Beyond Compassion Fatigue:

The Systemic Origins of Compassion in Medicine

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Abstract

Compassion is the heart of medical care. Doctors want to practice with compassion and patients expect to be treated with compassion. Despite its importance, however, research has historically fixated on compassion fatigue, a type of burnout among medical practitioners, and neglected the study of compassion itself. Perhaps more to the point, the absence of empirical work regarding the origins and impediments of compassion has made the development of targeted interventions to enhance compassion difficult. Indeed, the literature on medical compassion has been based primarily on opinions and value-guided suggestions with no clear evidentiary basis. It was in the context of this background that a programme of doctoral study investigating 1) the barriers to compassion in medical practice and 2) interventions to enhance compassion in medicine, was developed.

To address these two aims, the thesis is divided into two sections. In the first section, the thesis begins by proposing a contextual model of compassion, the Transactional Model of Physician Compassion, which provides a framework in which physician compassion emanates (or does not emanate) from four distinct, but interrelated variables – the physician, the patient and family, the clinical situation, and the environmental contexts where compassion takes place. Having proposed a theoretical framework for organising the influences on compassion, two empirical studies that investigate the barriers to care are presented. Study 1 (N = 372 Filipino physicians), describes the development and early validation of an instrument designed to assess impediments to doctors' compassion – the Barriers to Physician Compassion Questionnaire. In line with expectations, this study found that barriers to compassion were not one dimensional, and instead had four components: physician, difficult patient and family, complex clinical situation, and external factors. Given the suggestion that the context in which medicine are important to the experience of compassion, Study 2 (N = 580 New Zealand physicians) extended the development study by

testing whether the barriers to compassion varied as a function of medical specialisation or physician experience. Broadly, this report found that psychiatrists reported the lowest barriers while general practitioners reported the most. Importantly, in terms of beginning the process of illuminating the origins of compassion's barriers (and inconsistent with "fatigue" based models), the barriers to compassion were consistently lower in doctors with more clinical experience.

The second half of the thesis addresses the second aim of this programme of doctoral study, which is to consider and preliminarily test interventions to enhance medical compassion. Since compassion is a systemic problem that warrants a multi-factorial approach, the section begins by recommending practical suggestions, as informed by the Transactional Model of Physician Compassion, to enhance compassion in general practice. These recommendations focused not just on the doctor (e.g., mindfulness training and practice), but also included suggestions that addressed patient and family, clinical, and external factors. Since mindfulness appears to enhance compassion in non-medical populations, suggestions on how to incorporate mindfulness in day-to-day surgical practice were proposed. Though mindfulness *appears* promising as engendering compassion, empirical work examining the effects of mindfulness in physician or medical trainees' compassion is lacking. Thus, Study 3 tested whether a brief mindfulness induction increased compassionate responding among 83 medical students as well as whether trait self-compassion moderated the effect of the experimental manipulation. Analyses showed that mindfulness increased self-reported patient liking and caring but only among medical trainees with low self-compassion. Conversely, the experimental manipulation of mindfulness also predicted greater helping *behaviour* among students with higher self-compassion.

Taken together, these studies are the first to demonstrate that compassion in medicine can and should be studied as an empirical endeavour rather than either simply asserting it as a

value or studying its absence. The sum of these works suggests that compassion in medicine is not all about the doctor, but that multiple variables within and outside the doctor are dynamically interrelated and influence the genesis of compassion. Mindfulness shows some promise as an intervention but since the barriers to compassion also rest within the patient and family, the clinical situation, and external factors, interventions targeting other barriers are also warranted. While challenges remain in studying compassion in medicine, this thesis has shifted the view of medical compassion from simply being value-based and aspirational, to an organized theoretical framework and empirical body of knowledge to relieve human misery and pain.

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Chapter 1 – Overview of the Thesis

The world has seen an unprecedented growth in wealth, scientific knowledge, and connectivity in the past fifty years. Despite these unparalleled developments, however, humans increasingly suffer from destructive conflicts fuelled by multi-generational hatred, famines, ecological man-made disasters, and loneliness. With no apparent solution in sight, compassion is now seen as a potential solution to many of the world's ills ("Charter for Compassion" 2017). Compassion transcends religious, political, ethnic and philosophical divisions, and instead focuses on our common humanity, the notion that, deep within us, we are all much the same. Compassion urges us to focus on the welfare of our fellow human beings, rather than concentrating only on ourselves.

Compassion is the beating heart of clinical practice. As has been made clear throughout this thesis, compassion is expected by patients and families, by regulatory and professional bodies, and by doctors themselves. More than just an expectation, however, compassion is also associated with better health outcomes of patients, lower costs to health systems, and lower burnout among clinicians (Trzeciak, Roberts, & Mazzarelli, 2017).

However, even if compassion is the essence of the caring profession, there seems to be an ongoing crisis of compassion in health with significant numbers of patients not receiving compassionate care (Lown, Rosen, & Marttila, 2011). Investigations into one of several very public scandals at the NHS revealed that a lack of compassionate care in one hospital resulted in the deaths of hundreds of patients in a four year period (Francis, 2013). If events such as this are any indication, practicing medicine with compassion (particularly over time) may not be that simple or straightforward.

However, a focus on the dearth of care – compassion fatigue – has not proven particularly illuminating in terms of highlighting what to do about this challenge. When this

program of doctoral study began in 2012, research was limited with most studies focused on documenting rates of compassion fatigue (Dasan, Gohil, Cornelius, & Taylor, 2015; Gleichgerrcht & Decety, 2014; Huggard, 2003; Shanafelt et al., 2009; Shanafelt, Bradley, Wipf, & Back, 2002), a type of professional burnout afflicting medical practitioners. Though research on compassion fatigue is important in that it highlights the high prevalence of doctors burning out – clearly an important issue that needs to be addressed – concentrating research on compassion fatigue seems to have had the unintended effect of taking the focus away from compassion in medicine itself.

With compassion being a vital aspect of health care, it is baffling that empirical work on the subject is scarce. This bizarre situation created a mandate to begin systematically investigating compassion itself in medicine. At the time this thesis was conceived in 2012, there was scant research on barriers and facilitators to compassion in medicine. In addition, there was very little empirical work on how to practice compassion in clinical medicine, with most of the publications at that time offering opinions and suggestions on compassionate care in the absence of any empirical research. It was in this context that a program of doctoral study examining the barriers to compassion in medicine and investigating ways to enhance compassion in medicine was initiated.

Structurally, this thesis is divided into ten chapters with the first three chapters discussing compassion in general and the need to formally study medical compassion.

Chapter 1 is an overview of this thesis, laying the groundwork for the program of doctoral study. This chapter presents the research questions and introduces the structure of the thesis.

Chapter 2 characterises compassion and differentiates it from empathy and sympathy, discusses the biological and evolutionary basis of compassion, explains why compassion is important in medicine and lastly, differentiates medical from non-medical compassion.

Chapter 3 presents the research on the predictors of compassion from the non-medical literature, considering the characteristics of the helper and the sufferer and the environment where compassion takes place, as well as the psychological interventions that enhance compassion. In contrast, a review of the compassion research in medicine shows it has near-exclusively been focused on the doctor, with most studies concentrated on compassion fatigue.

The next three chapters, Chapters 4, 5 and 6, provide early data relevant to the first research question, "What are the barriers to compassion in medicine?"

In laying the groundwork for the forthcoming empirical works, Chapter 4 presents a new theoretical model of compassion in medicine: the Transactional Model of Physician Compassion. This model organises and highlights the range of dynamically-interrelated and potentially modifiable variables that are thought to influence compassion in medicine including physician, patient and family, environment and clinical factors.

For the Transactional Model of Physician Compassion to be useful, however, the factors that the model identifies must be measurable. Chapter 5 thus represents an empirical paper that describes the development and initial validation of an instrument designed to measure the barriers to compassion in a large sample of doctors. Consistent with the Transactional Model, four distinct barriers or impediments to compassion within and outside the doctors were in evidence. To a surprising extent, these four barriers: doctor factors (e.g., fatigue, stress), patient and family factors, external factors, and complex clinical situations reflect the hypothesised barriers within the Transactional Model of Physician Compassion.

Chapter 6 is an empirical paper that extends this basic psychometric development work by addressing related descriptive questions regarding how these barriers are distributed across five physician specialisations (psychiatry, general practice, surgery, paediatrics and general medicine) and considering whether they vary as a function of clinical experience. The published paper shows that barriers to compassion differ across specialisations and level of physician experience.

Guided by the theoretical model provided by the Transactional Model of Physician Compassion, the second section of the thesis comprises three published works that present conceptual and empirical publications that address the second research question, "How can compassion in medicine be enhanced?"

Chapter 7 is a published article that provides an example of how this broad and multi-dimensional approach – the Transactional Model of Physician Compassion – might be leveraged to enhance compassion in a general practice setting. Based on the four barriers to compassion identified in Chapter 5, specific, pragmatic recommendations on how to augment compassion were grouped under doctor, patient-family, clinical, and external factors.

In Chapter 7, several suggestions were made to enhance compassion within the doctor, including remembering one's motivation to be of benefit to the patient, compassion training, and mindfulness training. Mindfulness has the potential to enhance compassion within the physician by being calm, present, non-judgmental, open to experience and connected to the patient. Though the empirical literature on the effects of mindfulness on compassion is small and inconsistent, theoretically, it shows some promise. Mindfulness represents a broad skill set of regulatory capacities that doctors, particularly surgeons can use in their daily clinical practice. Anecdotally, surgeons are renowned for their technical skills but are thought to lack

compassion. Without knowing it, surgeons are, on a daily basis, employing mindfulness, by being attentive and concentrated while they are performing procedures.

