attempt at best.

Interaction with the patient prior to induction was minimal, and in many cases the patients were brought in unconscious and intubated. Most felt a sense of reassurance from knowing that ultimately there was not anything more they could have done.

"I feel I tried the best that I could with the knowledge and skills that I had. What's clear in my mind is that with that kind of injury, I don't think anyone who would have been more skilled with an anaesthetic could have prevented that death. That's why it hasn't

affected me. I don't think the anaesthetic was the limiting factor for this patient improving, it was the injury."

An interesting response from another participant was a tendency to *blame* trauma patients. He described how in many instances, the patient's behaviour (alcohol-related pedestrian/motor vehicle accidents, alcohol-related assault etc.) played a major role in them acquiring a life-threatening injury. *"They did this to themselves."* By placing the responsibility for the injury in those instances on the patients themselves, he was able to distance himself from the mechanism of injury, be relieved of an element of responsibility for this life, and hence perhaps felt that less empathy was demanded of him.

One participant's narrative of a trauma case with a similar profile was considerably different however. The patient, a young male, had a severe liver laceration from an abdominal stab wound. Despite aggressive anaesthetic and surgical resuscitation, the injury was deemed beyond repair. After closure of the abdomen the patient continued to bleed and a joint decision was taken by all members of the team to withhold further intervention. My participant ceased inotropic support, intravenous fluids and transfusion but elected to continue ventilation, and kept the patient in theatre until spontaneous cardiac arrest. By all accounts, one would expect a similar process of rationalisation, reflection, and acceptance of the loss. Yet this proved to be one of the most traumatising cases she experienced.

"The case itself was very much like any other case that we did, but it was the first time that I had to sit and wait for a patient to die. And that was exceptionally difficult."

She describes having felt an enormous sense of guilt and personal responsibility. Even though the decision to cease therapy was made jointly by her seniors, she was the one who made the assessment of futility and initiated the discussion that ensued.

*"The entire 45 minutes that it took him [to die], which is a **very long** time for someone that **I** have said is not going to live - that entire 45minutes, I questioned myself."*

She described the difficulty in having to physically carry out this decision to the end, and in having to do it alone:

*"the fact that I initiated the decision **and acted** out the decision...The surgeon went to casualty, the nurses went to the tearoom, the intensivist was at home, so it was just me alone in theatre with the patient."*

This participant experienced subsequent feelings of isolation, self-doubt, symptoms of an acute stress response (persistent obtrusive thoughts, upsetting dreams, personality changes) as well as a severe impact on her professional functioning in theatre over the next few days. This illustrated to what an extent individual circumstances around the case differentiated it from other trauma-related deaths.

It further highlights an interesting tension between what we know rationally as clinicians, and what we may experience emotionally as individuals. Though clinically and ethically her assessment of the patient's prognosis and the decision taken by the theatre team was a reasonable one, her response on another level was entirely emotional, which, in turn, made her doubt the rationality of the earlier decision.

- **Elective vs. emergency patients**

A theme that arose frequently was fear and uncertainty about how one would react to the death of an elective or low-risk emergency patient. All participants described an expectation that such a loss would likely cause significantly more emotional trauma, and impact on their professional ability, requiring considerably more time off to process the event before feeling able to return to work.

"I can tell you for sure, these trauma patients didn't affect me one bit. I mean I didn't feel I could have done anything different… but for an ASA 1 or 2 patient …that comes for an elective procedure, and something goes wrong…where you didn't anticipate the death, I know it would affect me…I can see myself finding that harder to ... come to grips with."

As an anaesthetist myself, this fear of losing an elective or low-risk patient on table seemed an unsurprising, intuitive response - so much so that it did not occur to me to question participants further on *why* they felt this, or why this patient group seemed to fall into a different category. Possible reasons that emerged in other areas of the

interviews include the perception that a death of an elective or a low-risk emergency patient reflects on one's anaesthetic skill and competence, the perception that elective patients should have been adequately worked-up and prepared, and that complications should have been anticipated and prevented.

Another element differentiating elective from emergency patients is the amount and nature of interaction with the patient. Elective patients were more likely to have been seen by the anaesthetist during the preoperative visit and engaged in discussion about the procedure, questions or concerns. Participants described how this interaction, brief as it may be, creates a *"relationship of trust"* and positive expectation, resulting in greater personal impact on the anaesthetist in the event of the patient demising. This contrasts with a severely ill or injured patient coming for an emergency procedure, with whom the pre-induction interaction, if any at all, is decidedly brief and less personal.

"He was an `unknown', he was just found on the roadside. We didn't know his identity."

One participant's narrative illustrated this in particular; he took over as the junior registrar in an elective cardiac case from a colleague halfway through the procedure. Complications arose and the patient subsequently died on table. Although an elective case, the participant noted that his lack of prior interaction with the patient meant the death had little personal impact on him.

"I didn't start the case. I didn't premed him. I didn't see him pre-op, and ... I didn't know much about him."

Another dynamic expressed by two of the participants regarding their last interaction with a critically ill patient prior to induction, was that while conversing with their patients, they were mindful of the likelihood that the patient might die during the course of the procedure, or be transferred to ICU postoperatively, ventilated, with minimal chance of recovery.

"We are the last people that they see before they get anaesthetised -- and if they don't make it to ICU or they don't wake -- it's -- I don't know, that was a weird feeling for me…I try not to give that impression that they're not gonna make it. I make it a point to tell them that everything's going to be OK, even though I think that it might not go that way. I don't know if it's a feeling of guilt -- or misleading the patient -- but -- I guess in that situation you'd want an encouraging word or a reassurance that things will go OK -- I don't know …"

The weight of that interaction, the tact and sensitivity required, knowing how to console or reassure their patient in that final moment, all the while knowing the likely prognosis, proved difficult indeed.

- **Interaction with family**

"I never feel comfortable giving bad news to people -- I don't know if it's something that you ever get 'comfortable' with -- you get better at it, it get's easier, but it's always `uncomfortable'."

White and Akerele were discouraged to find that less than half the anaesthetists in their survey thought it appropriate to speak to patients' families after a perioperative death [11]. Respondents' reasons for this were not noted. Narratives from our study revealed that patients were frequently brought to hospital by ambulance, or transferred in from outlying hospitals unaccompanied by relatives. On occasions when family members were present, it was most often the surgeons who communicated the news to them. Participants acknowledged the importance of this task, and the sensitivity and honesty it required, yet all found it considerably difficult, and most expressed a reluctance to engage in the process.

*"The…difficulty is dealing with the family -- I find it very hard -- not **speaking** to them, but emotionally dealing with their pain."*

Being unable to offer an explanation to relatives in cases where the cause of death was not obvious added to this difficulty.

"I would have been in a situation where I don't know how to explain to them that this patient died … you don't have answers for the family -- you have possibilities, but you don't have definitive answers."

Dealing with families who had unrealistic expectations or false hope, and having to manage emotional outbursts and grief, were also cited as reasons for avoiding family interaction.

"I avoid it. Because they start crying, it's too emotional for me! That's why I do anaesthetics!"

As in interacting with the patients themselves, speaking with the family added a personal, emotional dimension to the tragedy, which some participants did not feel able or equipped to handle.

"I think that if I was exposed to the family at that point, I might have broken down. Having to deal with the family makes this person more human. And then all the emotional aspects come in."

In this section, participants described that the nature of the case - elective, emergency, trauma-related - had significant bearing on the impact following a patient's death. Interaction with patient's family before or after the death contributed to the emotional impact experienced.

3) PERSONAL IMPACT

- **Guilt, personal responsibility**

"You do feel a sense of responsibility for that life even though it's in your hands for such a short period of time."

Feelings of guilt and personal responsibility were expressed by many of the participants in many different contexts. One participant described his experience after a patient suffered a cardiac arrest following an anaesthetic for an emergency Caesarian section:

"I think the biggest question in my mind was whether it was the right choice of anaesthetic. ***That*** *for a long time still worried me, up until now it still worries me."*

In some instances the pathology or injury itself was irrelevant to participants' responses; the mere act of intervening by means of an anaesthetic, placed a burden of responsibility upon the anaesthetist.

"The initial cause of her presentation was not my fault of course, but me inducing her and giving her an anaesthetic and her dying on the table, was something that ***I*** *did, because if* ***I*** *didn't intervene in that way, maybe she would have died later on, but not that night."*

In instances where the cause of death had not been established, the inability to gain closure made acceptance of the loss significantly more difficult. For one participant,

despite considering his actions as non-contributory to the death in this case, and despite feeling content that he had done everything within his ability during the resuscitation, he still described an experience of never fully being able to make peace with the loss.

*"The family were understanding -- they accepted it ... but **I** didn't accept it… Because even up to this point, I can't say what went wrong."*

One participant described the dynamic of the relationship we experience with our patients and the subsequent burden of guilt, uniquely:

"I think doctors are in a very unusual situation – we're not personally related to our patients but we are so intimate with them. It's strange. It's such a strange relationship to be that deeply involved with someone's life when you're not related to them or not even friends with them. And we take this emotional burden of what's happened to this person, and we actually have no connection – not an 'obligation' – but no connection to them, so it's very very strange to be that deeply moved for someone who you're not close to."

- **Physical impact**

While the literature has drawn greater attention to the emotional impact of perioperative deaths on the anaesthetist, few authors mention the physical strain of these cases. The majority of the trauma-related emergencies described by my participants were cases done on call, at night or in the early hours of the morning.