Chapter 8 is a published conceptual paper that discusses how mindfulness can be incorporated and enhanced in the broader clinical work of surgeons. More broadly (and specifically *vis-à-vis* compassion) basic science studies of non-medical populations suggest that mindfulness may show some promise in enhancing compassion. However, it remains unclear whether mindfulness can enhance compassion specifically in medical settings which have a very particular set of challenges. As mentioned in Chapter 2, the demands for practicing compassion in a medical context are different from those in non-medical settings, with compassion in medicine being legislatively required and professionally expected, even with patients who might be seen as non-deserving and in environments that can be challenging.

Chapter 9 presents a published experimental study examining the effects of a brief mindfulness induction on self-reported and behavioural indices of compassion in medical trainees. The paper also examines whether trait self-compassion moderates the effects of mindfulness induction on medical compassion.

The final chapter, Chapter 10, reviews the PhD process and summarises the findings and implication of the program of research the thesis represents. The results of the studies are integrated with what is now a substantially larger and faster moving literature, specifically in relation to how medical compassion is conceptualised and measured, factors influencing medical compassion and interventions that may augment physician compassion. Limitations, future directions and conclusion are then presented.

Chapter 2 – Why Compassion Matters in Medicine

Introduction and Chapter Overview

As the world is becoming more interconnected and global suffering is becoming more obvious, a call for a more compassionate world is being made ("Charter for Compassion," 2017). Previously more commonly associated with various world religions, compassion is increasingly viewed as a secular human ideal that transcends faith, culture, or race (K. Armstrong, 2008). This renewed interest in compassion is also seen in medicine, where doctors are expected (Old, Adams, Foley, & White, 2011) and increasingly urged to treat their patients with compassion (Youngson, 2012).

As will become clear, however, while compassion is an integral part of being a doctor, research on medical compassion is limited, with the focus being on compassion fatigue, a type of medical burnout (Figley, 1995; Huggard, 2003; Showalter, 2010; Sprang, Clark, & Whitt-Woosley, 2007). In laying the foundation for the current programme of research, this chapter will begin by characterising compassion and differentiating it from similar pro-social states such as empathy and sympathy. In establishing the basis for considering medical compassion a "variant" of compassionate responding more generally, it will then briefly outline the biological underpinnings and evolutionary bases of the compassion system. Having established several reasons which motivate the study of compassion in medicine, the chapter will conclude by reviewing the similarities and differences between "everyday" compassion versus medical compassion and briefly examine why such differences might influence the delivery of compassionate care by doctors.

Characterisations of Compassion

The term "compassion" comes from the Latin roots *com* and *pati. Com* means *'together with'* and *pati* is *'to bear or suffer'* (Dougherty & Purtilo, 1995). However, compassion has been defined in various ways and is difficult to pin down. According to some, compassion is

an attitude comprised of feelings, cognitions, and behaviours that are focused on caring, concern, tenderness and an orientation toward supporting, helping, and understanding those who are perceived to be suffering or in need (Sprecher & Fehr, 2005). For other writers, compassion is seen as an emotion that is focused on concern for the wellbeing of another (Valdesolo & DeSteno, 2011). Yet another view suggests compassion is a three part experience comprised of 1) noticing another's suffering (through paying attention and listening to emotional cues and context); 2) feeling and connecting, also known as emotional resonance (through perspective taking and empathy); and 3) responding to or alleviating the suffering (Cameron, Mazer, Deluca, Mohile, & Epstein, 2013; Way & Tracy, 2012). Hence, while there are variations in emphasis, most of these definitions and views on compassion share a focus on compassion's proactive nature, in which the individual is motivated to care for and ameliorate the suffering of the other (Sinclair, Beamer, et al., 2017). A parsimonious definition of compassion that will be used in this thesis encapsulates the consensual elements of these diverse characterisations; that compassion is an emotional response that has two components: a feeling that arises in witnessing another's suffering and a motivation to want to help or relieve the suffering (Goetz, Keltner, & Simon-Thomas, 2010).

Compassion is commonly confused with other responses and the term is used interchangeably with related terms such as "empathy" and "sympathy" (Sinclair, Beamer, et al., 2017). Given such terms are increasingly being used in the context of patient-centred health delivery, clarifying these differences would assist in their accurate usage (Sinclair, Beamer, et al., 2017). Broadly speaking, while these three states are all other-oriented rather than reflecting an orientation towards the self (Goetz et al., 2010), there are nonetheless important differences. Experientially, sympathy is closer to the emotion of sadness, a feeling of sorrow and pity towards the misfortune of another (Goetz et al., 2010; Post et al., 2014; Sinclair, Beamer, et al., 2017) than it is to compassion. Sympathy is sometimes viewed as a

reaction without conscious thought or reflection (Sinclair, Beamer, et al., 2017). While compassion is similar to sympathy in that both arise in response to the misfortune of others, compassion differs from sympathy in that compassion includes the subsequent motivation or desire to improve the suffering of the other. Because of compassion's focus on action, it may have more utility in healthcare than sympathy or pity, responses that do not necessitate action and may also lead to patients feeling inferior.

More complex than sympathy, empathy is generally defined in terms of an understanding and feeling of what others feel (Decety & Lamm, 2006). The response is likely more useful than sympathy or pity to both patients and providers. More fully, because empathy involves perspective taking and being able to put oneself in another person's situation (Baillie, 1996; Engelen & Röttger-Rössler, 2012), it can be viewed as the initial stage of a prosocial state like compassion. In compassion, however, empathy is accompanied by the motivation to relieve the suffering or the difficulties of another. A carer who remains empathetic without moving to wanting to relieve discomfort (compassion) is at risk of empathic distress (Klimecki & Singer, 2011). In contrast, shifting from an empathetic state to compassion is often accompanied by positive feeling states (Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008; H. Y. Weng et al., 2013).

In some ways, it is easier to understand differences among the concepts of empathy, compassion, and sympathy by providing an example. Imagine a patient arrived in the emergency room with severe stomach aches, nausea, and vomiting. He was writhing in pain. Earlier, he was attending his sister's wedding celebrations but, because he became quite ill, he reluctantly left the party and was taken to the emergency room. A senior doctor interviewed and examined him. The doctor felt the patient's suffering and extreme discomfort. In this sense, the doctor was empathetic, feeling or understanding that which the patient experienced (Decety & Lamm, 2006). However, if the doctor did not desire to reduce

the patient's suffering, they might be described as experiencing empathy but not necessarily compassion. If, however, the doctor was moved by the patient's situation, felt a desire to help, and then tried to make the patient comfortable by (for example) holding his hand and offering some temporary pain relief, they could be seen as compassionate rather than empathetic. A junior doctor then joined the consultation and felt sorry for the patient upon realising that he had missed his sister's wedding reception. This state of feeling sorry is termed sympathy, an experience of pity or sorrow regarding someone else's misfortune that, again, does not necessitate actions designed to reduce suffering.

In summary, compassion is neither empathy nor sympathy. As used in this thesis, compassion is characterised as a feeling that arises when witnessing suffering and that is accompanied by a desire to relieve that suffering (Goetz et al., 2010). This characterisation embodies the key elements of compassion described by leading researchers in the field (Cameron et al., 2013; Sinclair, Beamer, et al., 2017; Sprecher & Fehr, 2005; Way & Tracy, 2012). At the same time, it is simple and easily understood by non-academic medical professionals who are the main subject of inquiry of this research. Finally, this characterisation does not make any mention of the origins of compassion and thus allows us to consider compassion as having multiple determinants and origins.

Biological and Evolutionary Underpinnings of Compassion

Insight into medical compassion is advanced when examining empirical work in affective neuroscience and exploring the evolutionary basis for the evolved systems that govern compassion in general. By examining the evidence for compassion-like behaviour in other species as well as recent data suggesting the possible presence of specific patterns of brain activation in the presence of compassionate states, further understanding of what might similarly occur in medical compassion may be realised.

In beginning, it is worth noting that the capacity for caring appears innate not just in humans but also in other social mammalian species (Bekoff & Goodall, 2008; De Waal, 2010). In experimental settings, for example, 18 month old human toddlers readily help unrelated adults achieve their goals, without any obvious benefit to the infant (Warneken & Tomasello, 2006). The same experimenters showed similar results with 18 month old chimpanzees where the animals helped human experimenters without any benefit, reward, or praise (Warneken & Tomasello, 2006). Outside of humans and chimpanzees, numerous observational studies of other primates, birds, elephants, canines, and felines have also documented compassion-like behaviours both in the wild and in animal enclosures (Bekoff & Goodall, 2008; De Waal, 2010). Non-human animals then, appear to have evolved a capacity for kindness and compassion-like actions as part of their normal behavioural repertoire (Bekoff & Goodall, 2008; De Waal, 2010). Recognising that caring is innate, hardwired, and natural enables us to think broadly about how the origins and purpose of compassion and thus to structure the delivery of healthcare in a manner that allows compassion to flow. Rather than viewing compassion as something that must be striven for, viewing compassion as innate may facilitate a broader search for the factors that both facilitate and block it from flowing.

As with most human behaviours, the origins of compassion are complex. Among the most likely explanations for the evolution of compassion-like behaviours in humans is the protracted maturation of (and therefore the need to care for) the young (Goetz et al., 2010). Human children require years of caring from parents and/or the community before they become viable or self-sufficient. From the moment a baby is born, mothers show caring behaviours by feeding, cleaning, providing warmth, protecting a vulnerable organism, and developing sensitivity to distress signals from the child. Darwin himself commented that the

tendencies to experience compassion-like feelings for vulnerable children who are in need increased chances of the survival of the young (Darwin, 1872).