There had often been several other emergencies preceding the case in question. The anaesthetist was usually working alone in theatre. Several of these cases were long, and required intensive resuscitation involving the placement of invasive lines, rapid fluid administration, transfusion, correction of metabolic derangements - all of these processes requiring the anaesthetist to be constantly on his/her feet, being hyper-vigilant, amidst an acutely stressful environment. One participant described how this physical exhaustion had a greater impact on her than the emotional content of the case; a phenomenon that most anaesthetists can identify with.

"You're tired, you're having to deal with this trauma coming in, and you have to keep on your feet -- that was more of a stressful thing, of trying to keep up, and keep on top of things."

"After that case, I was exhausted, I fell asleep immediately cos I was so tired -- because I think my catecholamines were at a complete high."

- **Support for the anaesthetist**

"I've, in my 7 years, had one debriefing session for a trauma case."

Formal post-event debriefings with a consultant were rare in the cases related by the participants. Only two participants (in a single case) described having had such a process. Informal discussions with the relevant consultant on call at the time of the death were occasionally undertaken, but as described by the participants, these

discussions were more clinical in nature, aimed primarily at establishing the facts of the case, rather than addressing the participants' personal concerns, anxieties or emotions. Very often, no debriefing of any kind, formal or informal, was offered at all.

"No management input, no consultant input, no departmental input. You just did the next case."

Few cases were discussed in a morbidity and mortality meeting. Opinions on the usefulness of the M&M forum varied. All participants felt strongly that there should be a definite learning element derived from such adverse events, but their personal experience of M&M meetings had not consistently been that of a supportive, non-judgmental process in which learning and positive feedback was generated.

Most participants expressed a desire for some kind of debriefing process with their senior or a trusted member of the department, and expected that the process would have helped to alleviate emotional and psychological effects.

"*I think [having a debriefing] would have made a huge difference, because I think I was questioning myself and no one in that circle who could understand the scenario was there to speak to me on that level.* "

Those who had had this opportunity, even if only an administrative debriefing, found this helpful. Participants were able to seek clarity on events, the role their actions/interventions may have played in the death, and to enquire about alternative

techniques/choices they could have made. It served to allay their concerns, alleviate feelings of guilt and personal responsibility, and provide reassurance and positive feedback about their conduct of the anaesthetic and decision-making.

"I think the most important thing is the learning experience you can take from this, as long as you can learn from things, that makes it a lot easier to deal with."

In the absence of a consultant-driven debriefing process, most participants sought support from their colleagues and friends, engaging with them in informal peer review. Although participants sought support from a variety of different colleagues, it was often from their anaesthetic peers that they felt they received the most empathy. They discussed the events that occurred, expressed frustration or concerns, and sought advice and opinions on how colleagues' practices might have differed. As one participant expressed:

"You'd get your compassion, and relating to people through chatting to your friends about similar experiences. I think that's part of debriefing."

Interestingly, even in cases in which participants subjectively expressed not having suffered any particular sequelae, when asked whether the adverse event was revisited in any way in the days that followed, almost all reported that they had in fact discussed the case with a friend or colleague. This may not necessarily have been done as a conscious debriefing, but as a somewhat cathartic process.

"I suppose you don't even realise that you're doing, or why you're doing it… so I don't know if it's about the death itself or the factors irritating you, or things surrounding the death."

"That's why medics talk medic so much, I think. It's to cope with everything that goes on. Not just deaths - frustrations of the system, mismanagement and all that stuff"

- **Desensitisation**

"I think death should still move us because what is the point of trying to help people if we're not moved by the fact that they're going to die?"

Participants were asked whether or not they felt they had become desensitised to death, the more they had seen. Their responses were varied, along with their interpretation of what desensitisation meant to them. Some commented on being less affected by trauma-related deaths compared to deaths of elective patients. Some equated desensitisation to an easier or quicker acceptance of a death. Others described it as the ability not to become *"emotionally involved",* to generally *"deal with it better"*, or to *"rationalise it better"*. Some saw it as a coping mechanism and a *"defensive quality".* One participant described it as being able to *"de-emotionalise"* the event in the acute period in order to focus on the emergency at hand.

Two participants reflected upon how this phenomenon of desensitisation impacted not just on their professional lives, but their personal lives as well:

*"I see it as a **sad** thing ... I think you can't avoid it, I don't want to crumble with every sad case, but at the same time, you know that it's taken away from - like if I see a friend injured, I wonder if I'm going to feel anything. Or if I see a family member die, I wonder what you'll feel."*

By contrast, the second participant revealed:

"For me, on a personal level, I realised that I'm still an emotional person. Which is a good thing. Cos for a while I thought that I was completely desensitised from everything and everyone. And the fact that I felt for this patient made me feel - even though I took it to an extreme - made me feel human."

While some regarded a lack of emotion in the face of such an event a functional mechanism, a participant suggested that it led to detrimental imbalance.

"Our idea of desensitisation, as doctors, without being aware of our emotional aspects, is that we feel nothing. And that's our whole idea of desensitisation. We forget that you can actually be sympathetic without being empathetic, and we don't know how to make out the difference. So it's an all or nothing phenomenon with us."

She went on to offer a distinction between being *"dissociated"* - being present in the experience, but maintaining a sense of rationale and perspective; and being *"disconnected"* - being unable to relate to or process the incident on a personal or emotional level.

Throughout the interviews, participants seemed to express that in an effort to exercise the expected level of professional competence, and to care for their patients to the best of their ability, they inevitably compromised something of themselves; personally, physically, or emotionally. Their efforts to achieve something akin to this state of *dissociation* at times saw them oscillating between extremes on either end - extreme emotional vulnerability or a lack of emotional responsiveness.

In terms of the personal impact experienced after a perioperative death, participants described a sense of personal responsibility for the outcome of the case and also spoke of the physical exhaustion created by such high-stress events. They described a lack of post-event debriefings and other sources from which support was received, namely colleagues and friends. Varying perceptions of the phenomenon of desensitization were described.

5

Discussion

5

DISCUSSION

Anaesthetic training, as described by Aitkenhead [5], "centres on prevention, diagnosis and treatment of potentially dangerous events". However when such an event does occur, our current anaesthetic training does not necessarily prepare us to deal with the potential impact it may have on us personally or the consequences it may create in our personal and professional lives.

"...we got into medicine because we value life and because we want to save people … what do you do when you can't save that life? How do you deal with the emotions?"

Compared to our colleagues in other areas of clinical medicine, the relationship between the anaesthetist and patient is unique. This interaction usually involves a single preoperative visit. Depending on the nature of the surgery, the personalities of both parties, language barriers and cultural differences, this already brief contact may be even less interactive than those of our colleagues in other clinical disciplines. Even if the rapport developed in that short time is significant and meaningful, it is still only a single encounter. Yet the trust placed in the anaesthetist and the reciprocal responsibility taken for the life entrusted is profound. Consequently, this can contribute significantly to anaesthetists' feelings of guilt and personal responsibility in the event of a perioperative death.

In this chapter the discussion will be presented according to key themes, largely where new insights were achieved, namely: **professional role, trauma, time off after a death, support and briefing, desensitisation**, and then the two key tensions which were revealed by the study: **guilt vs. failure**, and **professional role vs. personal identity**.

- **Professional role**

Scott et al [21] write of a sense of pressure internally (from the person involved) and externally (from colleagues, seniors) "to move on and put the event behind them". When talking about their professional role, my participants seemed to describe a similar culture of expectation that an anaesthetist be able to recover after such a perioperative death, continue working under conditions of high stress and urgency, maintain their composure, and provide an efficient ongoing service. It is this expectation that often pushes anaesthetists to return to their operating theatres (immediately or in the days to follow) to continue working, despite possible fatigue, emotional strain, doubt and insecurity, in the aftermath of considerably distressing experiences.

Similarly, Ashforth & Humphrey [23], talking about the 'emotional labor' involved in interacting with clients/patients/customers in a variety of contexts, describe the pressures involved in adopting certain behaviours or sustaining certain roles, (such as the role described above i.e. the calm, collected anaesthetist even in the face of adversity) and the resultant stresses this imposed.

In a booklet published by the Association of Anaesthetists of Great Britain and Ireland entitled "Stress in Anaesthetists" [16] , the authors note:

"*Medicine has the ability to foster the development of ideas and beliefs which are not always rational. One is that doctors should be capable of anything and everything which is demanded of them. Objectively this is easily refutable but much less so in the heat of the moment or when refusal could be implied to mean inadequacy."* [16]

All the interview participants in this study expressed that they felt able to function in theatre immediately after a perioperative death, if required to do so. However, what the narratives from this study reveal is that an individual's *ability to function* did not always equate to a *state of well-being.*

- **Trauma**

It is worth noting that registrars in this anaesthetic programme are exposed to the highest volume of trauma in their first year of training. As juniors, in skill and years of practice, they spend various rotations at peripheral hospitals during this year, working alone on call, with minimal consultant presence after hours. As a means of helping them cope professionally and personally with this high volume of trauma they see early in their careers, participants describe putting these patients into a *"box"*, a separate category in their minds that they can more easily rationalise, and from which they can maintain an emotional detachment.

"I'm kinda desensitised to the trauma we see. I kinda brush those cases off because of the amount of trauma I was exposed to in my 1st and 2nd year. For me, in my mind, I've already put trauma into a box, that the patient has been injured in a certain way. It's damage been done. It's either too much that's not compatible with life, irrespective of the surgery or the anaesthetic; they won't make it; or they're borderline and you can try and help them."