Complementing this approach is the suggestion that the development of the tendency to care and be kind among humans is broadly linked to evolutionary pressures inherent to group survival. Specifically, it has been suggested that because the individual's fitness interests tended to converge with those of group members (and not only among relatives), humans evolved to be dependent on one another (Burnstein, Crandall, & Kitayama, 1994; Goetz et al., 2010). Tasks that are essential to survival and enhance inclusive fitness such as procuring food and water, defending against predators, and raising of the young become easier and more achievable when group members share these activities. In group-living individuals, natural selection favours those who are prone to help others and/or where the helper's inclusive fitness is enhanced (Burnstein et al., 1994). As shall be shown in subsequent sections of this thesis, however, a natural capacity to care does not mean that all individuals are equally so predisposed or that the compassion system is without checks and balances.

The scientific study of the capacities to empathise and be compassionate has been advanced by neuroimaging studies. Neuroimaging work has shown that when a person is in an empathetic state, for example when witnessing and feeling the pain of someone else or making inferences about other people's mental states, brain regions including the anterior insula, anterior medical cingulate cortex (Klimecki, Leiberg, Lamm, & Singer, 2013) and medial frontal cortex are activated (Frith & Frith, 2006). A compassionate state triggered by witnessing others' suffering results in increased activity of the midbrain-ventral striatum region (Kim et al., 2009), ventral tegmental area, substantia nigra, medial orbitofrontal cortex, putamen, and pallidum (Klimecki et al., 2013). Importantly, in terms of how we think about enhancing compassion in medicine, the brain areas active during compassion states are also regions associated with positive affect, a sense of connection (Klimecki et al., 2013), and

with feeling of reward (Kim et al., 2009). From a neuroimaging perspective, compassionate states are linked to feeling good.

Taken together, evidence from both comparative studies and recent neuroscience cohere in suggesting that compassion represents an evolved and selected system not just of humans but also of many animal species. When compassion occurs, at least as evidenced in neuroimaging, enhanced activity of the neural systems associated with pleasurable feelings are reliably observed. Though the contexts in which physician compassion happens and does not happen are distinct in some ways (below), it is likely that the basic compassion systems discussed above are nonetheless operational (Adamson, Bunch, Baldwin Jr, & Oppenberg, 2000).

Physician Compassion Matters

More pragmatically, compassion is central to the effective practice of medicine. Having characterised compassion in general terms in the previous section, the following section outlines an argument for the importance of compassion in the practice of medicine. While acquiring adequate medical knowledge and technical skill are important, the values emphasised in medical training include professionalism, respect for patients (Brotherton, Kao, & Crigger, 2016), patient centred care (Epstein & Street, 2011), honesty, accountability, self-policing, industry, and compassion (Stern, 1998). Indeed, the central ritual in a new doctor's qualifying ceremony – the Hippocratic Oath (or its variation) – emphasises confidentiality, integrity, commitment to patient care, and compassion (Stern, 1998). In this section, the reasons why compassion matters in medicine will be discussed. Initially, the fact that compassion is expected by patients, by medical boards, and doctors themselves is discussed before the section turns to consider the early evidence that compassionate care is associated with better health outcomes.

First, compassion from a doctor is expected by patients. When a patient goes to a doctor because he experiences unremitting stomach cramps that are so severe that it almost causes them to pass out, there is an expectation that the doctor will kindly listen, look at the person in the eye with tenderness, examine the abdomen gently but with confidence, and offer ways to take away the pain. Patients prefer that the treatment they receive is focused on them as a whole person, with respect and care and not solely addressing the distressed organ or painful symptom (Flocke, Miller, & Crabtree, 2002; Old et al., 2011).

When one is sick, there is a sense of confusion, vulnerability, and aloneness which adds an extra dimension of suffering to the original physical pain experienced. As such, a patient feeling connected and listened to by the doctor experiences emotional relief and psychological comfort, a process that may well be different from the actual improvement of the physical pain the patient first presented with. It is possible that patients remember the kind doctor or the caring nurse more than the actual procedure, expensive tests, and latest treatments.

The reverse is true as well. Since there is an expectation that patients will be treated with compassion, unkind or cold interactions with doctors are often unforgettable. Not surprisingly, poor communication, unfriendly or difficult medical interactions are often the basis for complaints and lawsuits (Huntington & Kuhn, 2003; Levinson, 1994). Patients want to be treated with respect and if they do not receive it, they are unhappy and dissatisfied. A few are even angered to the point that they want doctors to be sanctioned or punished. In medical education workshops focused on minimising litigation or patient complaints, the reverberating message has always been the same. To avoid malpractice lawsuits, doctors should treat patients and families with care and compassion (Adamson et al., 2000; Aicher, 1999; Clauss & Siglock, 1994; Huntington & Kuhn, 2003; Levinson, 1994).

Second, and perhaps not surprisingly, medical regulatory bodies have similar expectations. In New Zealand, as well as in medical associations and boards in many countries, there is an expectation that doctors will perform their duties not only with the appropriate, relevant technical expertise but also with kindness and compassion (American Medical Association, 2016; Medical Board of Australia, 2017; New Zealand Medical Association, 2014). The American Medical Association code of ethics, for example, stipulates that doctors should treat their patients with compassion and respect (American Medical Association, 2016). The Medical Board of Australia states that patients trust their doctors because they believe that in addition to being competent, the doctor will display qualities such as integrity, truthfulness, dependability, and compassion (Medical Board of Australia, 2017). In all New Zealand health care facilities (e.g., hospitals and clinics), the Health and Disability Commission, a government office that protects patient rights, disseminates posters stating that patients are to be treated kindly, with dignity and respect. If these qualities of care are seen to be missing, the patient has a right to complain and the complaint will be taken seriously (Health and Disability Commission, 2017). The importance of compassion in healthcare has been a focus in New Zealand to the extent that there was a move to expand the New Zealand Code of Patient's Rights to include the legal right of patients to receive compassionate care (Paterson, 2011). Though the move was not successful, this legislative drive reflects the seriousness with which compassion is expected at an institutional and even national level.

Third, the regulatory expectation that patients should be treated with compassion is also evident in the opinions and values of doctors themselves. Medical students choose to study a gruelling medical course for a range of reasons including interest in biological sciences, desire for financial security, having family members who are doctors, and the intellectual challenges of medicine (Draper & Louw, 2007). However, many if not the majority of

doctors also choose to study medicine because of altruistic motives; to help, to care, and to make a difference with people and in society (Draper & Louw, 2007; Millan et al., 2005). Consistent with these values and motivations, studies suggest that the provision of good care by doctors leads to feelings of fulfilment, a phenomenon recently termed compassion satisfaction (Craig & Sprang, 2010; Hooper, Craig, Janvrin, Wetsel, & Reimels, 2010; Sprang et al., 2007; Stamm, 2002).

Lastly, compassion matters in medicine because empathetic and compassionate care may be associated with better health outcomes. A small number of recent studies show a positive relationship between compassionate clinical care and better patient outcomes. One large retrospective correlational study involving more than 20,000 diabetic patients in Italy found that patients who saw their doctors as being highly empathetic had significantly fewer acute metabolic complications than those who saw their physician as less empathetic (Canale et al., 2012). This study is unique in that it used objective measures of diabetic complications (e.g., ketoacidosis, coma) as the main outcome. Another study found that acute tonsillitis patients who were given more personal attention, more detailed information about the diagnosis, treatment, and prognosis and a more extensive physical examination reported greater symptom improvement than the control group (Olsson, Olsson, & Tibblin, 1989). A randomised control trial of compassionate care versus usual care in an emergency department significantly reduced return visits from homeless patients (Redelmeier, Molin, & Tibshirani, 1995). Surgical patients who rated their surgeons' empathy as high had a twenty-fold improvement in their medical outcome (Steinhausen et al., 2014). The duration and severity of the common cold was assessed to be lower by patients who evaluated their doctors as highly empathetic (Rakel et al., 2009). From a psychological perspective, patients who assessed their doctors as highly empathetic also reported higher levels of patient satisfaction (Derksen, Bensing, & Lagro-Janssen, 2013; Schrooten & De Jong, 2017). Though the

number of studies looking at empathy and compassion and its effects on health care outcomes are still small, the data available show that compassionate and empathetic care influences objective and subjective measures of health outcomes.

Conversely, the reverse is true insofar as a lack of compassionate care can lead to incredible patient suffering. The Francis Report (2013) which investigated the healthcare scandal in the Mid-Staffordshire Trust suggests that a system-wide lack of compassion resulted in appalling patient suffering and significant patient morbidity and mortality. Hence, one of the main recommendations was for all staff serving patients to contribute to a compassionate and caring service (Francis, 2013) as it contributes to better patient health.

From the above it can be seen that compassion is essential to the practice of medicine for several reasons. It is expected by patients, mandated by regulatory bodies, and even doctors themselves treat compassion as an important value and a professional requirement. Putting expectation aside, practicing with compassion also has been linked to better health outcomes of patients. In total, the importance of compassionate care cannot be ignored and creates a mandate for the scientific study of compassion in medicine. As will become clear, however, this literature is fragmented.

Medical and Non-medical Compassion

The previous section detailed the importance of compassion to the practice of medicine and the need for continued research. To further understand compassion as it specifically occurs in medicine, a systematic evaluation of the similarities and differences between every day, non-medical compassion and medical compassion may yield helpful insights. Compassion in both medical and non-medical contexts are dyadic processes involving a helper and a receiver. In both cases, suffering is witnessed, and the helper is emotionally moved with a subsequent motivation to relieve misery. Though it has not been documented in neuroimaging studies, it is likely that the same brain structures and mechanisms are involved

in both instances. Subsequent positive feelings, a sense of pleasure, satisfaction, and feeling good by the helper probably occurs in both settings (Hooper et al., 2010; Stamm, 2002).

This global experiential and mechanistic similarity noted, however, medical and non-medical compassions differ in some significant (and potentially critical) ways. These differences are important in that they may impact on the transactional process of compassion in medicine. Below, the differences between medical and non-medical compassion are discussed, with emphasis resting on three key differences. First, it will be shown that compassion in medicine is demanded whilst compassion in everyday situation is optional and even extolled. Second, the sheer number of instances where compassion is needed is vastly greater in medical versus non-medical contexts. Third, in contrast with non-clinical situations where compassion may be withdrawn from the "undeserving," compassion should be shown to all patients in medicine even if they are "difficult" or seen as undeserving.

As noted, medical compassion typically takes place in the context of a specific and confined setting of a purpose-built healthcare facility, such as a clinic, hospital, or rest home. In these settings, doctors, unless they are doing volunteer work, are contracted, professionally obliged, and financially compensated for their care (Gosden, Pedersen, & Torgerson, 1999; Roemer, 1962). This particular set of circumstances sets up an expectation from the public that doctors should show compassion in all medical transactions. By contrast, non-medical compassion normatively takes place outside of a healthcare facility (e.g., in the streets of a metropolitan city, on school grounds, at home) where the call for compassionate action is unexpected, non-obligatory, and often sporadic.

To illustrate, a doctor who is unkind but symptomatically treats a patient will probably receive a complaint or even a public backlash. On the other hand, a compassionate doctor most probably will not receive a compliment as he was just doing what was expected of him. In stark contrast, when a member of the public ignores a homeless person freezing in a bus

stop, the behaviour is tolerated and accepted. However, if someone else offers food and shelter to the homeless, the compassionate act is lauded and celebrated. Compassion in healthcare is expected and demanded, while non-medical compassion is extolled and even considered heroic.

A second, key difference between medical and non-medical compassion is the number of situations or opportunities in which compassionate action is required. In a non-medical setting, the opportunities for showing kindness to someone experiencing difficulties (e.g., witnessing an old person have difficulties getting on the escalator) are rare, sporadic and often short term, requiring a few seconds or minutes of effort from a helper. In contrast, in many medical settings, doctors deal with countless, back-to-back situations during a working shift where witnessing physical and emotional suffering is the norm rather than the exception. It is not uncommon that a junior doctor sees 60 sick hospital patients in a 12-hour shift. In a general practice, a typical practitioner will see patients every 5 to 15 minutes, meaning that in a typical work day, the doctor sees from 30 to 40 patients. Instances requiring compassion in the medical setting can be repetitive and relentless. In each and every one of these patient contacts, doctors are expected to be compassionate all the time. The incessant demand for constant and repeated compassion is few and far between outside the field of medicine.

Related to the continuous demand for compassion in medicine is the low ratio of helpers (doctors) versus receivers of care (patients). In the community, unless there is a disaster or catastrophe, the number of people requiring compassion (receivers) is heavily outnumbered by the number of potential helpers who are capable of providing compassion. For example, when an elderly woman with dementia walks out of the nursing home and is lost, the family, relatives, friends, neighbours, the police, the fire brigade, and even the military may get involved in the search. By contrast, a busy night shift in a hospital containing several wards with dozens of patients in each might only have two junior doctors

fielding more than a hundred calls and managing the complaints, fears, and aches and pains of patients as well as the concerns of families and nurses.

Finally, unlike in everyday situations when judgments regarding deservingness and merit can influence the decision to help, medical compassion is expected in situations where patients are seen as "difficult". Often, these are patients who are dissatisfied with their care, angry, abrasive, are mentally unwell, or who have conditions that are seen as self-inflicted, like substance abuse (Hahn et al., 1996; Jackson & Kroenke, 1999). Showing compassion in these situations can be more challenging compared to showing kindness to a random stranger who will most often be appreciative and rewarding.

In summary, although compassion is experientially similar and likely relies on similar evolved mechanisms in medical versus non-healthcare contexts, there are important differences between the two. Compared to non-medical compassion, compassion in medicine occurs in a discrete physical facility, is expected and financially compensated. It involves a large number of receivers of compassion, including those who can be difficult to like and show care for. This distinct configuration of medical compassion where doctors are expected to deliver care to innumerable patients and families, continuously, as if on tap, not just for a few minutes, but for decades makes this form of compassion different and creates the possibility to give rise to distinct problems that may mitigate compassionate care itself.

Chapter 3 – Is Medical Compassion More Than Compassion in a Medical Context?

Chapter Overview

Throughout human history, compassion has variously been referred to as an ideal, a human strength (Mongrain, Chin, & Shapira, 2011), the most positive of all positive mental states and as essential to happiness (Ricard, 2011). Kindness to one another is a key teaching in most of the world's major religions, Christianity, Islam, Hinduism, and Buddhism. Yet despite its revered position in the hierarchy of human virtues, the study of compassion has typically been left to writers in the philosophical and religious realms. Empirical research on compassion is relatively scant and it is only in the past two decades that has there been an upsurge of academic interest in the topic.

A brief survey of recent research on compassion studies considering topics ranging from quantitative and molecular genetics of prosocial behaviours (Conway & Slavich, 2017), neurophysiology of the parasympathetic nervous system during affiliative states (Porges, 2001), neuroendocrine studies examining the role of oxytocin in compassion-like behaviours (Colonnello, Petrocchi, & Heinrichs, 2017), experiments on caring behaviours (Darley & Batson, 1973; Warneken & Tomasello, 2006), neuroimaging research on brain regions involved in compassion (Klimecki et al., 2013; H. Y. Weng et al., 2013), and to the effects of meditation practices on compassion and other prosocial states (Condon, Desbordes, Miller, & DeSteno, 2013; Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008). Indeed, the sheer variety of the research approaches to compassion serve to underscore the complexity of the phenomenon. Compassion is not limited to the physiology and psychology of just the helper but also focuses on the quality of dyadic relationship between the helper and the receiver which in turn involves the environment or system in which compassion occurs. Perhaps more to the point in terms of the current thesis, this highly complex and differentiated array of

approaches and interests stands in stark contrast to the near-myopic focus of medical compassion research which has remained centred on the study of compassion fatigue, a type of burnout of helping or caring professionals.

In highlighting the need to study medical compassion from a perspective that pays attention to the rich theoretical and empirical tradition in basic sciences research, the current chapter begins with a brief survey of the empirical literature on compassion with a focus on the established predictors of compassion. This overview is then followed (and contrasted) by a review on the more limited research investigating medical compassion. After noting the differing research approaches typifying the study of non-medical versus medical compassion, a critique of the state of medical compassion research is offered. The discrepancies evident are then used to frame the presentation of an alternative approach, a transactional perspective, for studying medical compassion.

Predictors of Compassion in Non-Medical Contexts

As noted, the study of compassion has its origins in many of the world's religious traditions. Religious commandments about kindness and compassion such as "Thou shalt love thy neighbour as thyself" (Mark 12:31), imply that compassion is a state that can be activated at will by the faithful, regardless of the type of neighbour one has. If only this were a fact, then conflict, wars and violence would not occur in religious societies that command love and charity amongst its faithful. As will become clear, while the capacity for compassion may be universal, its actual expression is not like a tap that flows continuously and can be turned on by will alone. Rather, a small empirical base suggests that expressions of compassion are dynamic and can be influenced by a large variety of factors both within as well as outside the helper. Below, these factors are reviewed as they occur within three broad categories: 1) the helper's appraisal of the sufferer, 2) the helper's perception of safety, and 3) the influence of specific mental training of compassion. In the context of the overall

approach to compassion reflected in this thesis, while these factors are presented or organised as if they were discrete, they are almost certainly linked and highly interrelated *in vivo*.

The first factor that can facilitate or mitigate a compassionate response is the helper's appraisal of the sufferer. To review, compassion and caregiving behaviours are triggered when helpers witness group members as suffering in various ways such as appearing sick and injured (De Waal, 2010), appearing uncomfortable or in some form of distress (Condon et al., 2013), or having trouble achieving their goals (Warneken & Tomasello, 2006). This tendency to behave compassionately, however, is *conditional*, meaning that helping is not universally given to everyone suffering and is, instead, influenced by the helper's appraisal or evaluation of the sufferer. Research in this area suggests there are three key ways in which helpers appraise the sufferer that can influence whether caring behaviours emerge. First, humans are more likely to help relatives or genetically-related members of a group rather than non-relatives (Burnstein et al., 1994). Even among non-human primates, observations suggest that after a chimpanzee is defeated in a brutal fight, consolation is mainly offered by the loser's relatives and friends (De Waal, 2010) There is some truth in the aphorism "blood is thicker than water" insofar as compassionate behaviours are involved.

Second, in addition to preferring to help family or blood relations first, humans also tend to be more compassionate towards others with whom they feel connected (Cialdini, Brown, Lewis, Luce, & Neuberg, 1997), those who share their values or interests (Goetz et al., 2010), or those who are "like them" (Bloom, 2017). Empirically, this general tendency to behave prosocially towards those we see more similar to ourselves is strongly evident in studies of empathy (Bloom, 2017). In medicine, it seems commensurately likely that doctors are more inclined to help patients in need who are of the same religious faith, ethnic group, socioeconomic or employment strata.