This process of rationalisation, especially with regard to the severity of injury and the prognosis of the patient, is similarly described by Palmer [22] in his study on paramedics' responses to patient death.

Another strategy described by Palmer [22] whereby the practitioner distances him/herself from the personal circumstances of the patient is that of 'language alteration'. This was evident in the narratives of all the participants, whereby most patients were identified not by name or personal descriptive details, but by the clinical details of the case: *"the stab heart", "the cardiac patient", "the MVA"*. As doctors, our use of medical language and terminology is a tradition of medical practice. It is crucial in our communication with colleagues as it conveys precise information. However, as evident in our narratives, it also results in depersonalisation, allowing one to maintain a sense of distance from their patient.

- **Time off after a death**

Opinions varied on the necessity for time off after a perioperative death as well as the amount of time considered appropriate. However all participants agreed that provision for a period of time off should be in place, and needed to be individualised. Those who would have elected to stop working after a perioperative death conceded that this might not always be feasible in light of staff shortages, pending emergency cases and resource constraints. The findings in our study were confirmed in the literature as being a reflection of many other respondents' experiences [7, 21]. Based on the persistence of the adverse effects experienced, and the lack of awareness of those effects, an anaesthetist who continues or returns to duty cannot always be assumed to have adequately recovered from the event.

While Scott et al. [21] concluded that *second victims* experience a largely predictable "post-event trajectory" consisting of six stages: (1) chaos and accident response, (2) intrusive reflections, (3) restoring personal integrity, (4) enduring the inquisition, (5) obtaining emotional first aid and (6) moving on, the experiences of the participants in this study were not as consistent as Scott's model. Granted, the questioning in my interview was not targeted specifically at eliciting a history of these features, but based on the general discussion during our interviews, those participants who could be considered *second victims* in particular cases did not all display features of all six stages. Stages one and two were experienced to varying degrees. Participants did not commonly describe stages three and four, while stages five and six featured more

prominently. While Scott et al. [21] present an interesting model to describe an individual's experience in the aftermath of a perioperative catastrophe, one needs to be cautious when generalising such an experience, bearing in mind that there are a multitude of factors that may influence an individual's response.

- **Support and debriefing**

Consistent with the findings of most other surveys on this topic [6-8, 12, 13], post-event debriefings, though believed to be a beneficial experience, were a rare event for participants in this study and were generally considered to be inadequate. In the absence of consultant debriefing, some participants' feelings of guilt and self-doubt were notably heightened and longer lasting. Most expressed regret about the loss of an opportunity to learn from the case and better equip themselves for future practice.

Participants derived significant support from informal discussion with colleagues about adverse incidents. This, they commented, was their own means of debriefing. The value of this interaction should not be underestimated. It demonstrates a powerful sense of community amongst colleagues, and an effective support network, especially in the absence of perceived support from seniors. It illustrates that registrars are often in the best position to recognise distress or dysfunction in their colleagues, and begs that they assume a greater responsibility to respond to this.

It was my impression that some participants had a perception about what a stress response should be: feeling emotional, tearful, unable to continue working, feelings of guilt. Since many of them did not experience nor manifest this, they considered the *personal* impact of these experiences to be fairly minimal, even negligible. I argue that the particular detail (patient age, nature of injury, sequence of events, resuscitative measures taken, conversations that followed) with which these participants could relate these events, some several years later, was in fact an indication of the significance of the impact they had, in that they made lasting impressions on the participants.

- **Desensitisation**

When asked about their experiences with desensitisation, I did not give participants a particular definition for the term. I was curious to see how they interpret this phenomenon and whether they attach a negative or positive connotation to it. Participants' attitudes regarding desensitisation expressed the phenomenon on a spectrum.

On the one hand, some participants expressed that being desensitised to patient deaths enabled a more proficient level of professional functioning and enabled them to accept the outcome with greater ease. To these participants, desensitisation represented a healthy coping mechanism, allowing them to be more resilient. (I use the term 'resilience' here in its mechanical context, whereby the subject is able to absorb a force,

rebound from this and release this energy upon unloading, and return to its original shape or form without suffering permanent distortion.)

On the other end of the spectrum, some participants described desensitisation as a state of detachment, whereby they become *"callous"* and *"feel nothing"*. They expressed that becoming limited in their emotional responsiveness in this way was almost inevitable in their line of work, and was a defensive quality, perhaps protecting them, amongst other things, from being affected by sadness or violence surrounding a case. There was, however, a sense amongst some participants, as expressed in their narratives, that although used as a protective coping mechanism, desensitisation in this context was a maladaptive response.

The individual's place on this spectrum of desensitisation was not necessarily fixed. Although there might be a general tendency to respond to a traumatic event in a particular way, certain circumstances such as the nature of the case, professional experience or personal life experience might move the individual in either direction along this spectrum.