Third, helping behaviour is also influenced by the helper's perception of the sufferer's deservingness to be helped or, conversely, their blameworthiness and responsibility for their own suffering (Rudolph, Roesch, Greitemeyer, & Weiner, 2004). In general, evidence suggests that when a sufferer is perceived as substantially responsible for his suffering, for example, a prostitute infected with the HIV virus or a synthetic cannabis user poisoned by a tainted product, the likelihood of being helped is reduced as the sufferer is more likely to be appraised as "deserving" of their fate (Skinner, 2014). In contrast, a bereaved child who lost both parents in an accident or a soldier injured while helping during a natural disaster will likely be appraised as blameless and deserving of care. In summary, empirical evidence demonstrates that humans' capacity for compassion is moderated by the appraisal of the sufferer's genetic closeness, perception of similarity in values and interests, and lastly, the deservingness of care.

A second factor that influences compassion is the helper's subjective perception of safety. There is accumulating evidence that suggests that, for a potential helper to show caring or prosocial behaviours, a feeling of safety is often necessary (Stellar & Keltner, 2017). In theory, the mammalian autonomic nervous system prioritises detecting threats such that if a person or potential helper feels threatened, they are likely to first focus on eliminating (or escaping from) the threat before helping others (Stellar & Keltner, 2017). In experimental psychology, this principle is well accepted. Tasks such as the emotional Stroop (McKenna & Sharma, 1995) permit the inferring of unconscious anxieties by examining interference with reaction times. The core notion is that where word meaning contains threat value for the person, attentional bias (to the threat) interferes with word colour processing, slowing reaction times (Phaf & Kan, 2007). This view of anxiety interference is conceptually similar to that found within polyvagal theory, which suggests that it is only when mammals feel safe that the parasympathetic nervous system engages the mammalian tendency to

socially connect and care for each other (Porges, 2001). In the context of compassion research, such findings have been taken to suggest that when people feel threatened, empathy, and subsequently, compassion will be difficult to generate (Gilbert, 2014).

Importantly in the context of medical compassion, threats are not necessarily external to the person but can be internal in the form of self-criticism, fears of ridicule and rejection, loneliness, and abandonment (Gilbert, 2014). A particular internal threat that some people experience is fear of compassion when people feel that they do not deserve to receive compassion or when they are frightened of feelings associated with compassion like fear and sadness (Gilbert, 2017). Indeed, according to Gilbert (2014), negative emotions like frustration, anger, contempt, and disappointment create a threatening internal environment which inhibits compassion. In an experiment examining the effects of urgency or external pressure on compassionate behaviour, Princeton seminarians were given a task to prepare for a talk on the parable of the good Samaritan, a story depicting compassion to strangers (Darley & Batson, 1973). One group of seminarians was given sufficient time to prepare the sermon while another group was pressured to prepare it in just a few minutes. The seminarians were instructed to deliver the sermon to another building in the campus. Along the way, they encountered a shabbily dressed, slumped stranger on the road. Those who were in a hurry ignored the man while members of the more relaxed group were more willing to help. It did not matter that the students were preparing for a sermon on compassion to strangers as the sense of urgency diminished the likelihood of helping others (Darley & Batson, 1973). Consistent with how the autonomic nervous system is organised, this experiment shows the innate prioritisation of threat management and urgency may interfere with compassion to others.

A third factor that influences compassion is having a history of training of a type that enhances compassion. Within psychology, trainings of this kind have been embodied in

protocols including Compassion Focused Therapy (CFT) (Gilbert, 2014), Mindful Self-Compassion (MSC) (Neff & Germer, 2013), Compassion Based Cognitive Therapy (CBCT) (Reddy et al., 2013) and Compassion Cultivation Therapy (CCT) (Jazaieri et al., 2013). Common features of these different therapies lie in their use of compassion visualisation, compassion meditations, and mindfulness training (Kirby & Gilbert, 2017).

Of particular relevance is CFT which aims to enhance compassion not just towards others but to oneself as well. What differentiates CFT from other compassion enhancing protocols is that it has a therapy component of formulation, therapeutic relationship and engagement and individualised intervention (Gilbert, 2017). CFT is based on the understanding that humans experience conflicts and psychological difficulties because of the overlapping basic brain, emotional systems, and the more evolved brain (Gilbert, 2014). With CFT, patients are able to mindfully access, tolerate, and direct affiliative motives and emotions for themselves and others, eventually developing compassion to self and others (Kirby & Gilbert, 2017). A recent meta-analysis of the various compassion training protocols examined 21 randomised clinical trials involving about 1,300 participants, analysing outcomes of compassion, mindfulness, depression, anxiety, and wellbeing (Kirby, Tellegen, & Steindl, 2017). This review showed that through compassion training, self-reported mindfulness and compassion can be enhanced in addition to improvements in the scores of depression, anxiety, and psychological distress (Kirby et al., 2017). A further report, not included in the meta-analysis, was an eight-week experiment comparing compassion meditation with mindfulness training (Condon et al., 2013). This experiment is different from most compassion training studies as its main outcome is compassionate action (a behavioural measure) and not merely self-reported compassion. This study showed that both mindfulness and compassion interventions enhanced helping behaviours of blinded participants to a confederate on crutches who appeared to be suffering (Condon et al., 2013). Overall, this

study, like the other published compassion protocols mentioned, appears to demonstrate that the compassion as measured by a behavioural paradigm or self-report can be enhanced through mental training.

Compassion in Medical Contexts

As evidenced in the previous section, the empirical work on compassion outside of medicine has grown rapidly in the past few decades. Studies have explored the basic science of compassion including genetics and neurophysiology to social experiments and training paradigms to enhance compassion. In contrast, despite the centrality of compassion to the practice of medicine, empirical work on physician compassion is appallingly scant (Sinclair, Norris, et al., 2016). In this section, the small literature examining compassion among doctors and medical students will be examined as will studies of compassion fatigue, which form the bulk of the medical compassion literature. Lastly, recent empirical work on compassion satisfaction will be acknowledged.

Compassion is frequently referenced in the medical literature, but in the past 25 years there have been fewer than a dozen actual studies on compassion among doctors and medical students (Blanco, Maderer, Price, Epstein, & Summergrad, 2013; Cameron et al., 2013; Deloney & Graham, 2003; Dhawan, Steinbach, & Halpern, 2007; Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013; Kalish, Dawiskiba, Sung, & Blanco, 2011; Riess, Kelley, Bailey, Dunn, & Phillips, 2012; L. W. Roberts, Warner, Moutier, Geppert, & Green Hammond, 2011; Shih et al., 2013; Wear & Zarconi, 2008). One study classified the different ways in which doctors express compassion in clinical settings (Cameron et al., 2013) while three studies examined doctors' and trainees' perceived "level of connection" with patients and what they thought influenced their compassion (Dhawan et al., 2007; L. W. Roberts et al., 2011; Wear & Zarconi, 2008). While such studies are helpful in understanding the phenomenology of compassion, specifically the perspective of care from the doctor's point of

view, they do not specifically illuminate the factors that may enhance or interfere with medical compassion.

Of the five experimental studies on compassion in medicine, four were uncontrolled, non-randomised tests of various interventions designed to enhance compassion or empathy (Blanco et al., 2013; Fortney et al., 2013; Kalish et al., 2011; Riess et al., 2012; Shih et al., 2013). Though these studies demonstrated positive effects on burnout, compassionate care, and clinical decision making, important issues of self-selection, confounding variables and self-reporting, cloud the validity of the conclusions. One experimental study that stood out because it was the only randomised controlled trial on compassion in medicine, investigated empathy training of junior doctors where blinded patients rated the doctors' empathy and care (Riess et al., 2012). The training involved awareness of emotions during difficult patient interactions, improving skills in decoding subtle facial expressions of patient emotions, empathic communication skills and mindfulness practices (Riess et al., 2012). Though promising in terms of enhancing compassion, these studies have focused mainly on the variable of the doctor or medical student and did not consider effects of the clinical environment and types of patients in the compassion equation.

Ironically, *compassion fatigue*, a type of professional burnout that affects those in the helping professions, has been far more extensively studied than actual compassion (Dasan et al., 2015; Gleichgerrcht & Decety, 2013, 2014; Goodman & Schorling, 2012; Huggard & Dixon, 2011; Krasner et al., 2009; Lee, Stewart, & Brown, 2008; S. Lloyd, Streiner, & Shannon, 1994; Markwell & Wainer, 2009; Peckham, 2013; Shanafelt et al., 2009; Shanafelt et al., 2002; Shanafelt et al., 2005; Woodside, Miller, Floyd, McGowen, & Pfortmiller, 2008; Zare et al., 2005). In the context of studies of compassion, the study of compassion fatigue is important in that it highlights what seems to be an epidemic of burnout among doctors and other health professionals (Abendroth & Flannery, 2006; Benson, Sammour, Neuhaus,

Findlay, & Hill, 2009; Bodenheimer & Sinsky, 2014; Craig & Sprang, 2010; Dasan et al., 2015; Gabbe, Melville, Mandel, & Walker, 2002; Hooper et al., 2010; Huggard & Dixon, 2011; S. Lloyd et al., 1994; Markwell & Wainer, 2009; Peckham, 2013; Shanafelt et al., 2009; Shanafelt et al., 2002; Sprang et al., 2007; Woodside et al., 2008). In addition to affecting clinicians themselves, fatigue and burnout are thought to have flow-on effects in patient care, staff retention difficulties, and increasing health care costs (Bodenheimer & Sinsky, 2014). Conceptually, however, compassion fatigue is an end state and treating it is akin to the proverbial ambulance at the bottom of the cliff. More to the point in terms of the current thesis, focusing on compassion fatigue does not illuminate how to prevent it or, more importantly, how we might seek to enhance medical compassion. These issues are discussed more fully below and also in Chapter 4.

Distinct from compassion fatigue research is a small body of recent work investigating *compassion satisfaction* in healthcare. Compassion satisfaction is an experience that has been defined as the positive aspect of caring that balances the negative aspects of working with very ill patients (Hooper et al., 2010; Stamm, 2002) or, more simply, as the positive aspect(s) of providing care (Sreenivas, Wiechmann, Anderson, Chakravarthy, & Menchine, 2010) or gratification from caregiving (Simon, Pryce, Roff, & Klemmack, 2006). As might be expected, compassion satisfaction is associated with feeling good or satisfied when providing care (Sprang et al., 2007) and is strongly linked with empathic concern, perspective taking, and altruism (Gleichgerrcht & Decety, 2014) as well as better coping and team cohesiveness (Dasan et al., 2015). Interestingly, despite being fatigued, doctors can still experience compassion satisfaction (Sreenivas et al., 2010). Overall, however, research of this type is uncommon and relatively recent; the overwhelming preponderance of research examining compassion in medicine has looked at it through the lens of compassion fatigue.

Developing a Broader View of the Origins and Determinants of Medical Compassion

To summarise, the current chapter has briefly reviewed the diverse empirical studies on the known predictors of compassion as it occurs in both medical and non-medical contexts. Yet despite medical compassion being essentially similar to non-medical compassion in terms of its basic inputs, the nervous system circuitries involved, and the psychological factors likely to influence its operations, medical compassion has been studied in limited and, potentially, myopic ways. In the view put forth here, a more systematic investigation of medical compassion requires an approach that not only incorporates the doctor's subjective experience of compassion but also the types of patient and the environment where the interaction takes place. More fully, while research examining compassion in non-medical contexts has investigated compassion as dynamic, conditional, requiring a safe environment, and influenced by variables intrinsic and extrinsic to the helper, research into medical compassion has not. That said, there is no reason to suspect that a similarly systemic perspective on compassion in medical contexts would not also provide a more comprehensive paradigm within which to investigate medical compassion. In the following chapter, the focus of investigation is moved from the doctor as the sole agent for the genesis of medical compassion to include the examination of factors related to patients, clinical factors, and the institutional context.

Chapter 4 – The Transactional Model of Physician Compassion

Preface

In the preceding two chapters, compassion was characterised in general terms and differentiated from empathy. The importance of compassion in medicine, the topic of this thesis, was then discussed. In medical settings, compassion is an expectation by patients, regulatory bodies, and the doctors themselves and has been associated with better patient health outcomes. Importantly, in terms of developing ways to enhance compassion, early work suggests that compassion can be enhanced as a result of training programmes.

In the view put forth thus far, compassion in medicine is essentially similar to compassion outside of the medical context. Compassion in both contexts relies on the same evolved architecture and processes. This core similarity noted, there are nonetheless specific contextual features that may impact the emergence of medical compassion. In medicine, compassion is more than an expectation; compassion is mandated. The frequency with which compassion is expected is greater than that evident in the non-medical environment. Indeed, in non-medical contexts, evidence is increasingly suggesting that the emergence of compassion is conditional, insofar as it is more commonly expressed towards people who are genetically close (Burnstein et al., 1994), that we feel connected to (Cialdini et al., 1997) or whom we view as similar to ourselves (Goetz et al., 2010). By contrast, compassion in medicine is expected even where the patient is annoying or difficult.

In providing an empirical basis for thinking more broadly about compassion in medicine, the previous chapter reviewed the scientific literature on the general predictors of compassion in non-medical contexts. This evidence suggests that compassion is influenced by a range of factors, notably the fact that prospective helpers consciously or unconsciously

evaluate the sufferer. Compassion also tends to take place in situations that are perceived as safe, where external and internal threats are diminished.

Sadly, the scientific research on compassion in medicine appears myopic in that it has focused on compassion fatigue, with scant research on compassion in medicine itself. In contrast, the body of work on compassion outside of medicine has cast its net wide, investigating the characteristics of both the helper and the sufferer, the environment where the interaction takes place, and the psychological interventions that may enhance compassion. This vibrant, multidimensional approach diverges from the one-dimensional, doctor-centric focus of most medical compassion research, neglecting factors associated both with the sufferer and the context in which medical interactions occurs.

In contributing to work in this area, the following three chapters of the thesis will present a novel way of conceptualising, assessing, and characterising compassion and the barriers to it in medicine. In laying the groundwork for this thesis, a new theoretical model of compassion in medicine is presented in this chapter which is based on a published article that organises and highlights the range of possible influences on medical compassion, rather than focusing on the doctor (or compassion fatigue) alone and thus broadens the research and conceptual focus to place medical compassion in its context.

Citation

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Existing Conceptualisations of Compassion

Physicians are expected to practice medicine compassionately. Indeed, as part of their professional practice statements, professional and medical regulatory bodies in most Western

countries stipulate that physicians must practice medicine compassionately (American Medical Association, 2016; New Zealand Medical Association, 2014). Equally, patients and consumers anticipate compassionate caring from their medical professionals (Emanuel & Dubler, 1995; L. A. Fogarty, Curbow, Wingard, McDonnell, & Somerfield, 1999; Meagher, 2006; Old et al., 2011; Wiggins, Coker, & Hicks, 2009). Compassionate caring is associated with greater patient satisfaction, better doctor-patient relationships, and improved psychological states among patients (L. A. Fogarty et al., 1999). Although compassion is central to the professional practice of medicine, it remains understudied; there are a considerably larger number of studies on empathy (Lelorain, Brédart, Dolbeault, & Sultan, 2012; Stepien & Baernstein, 2006) and compassion fatigue (Abendroth & Flannery, 2006; Adams, Boscarino, & Figley, 2006; Bride, Radey, & Figley, 2007; Coetzee & Klopper, 2010; Figley, 1995; Hooper et al., 2010; Huggard, 2003; Lynch & Lobo, 2012; Markwell & Wainer, 2009; Najjar, Davis, Beck-Coon, & Carney Doebbeling, 2009; Showalter, 2010; Sprang et al., 2007) than there are on compassion itself.

This article briefly reviews and critiques existing conceptualisations of compassion among physicians before outlining the Transactional Model of Physician Compassion in which physician, patient and family, clinical situation, and environmental factors interact to influence physician compassion.

In explicating this position more fully, it is first worth noting that compassion is distinct from empathy (Fehr, Sprecher, & Underwood, 2008; Sprecher & Fehr, 2005). By definition, the term “empathy” is generally used to refer to the cognitive and or emotional processes in which the perspective of the other (a patient) is taken (Engelen & Röttger-Rössler, 2012). In contrast, compassion involves or necessitates empathy, but includes the additional step of wanting to help and/or desiring to relieve the suffering of others (Goetz et al., 2010; Klimecki

et al., 2013). Linguistically, the term compassion is derived from the Latin roots *com* which means "together with" and *pati* which is "to bear or suffer" (Dougherty & Purtilo, 1995). Recent empirical studies indicate that the neural substrates of empathy and compassion are distinct (Fehr et al., 2008) and conceptual reviews likewise support the distinction (Batson, 2009).

More than just a duty and requirement for medical practice, the capacity for compassion appears to be hardwired among humans and higher mammals. Compassion-like and altruistic behaviours have been observed in several species (Bekoff & Goodall, 2008; De Waal, 2010) and caregiving towards the vulnerable and wounded is evident among chimpanzees and bonobos (De Waal, 1996). In controlled settings, young chimpanzees and human toddlers tend to help humans who "accidentally" dropped objects in the absence of no obvious benefit or reward (Warneken & Tomasello, 2006). Anecdotally, media are replete with stories of spontaneous assistance from strangers who risk their lives to save unrelated people and animals. Taken together, such data imply that, rather than being a phenomenon that is specific to medical settings, compassion in medical contexts is more likely a specific instantiation of a complex adaptive system that evolved to motivate recognition and assistance when others are suffering.

Compassion Fatigue – a Compassionate Critique

Paradoxically, despite being central to the practice of good medicine, the bulk of the studies on compassion across the past two decades have been focused not on compassion, but on the phenomenon of compassion fatigue (Abendroth & Flannery, 2006; Adams et al., 2006; Bride et al., 2007; Coetzee & Klopper, 2010; Figley, 1995; Hooper et al., 2010; Huggard, 2003; Lynch & Lobo, 2012; Markwell & Wainer, 2009; Najjar et al., 2009; Showalter, 2010; Sprang et al., 2007). The term was coined by Joinson in 1992 while studying nurses who

were burned out in emergency rooms. Compassion fatigue is a specific type of burnout that follows exposure to patient trauma and suffering (Adams et al., 2006) and manifests in significant emotional, behavioural and cognitive changes in the clinician (Bride et al., 2007). Though initially described in ER nurses (Joinson, 1992), compassion fatigue has since been studied in many clinical groups (Abendroth & Flannery, 2006; Adams et al., 2006; Bride et al., 2007; Coetzee & Klopper, 2010; Hooper et al., 2010; Lynch & Lobo, 2012; Sprang et al., 2007). Oddly, despite being mentioned together with burnout as a common phenomenon among health workers, there are few prevalence studies on compassion fatigue (Najjar et al., 2009; Sprang et al., 2007) with only two studies among doctors (Huggard & Dixon, 2011; Markwell & Wainer, 2009).