Though the concept of 'burnout' was not specifically introduced or raised by participants, Sonnentag[24] proposes that it is almost inevitably associated with the caring professions (not solely in relation to traumatic events, but may vary depending on the nature of the individual profession). She argues that depersonalisation, as a

"coping strategy", is a key feature of burnout and that cynicism or disengagement, as expressed by several participants, are aspects of depersonalisation.

- **Guilt vs. failure**

In startling contrast to the oft-expressed feeling of failure when a doctor's patient dies [18, 19, 21], our participants did not speak in those terms. Instead, a distinction noted in the narratives was that between feelings of *guilt* and feelings of *failure.* In these participants' experiences, *failure* seemed to have a sense of passivity – *not* doing something; whereas *guilt* was provoked by their active involvement and decision-making. Participants described their role as anaesthetists as being guardians for the patient and providing the best possible care with their level of skill and knowledge. They did not expect to guarantee a positive outcome in all cases. Their measure of success or failure with respect to their professional role did not hinge on the survival or death of the patient; it depended on them actively intervening and doing what they could to resuscitate and stabilise the patient, regardless of the outcome. Most participants described feeling content that they had tried their best and done everything they could during the attempted resuscitations in these cases – hence they felt they had fulfilled their perceived role as anaesthetists.

However, though they may not have expressed feelings of *failure* with respect to their professional capacity, expressions of *guilt* certainly did emerge. These feelings of guilt

were related to aspects such as choices of anaesthetic technique, interventions performed and decisions to withhold therapy. Participants admitted that these feelings of guilt were self-imposed (i.e. not provoked by interactions with patients' relatives or reprimand from seniors) and were not necessarily rational; yet they weighed on them heavily nevertheless.

- **Professional role vs. personal identity**

During the course of these interviews, an interesting dichotomy emerged between participants' professional role and their personal identity. Who are we as anaesthetists? Who are we as individuals practising anaesthesia? Is there a difference? How do we as the individual and as the professional make meaning of a perioperative death?

O'Connor [25] defines these two personae: "*Whilst the concept of **role** refers to the socially and culturally determined nature and commonly held expectations of an individual's professional self, the idea of **identity** refers to the means by which individuals reflexively and emotionally negotiate their own subjectivity. Emotions inform and define identity in the process of becoming."*

I have talked about the professional role assumed by participants, and how they see themselves being able to function. We have seen how they relate to other individuals involved: the patient, their families and colleagues. And we have seen how the participants themselves reacted; the emotions manifested, the support they sought, the

desensitisation they experienced. A phenomenon that seemed to permeate each of these areas was a difficulty experienced by participants in balancing or integrating their perceived *professional role* and their *personal identities*.

This dynamic has been described in other contexts, primarily where one has a role with a duty to care: teachers, nurses, parents [25, 26]. Discord arises between a perceived professional role on the one hand that equates distance and detachment to professionalism; and on the other hand, the intuitive drive to care, nurture, and respond to the individuals placed in one's care from an emotional stance that seeks to make human connections.

An individual's personal set of beliefs and values define who they are, and should, in effect, influence how they practice professionally. However, based on the narratives in this study, it appeared to me that if participants' personal identities impacted on their own vulnerability (and their perceptions thereof) or on their colleagues' perceptions of their competence and professionalism, then with time, the participants consciously or unconsciously separated their personal and professional personae. This separation appeared as a means of protecting themselves, of concealing their vulnerability, and of coping in their profession. Hence, while they seemed composed, collected and relatively unaffected by the adverse event, I propose that it is very likely that these individuals have suffered emotional trauma in the past, causing this detachment and disconnection as part of their coping strategy.

In this study, we see that the response of some participants was primarily personal, shaped by their emotions, their personal life experiences, and their personal attitudes. In certain instances, this emotional response was overwhelming and had a significant impact on their professional capacity. Other participants employed a professional stance that distanced them significantly from the event; and purposefully avoided personal human connection, be it with the patients' families or the patients themselves. In these individuals there appeared to be a complete disjunction between their professional role and their emotional responsiveness.

This *disjunction* was articulated by one of the participants as a feeling of *"disconnectedness"* – carrying out their professional duties but being personally and emotionally detached. She described that the balanced, integrated ability she ideally sought to achieve was that of being *"dissociated"* in situations of extreme stress or trauma; i.e. professionally functional but still emotionally responsive and attuned to her personal beliefs and values.

The narratives in this study allude to various factors that potentially influence this tension between one's professional role and personal identity: years of practice, exposure to traumatic cases, the experience of tragedy in one's personal life, the ethos of one's medical training, the perception of professionalism in one's working environment.

A critical event such as a death on table highlights the discord between these two personae: the anaesthetist's professional role and their personal identity. It reveals the strengths and vulnerabilities in both professional and personal aspects of their lives, and reveals most glaringly where there is disjunction between the two.

While my interpretation of participants' various responses to perioperative deaths suggests that, in most cases, these events had significant personal and professional impact, it is important to note that not all perioperative deaths are necessarily emotionally or psychologically traumatising for the anaesthetist. Nor am I suggesting that there is any one particular *appropriate* response to such an adverse event. I have discussed what I interpret as a tendency toward emotional detachment amongst participants (as a coping strategy). However I recognise that it is equally possible for one to respond to the event with an easy acceptance, feeling perfectly able to continue working thereafter, to decline time off after the event, to not require specialist counseling, etc., without being labeled as a callous individual who in reality is unaware of, and detached from his emotions.

Furthermore, participants spoke of their responses and the phenomenon of desensitisation in both positive and negative terms. There was no consensus on what was an appropriate response or a maladaptive response. Having identified this spectrum of attitudes, and spoken of participants' ability to be emotionally responsive on the one hand or detached on the other, the question needs to be raised: how important, from

an emotional point of view, is it to be able to respond to such catastrophes? What are the repercussions of either response, i.e. being *disconnected* or *dissociated*, on one's personal and professional life? With no background in psychology, this is an area far beyond my scope of practice, and beyond the scope of this paper, but it certainly is an issue worthy of further exploration.

6

Conclusion

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CONCLUSION

Previous questionnaire studies spanned a range of countries, types of health care facilities, working conditions, departmental structures, and ages and years of experience of the respondents. Yet the commonality in the statistics they report is considerable. The correspondence of my findings with these data is predictable in some areas, yet the depth of insight I gained about a range of phenomena has certainly added to my own understanding of this field.

The theoretical standpoint of the interpretative paradigm allowed the data to form themselves into categories, some of which had not been seen in previous studies. From a methodological standpoint, I believe that the data collection method – i.e. one on one, face-to-face interviews – allowed the participants to tell their stories, and to be heard in a sensitive, non-judgmental manner. It gave participants (many of whom had not had previously spoken of the events in any kind of formal or informal debriefing) a forum to describe their experiences, to voice their emotions and to express their opinions on the events that had occurred. My impression was that this in itself was a positive and cathartic process.

The narratives in my study reveal the diversity of participants' experiences, needs, personalities, and responses to such critical events (as individuals and as anaesthetists). Some cases resulted in significant personal and professional impact, while others were remembered solely for the annoyance of having to fill out paperwork.

Amongst the numerous factors that could influence participants' reactions, some may be predictable in terms of the distress they cause: the death of a child, fatal complications in elective cases, negligence or anaesthetic errors (e.g. drug errors), or death as a direct consequence of an intervention (e.g. failed intubation). All these factors may be red flags for the individual and others to be more aware of the impact the event may have. Other factors however, may be less obvious, as evidenced by some of these participants' experiences (e.g. decisions to withdraw therapy and the solitary wait for the patient's demise on table thereafter, or conflict with surgical or nursing staff during high-stress resuscitations). It is when we do not *expect* to be affected by the event that, as individuals and communities of practice, our vigilance for signs of distress is less, and our insight into the possible manifestations of failed, exhausted or ineffective coping abilities is limited.

Gazoni et al. [6, 7] note that key factors contributing to the vulnerability of anaesthetists to emotional and psychological distress following a perioperative death include the rarity of such events, the often solitary nature of anaesthetic practice, and the unlikely provision of post-event support for the anaesthetist. My participants' narratives graphically depict the reality of these factors, but make the additional point that discordance between anaesthetists' professional roles and personal identities may be another source of distress.

As Aitkenhead [5] suggests, and as is reflected in this study, there exists a significant gap in our anaesthetic training on how to handle the aftermath of a perioperative death. This gap provided another motivation for choosing anaesthetic registrars as the sample population in this study. Examining the professional and personal difficulties experienced during our years of training provides an indication of the strengths and vulnerabilities we develop and carry forth into our lifelong careers as specialists. The implications of this gap include identifying key stressors and support needs arising from such adverse events, which, if addressed early on in our training, may help to mitigate some of the stress we experience in our profession.

It is hoped that creating awareness around issues that are not often acknowledged will encourage a more mindful approach when the situation is next encountered, and will see more emphasis being placed on the topic in anaesthetic training. This study's findings suggest that consideration of a more formal arrangement for debriefing following a perioperative death might be fruitful.

Areas that might merit further study would be the effect of education on adverse outcomes, and also effective and deleterious coping strategies, during anaesthetic training; the effect of mentorship and structured debriefing after adverse events in theatre; a prospective study in which participants are interviewed soon after an event, and at set time intervals thereafter (e.g. 1 week, 3 weeks, 6 weeks), and a comparative study between registrars in different years of training, and consultant anaesthetists, examining their responses and coping mechanisms at various stages in their careers.