Although compassion *per se* is markedly absent from such research, greater study of compassion fatigue has been important in that it has highlighted burnout and emotional exhaustion among doctors and some of the outcomes that may accompany them – reduction in empathy and compassion, reduced satisfaction in clinical work, poor clinical judgment, apathy in care, lack of energy and even emotional breakdown (Bride et al., 2007; Coetzee & Klopper, 2010), poorer quality of care, higher patient dissatisfaction, and increased medical errors all of which are thought to accompany compassion fatigue (Crane, 1998; Haas et al., 2000; Shanafelt et al., 2005). At an institutional level, organisations also bear the costs of physician fatigue via the negative effects on manpower and lost productivity (Williams et al., 2001).

As noted, however, despite being an important and very real phenomenon, an increasing focus on compassion fatigue appears to have led to a paradoxical neglect of compassion itself.

Furthermore, the term and concept have several limitations, tending to guide research in particular directions. In the following sections, we briefly consider some of the issues confronting compassion fatigue research more fully before offering a supplementary conceptualisation of the origins and barriers to compassion in medical practice.

Other writers have noted that the term compassion fatigue is problematic (Figley, 1995) and is often confused with burnout, secondary trauma and vicarious traumatisation (Bride et al., 2007; Coetzee & Klopper, 2010; Figley, 1995; Najjar et al., 2009). According to some, the definition requires secondary traumatisation (Adams et al., 2006) which limits its relevance to physicians who may struggle to remain compassionate but who are not normatively exposed to trauma in their work. Compounding these problems are additional issues with the term itself. To remark that physicians are compassion fatigued tends to imply that doctors have a finite reservoir of compassion which dries up or becomes depleted through use or overuse. Such an approach implies that compassion fatigue (and related outcomes) should be more common with age. Perplexingly then, and acknowledging that little is known about the link between compassion fatigue and age, studies show an inverse relationship between age and physician burnout (S. Lloyd et al., 1994; McCray, Cronholm, Bogner, Gallo, & Neill, 2008; Shanafelt et al., 2009; Woodside et al., 2008).

Although it may be that physicians become less empathetic with time and are thus less burdened by patient suffering, it also may be that compassion is not being depleted. Rather, experience and age may allow doctors to develop better self-management leading to lower burnout and/or to find ways to replenish the resources that are used in their clinical work.

More broadly, the term compassion fatigue tends to imply that being compassionate is necessarily tiring when, in fact, recent research suggests that compassionate approaches are pleasurable, increase social connections, decrease the focus on oneself, and may buffer

against stress (Seppala, 2013). Admittedly, researchers are not unaware of the problems with terminology and definition and there have been several suggestions regarding changes (Klimecki & Singer, 2011).

Beyond issues with terminology and definition, it is our suggestion that the term compassion fatigue describes a possible "endpoint" in the trajectory of caring for patients over time. It is, moreover, an outcome that does little to illuminate putative aetiologies or the roots of its development. Without insight into the variables responsible for its genesis and progression, potential interventions to mitigate compassion fatigue will be inevitably ill informed; an exclusive focus on compassion fatigue is similar to providing an "ambulance at the bottom of the cliff".

Finally, and as we expand upon below, a key part of the problem associated with the compassion fatigue construct reflects its near-monolithic focus on the physician as the primary or sole variable in its genesis. As it is currently studied, the compassion fatigue construct has tended to imply that physician characteristics (e.g., experience, training, age, dispositions) are the primary influence on a finite compassion reservoir which becomes progressively fatigued or depleted in the course of their professional duties. However, while such a conceptualisation is parsimonious and clearly reflects aspects of the lived clinical experience – being compassionate *can* be tiring – it neglects the fundamentally dynamic and transactional nature of compassion and the multiple physician, situation, patient and institutional factors that may be involved in the enhancement and/or mitigation of compassion in clinical care. Below, we present an alternate view of compassion and compassion fatigue in which the expression of compassion and the development of fatigue are viewed as endpoints in a dynamic process at the intersection of physician, patient, clinical, and institutional influences.

A Transactional Model of Physician Compassion

Transactional relationships. In contrast to the model offered by compassion fatigue research, the Transactional Model suggests that the question of whether a physician will behave compassionately in any given instance reflects the dynamic influences of physician, patient, clinical, and institutional factors. In this view, compassion is not only a function of physician characteristics but reflects the physician in a transactional relationship with their patient, the clinical picture, and the institutional setting. The transactional model shares similarities with Engel's (1980) biopsychosocial model where a phenomenon does not exist in isolation and instead is a product of multiple variables or forces in a system. In Engel's model, for example, a disease is a result not only of an anomalous biological process but is strongly influenced by the patient's psychological state and environment.

Transactional approaches normatively emphasise the dynamic interplay of both person and environmental variables in explaining behaviour. They are widely used in the study of several phenomena that have similarities with (and relevance to) compassion in medicine, including emotions (Lazarus & Folkman, 1987; Seybolt, 1976), stress (Edwards & Rothbard, 1999; Ivancevich & Matteson, 1984), decision making (Buss, 1984; Spokane, 1985), role performance (Kieffer, Schinka, & Curtiss, 2004; Spano, Vazsonyi, & Bolland, 2009) and psychopathology (Rutter et al., 1997; Van Os, Driessen, Gunther, & Delespaul, 2000). As applied to the issue of physician compassion (Fig. 4.1), the Transactional Model of Physician Compassion positions the physician as the person variable, with the patient being treated, the patient's family, clinical situation, physical environment and concurrent institutional demands defining the relevant aspects of the environment. Though these variables are not truly separable or independent in transactional thinking, we discuss them in turn.

Figure 4.1. The Transactional Model of Physician Compassion.

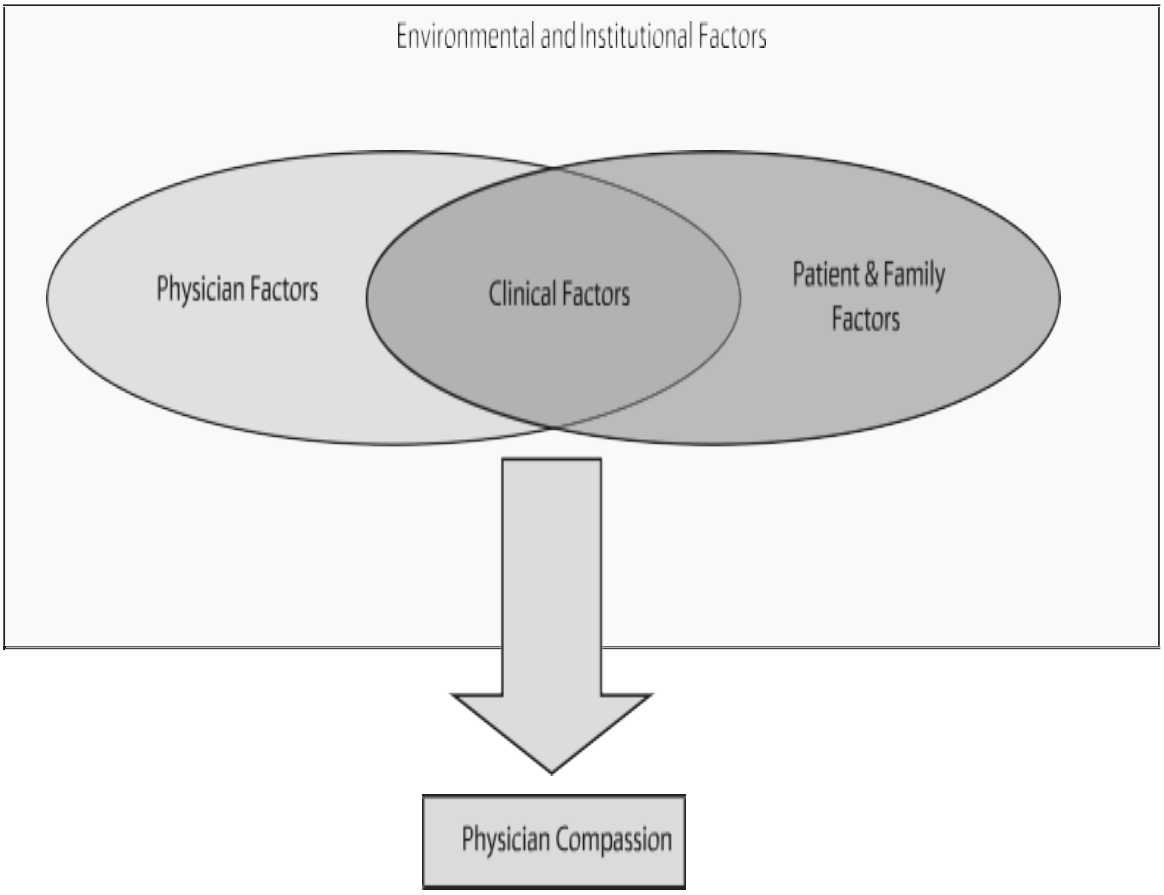


Figure 4.1. The factors comprising the Transactional Model.

Physician factors. A physician's ability to empathise and connect with a patient is necessary to a compassionate response. However, compassion is more complex than being a mere disposition and even with a given physician, multiple factors may impact the extent to which they are compassionate. For example, female doctors generally have higher levels of empathy (Eisenberg & Lennon, 1983; Hojat et al., 2002) and, although it has yet to be empirically demonstrated, may also be more compassionate. Conversely, fatigued or burned out doctors have fewer emotional resources to connect and consequently will find it more difficult to care (Linzer et al., 2002). More broadly, compassion in medicine practice is likely

impacted by the physician's personality (e.g., overly critical, judgmental versus open, tolerant, and patient) (Steinmetz & Tabenkin, 2001), baseline level of trait or dispositional compassion (Fehr et al., 2008), the magnitude and nature of their past clinical experiences, and communication skills (Butler & Evans, 1999). The suggestion that multiple variables are implicated in physician compassion is consistent with recent models of compassion in other areas such as carer's compassion (Halifax, 2012) which conceptualises an individual's compassionate response as involving multiple intrapersonal components.