Smith [40] writes of “possibly damaging experiences” in anaesthesia. Perioperative deaths are one of these experiences. This study has sought to make the experience more understandable, with the hope of helping to make it less damaging to trainees, future anaesthetists and their patients.

ADDENDUM A

CONSENT TO PARTICIPATE IN RESEARCH STUDY

Title of Study : Death on the table – anaesthetic registrars' experiences with perioperative deaths

Researcher : Dr Sandhya Jithoo, Registrar, Department of Anaesthesia,
University of KwaZulu Natal

You are being asked to participate in an MMed research study that aims to examine the experiences of anaesthetic registrars following the perioperative death of a patient. It will focus on the impact of such experiences on the registrar and supportive measures that they may require following such an incident.

For the purpose of this study, a "perioperative death" is defined as any patient death, regardless of the cause of death, occurring in the time period extending from the patient's entry into the Theatre complex, up until discharge from the Theatre Recovery Room.

Procedure : Your participation in the study will involve an individual interview with the researcher. The interview will be audiotaped for the purpose of later analysis.

Confidentiality : Direct quotations from the interview may be utilised and published, however your anonymity will be maintained throughout the study. The transcript will not identify you, your colleagues or the patient(s).

Right to Refuse or Withdraw : Participation in this study is entirely voluntary. You may refuse to participate. You retain the right to withdraw from the study at any stage.

Queries : if you have any queries, you may contact the researcher at : 0849140688

Consent : Your signature below will indicate that you have read and understand the above information, that you understand the nature of your involvement in this research study and that you voluntarily agree to participate.

_____ _____
Signature of Participant Date

_____ _____
Signature of Researcher Date

ADDENDUM B

INTERVIEW SCHEDULE

1a) Age
1b) Gender
1b) Years of practice of anaesthesia (including time as a Medical Officer prior to joining the registrar programme)

2a) How many perioperative deaths have you experienced in your anaesthetic career thus far? (may include cases in which you were the primary anaesthetist; cases in which you were assisting a senior anaesthetist; as well as cases in which you may have been called to another theatre or recovery room to assist during a crisis)
2b) In how many of these cases were you the primary anaesthetist delivering the anaesthetic?
2c) How many of these deaths were anticipated?
2d) How many of these deaths were elective cases vs. emergency cases? What time of day?
2e) When during the course of your training (year) did these deaths occur?

3a) Can you describe your experiences with these cases?
3b) I'd like you to go back to that time period when these cases actually occurred… can you remember what impact these cases had on you?
Prompts :
- Can you recall any particular emotional response to the case?
- Do you remember experiencing any particular physical symptoms as a result of the case – immediately or in the days following it?

4a) Who informed the patient's family of the death?
4b) What was this experience like?
Prompts:
- If you were asked to convey such news to a patient's family, how would you feel and how would you go about doing it?
- Have you received any formal training on how to break bad news to a patient's family? How do you think this prepared you for the actual task of sitting down and speaking with a family in person?

5a) Did you continue working / delivering anaesthetics immediately after this case?
5b) What impact did that have on how you were feeling and handling things at the time?
5c) Do you feel you were able to go back and function effectively in theatre (immediately) thereafter?
5d) Several guidelines in other countries suggest a period of time off after such an incident – what are your thoughts on that *(necessary, helpful, why, how much time, feasible)*

6a) Were there any aspects you felt you needed support or help with after the death (either from your colleagues, or seniors/consultants) both immediately and long term?
Prompts :
- breaking news to family, paperwork, break before next case, debriefing

6b) What support was available to you following the incident?
6c) Debriefing – formal/informal/when did this occur/helpful?
6d) How do you feel about M&M's?

6e) Did you discuss the case with anyone else in the days or weeks following the incident (friends, family, colleagues). How did it come up in conversation, or did you feel the need to discuss it with someone for a specific reason?
6f) Were there any other processes or support measures that didn't occur but that you would have liked to have seen being instituted?

7a) Has the way in which you respond to a perioperative death, both personally and professionally, changed over the course of your training (i.e. compared to when you were a junior registrar)
Prompts :
- What effect does (a) seniority (b) increased level of competence/skill (c) increased exposure to such incidents have on your experience of a perioperative patient death?

8b) What has been your experience with an increased exposure to perioperative deaths and how desensitised you are to these events?
8c) Do you think you've become more resilient in dealing with adverse outcomes?
8d) Has your experience of patient deaths in ICU and interaction with family in that setting had any impact on how you handle a death in theatre?

9) What do you consider your role as an anaesthetist to be? Did you feel that you fulfilled this role in this case?

10) Have the experiences you had with these perioperative deaths led to any changes in your actual clinical practice of Anaesthesia?

11) Can you summarise for me the predominant negative effects of these experiences for you?

12) Can you summarise the positive effects or outcomes arising from these experiences?

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