Variation in the physician factors relevant to compassion means that, given the same clinical situation (e.g., a young depressed teenager in the emergency room presenting with a recent overdose), different physicians will differently evaluate the patient and consequently have varyingly compassionate (or non-compassionate) responses. A tired and stressed emergency physician might view the patient as just another "case" needing processing and referral to the psychiatry services to facilitate an opening up of a precious emergency room bed. Conversely, a recently-graduated junior doctor who has had their own struggles with depression might have a more caring approach; one doctor's description of a difficult patient will be different from another's (Steinmetz & Tabenkin, 2001). A physician's personal history, individualised appraisal of the clinical situation, tendency to judge or blame, sensitivity to suffering, ability, motivation and resources are important factors likely to influence whether compassion emerges in the physician response.

Patient and family factors. In contrast to the view implied within compassion fatigue research, the transactional model suggests that characteristics of the patient and the patient's family are important variables influencing physician compassion. Although physicians may strive to be compassionate with all patients, this is easier with some than with others. A kind and grateful patient who follows treatment recommendations without fault easily stimulates a

doctor's desire to care. Equally, family members who are appreciative and show indebtedness to the physician also promote feelings of tenderness and goodwill which enhances the doctor's desire to help. Conversely, rude, ungrateful, hostile, repetitive complainers and patients exploiting the health system generate stress (Lee et al., 2008; Wilson, 2005), anger (Steinmetz & Tabenkin, 2001), and resentment from doctors. Such responses almost certainly interfere with feelings of connectedness and compassion. Patients, who are "likeable and deserving of care" (e.g., a five year old boy with leukaemia), likely generate more compassion than seen in response to a help-rejecting, conceited, "know it all" somatiser. Non-compliant patients are sometimes seen as aberrant (Wright, 1993) and not worthy of care as they undermine the doctor's sense of control over their condition (Trostle, 1988). Similarly, a physician's compassion may be negatively impacted by expectations that they will manage the "social" aspects of patient care (e.g., need for housing, post discharge home care, or work rehabilitation). Although these factors are crucial in a patient's recovery and improved quality of life, some physicians may consider them to fall outside their single organ focus which can result in irritable, impatient, and non-compassionate engagement.

Clinical factors. Closely related to patient factors are aspects of the clinical picture. Clinical features including alcoholism, drug use, obesity, dependent personality (Steinmetz & Tabenkin, 2001), somatisation and chronic pain (Wilson, 2005) are likely a challenge to the physician's capacity to respond compassionately. Of particular note are instances where symptoms or a diagnosis are (rightly or wrongly) seen as stemming from the patient's unhealthy behaviour or are otherwise deserved (e.g., liver cancer from chronic alcoholism, lung cancer from unmitigated smoking, suicidal depression in a paedophile or recurrent sexually transmitted disease from promiscuity or prostitution). In cases in which the patient is consciously or unconsciously deemed "responsible", a compassionate response is less likely

to be forthcoming. In extreme cases, there may be some sense that the patient does not deserve compassion (Goetz et al., 2010) and instead "deserves" the malady as a punishment or bad karma.

Another clinical factor that likely interferes with physician compassion is the *complexity* of the patient's clinical situation. Clinical complexity can include patients who do not follow an expected clinical course, patients with complex comorbidities, or patients who develop unexpected and unexplainable side effects. In complex situations, a physician's ability to tolerate ambiguity and self-manage their cognitive and emotional resources is challenged. When confronted with complexity and threat, physicians are likely to shift from more balanced diagnostic-caring modes to more exclusively analytical and detached mind states. When patients do not improve and or develop complications, physicians may become anxious and stressed, or worse, even blame the patient or the family for not following a treatment plan. Stress, anxiety, and threat stemming from clinical uncertainty almost certainly interfere with physician compassion.

Physician specialisation is a variable that may have effects on a doctor's compassion. In addition to the fact that certain personalities are differentially likely to self-select into particular specialties, different fields normatively involve exposure to distinct patient and clinical profiles. Specialties such as oncology, palliative medicine and psychiatry, in which profound human pain and suffering are dealt with and explored at length might promote and even encourage a more compassionate response. Such specialties can be contrasted with a busy emergency medicine doctor, who has limited time for consultations and is pressured to make quick decisions involving life/ death and bed pressure. In such specialties, the combination of dispositional tendencies, the nature of the normative presenting problems, and the institutional ''role'' of physicians may encourage or even necessitate adopting more

analytical and problem-solving modes. Indeed, the simple fact that physicians are required to make very rapid decisions in situations in which lives are at stake may lead to either the perception (or the reality) of less time with patients and the physician being seen as cold, detached, or uncaring. Clinical contexts are clearly central to whether physicians are (and are seen as) compassionate.

Environmental and institutional factors. Finally, the physical environment and institutional contexts in which consultations take place can clearly affect physician compassion. Practicing physicians will be aware that it is more difficult to be (or remain) compassionate when the clinical interaction takes place in a busy, open ward where there is no privacy, where other staff interrupt the consultation, or where pagers and patient monitoring devices are intermittently going off. Repeated interruptions can lead to a physician feeling "under siege," both from the number of patients that need to be seen as well as from the institutional pressure to discharge patients to open up precious but limited beds (Linzer et al., 2002) . Compounding these demands is the fact that physicians are expected to systematically document clinical interactions, teach junior doctors and medical students, and fulfil administrative demands including justifying clinical care to insurance companies. Feeling that one lacks control in the workplace can cause stress among physicians (Linzer et al., 2002) and environmental and institutional factors of this kind appear similarly likely to inhibit compassion. In litigious environments (Lee et al., 2008), the threat of lawsuits hangs over each doctor's neck. In a toxic practice milieu, a doctor can shift from a state of wanting to connect and relieve patients' suffering to that of being threatened or blinkered, and caring more strongly about the management of their own anxiety.

Implications from the Transactional Model of Physician Compassion

Conceptualising compassion from a transactional perspective involving several interrelated yet potentially modifiable variables allows for targeted interventions to promote compassion and reduce the barriers that impede it. As mentioned, there is a dearth of research on the factors that may facilitate or deter compassion among physicians as studies have focused on assessing an outcome variable – compassion fatigue. Before we can develop interventional studies, valid and reliable measures of both physician compassion as well as the factors that inhibit or promote compassion are sorely needed. The Transactional Model contains several implications for the development of interventions among physicians and patients as well as for medical education and on-going professional development among physicians.

Intervention. As the main agent for compassion, the physician is the first logical target for intervention. Potential areas for physician intervention include education on the nature of compassion, as well as on the benefits the doctor, the patient, and their families can derive from compassionate clinical care. In time pressured environments, physicians often appear to feel as if a "trade-off" between clinical tasks and the "soft bits" must be made. Helping physicians to understand that rather than merely being a consumer preference, compassion is central to their ability to relate to their patients and thence effectively conduct their clinical duties. Similarly, providing physicians with basic knowledge regarding the promoters and inhibitors of compassion can inform both better self-management (e.g., working out when their own compassion drops) as well as better management of the work and institutional environments. Another area of physician intervention lies in training doctors how to manage their expectations of patient behaviour and outcomes. In particular, doctors have to learn how to tolerate clinical ambiguity and uncertainty (Novack, 1987) without

becoming non-compassionate. Acceptance of the wide panoply of patient characteristics, (e.g., likeable or not) and disease course outcomes may help limit physician frustration and anxiety.

Several intervention studies have been shown to increase empathy and compassion directed toward the self and others. A landmark study of primary care physicians undergoing an intense eight-week programme on mindfulness meditation, self-awareness, and communication found sustained improvements in physician empathy (Krasner et al., 2009). Work in other samples is also promising. An eight-week compassion meditation training protocol resulted in participants being more likely to aid a "sufferer" compared to a waitlist control (Condon et al., 2013). A two-week compassion training protocol promoted greater altruistic behaviour (H. Y. Weng et al., 2013).

Training programmes. Compassion cultivation training programs promote improvements in compassion for others, receiving compassion from others, and self-compassion (Jazaieri et al., 2013) and mindfulness-based interventions show comparable effects (Neff & Germer, 2013). Many of the compassion intervention protocols involve training in mindfulness and Buddhist-informed compassion meditation exercises. Developing a state of mindfulness may allow health care professionals to more effectively self-regulate one's emotion, remaining balanced and focused on the present despite interpersonal, clinical, and institutional challenges. Compassion training enhances a practitioner's ability to 1) be aware of others' suffering 2) develop concern for others 3) wish to relieve that suffering and 4) be ready to relieve that suffering (Jazaieri et al., 2013). Within the Transactional Model, such interventions primarily target physician variables, enhancing the doctor's ability to remain resilient and connected with patients.

As the recipient of compassion, patients and families can influence the expression of care from the doctor. Interventions directed towards patients' communication styles (Jazaieri et al., 2013) and relationship enhancement with their doctor can make the rapport smoother. Potential areas of patient training include ways to communicate effectively and the creation of realistic expectations regarding both clinical outcomes and a doctor's ability to effect change. Although it will be hard to practice in the midst of a medical crisis, helping patients to see situations from the perspective of the medical professional may enhance the relationship, lead to physicians feeling less pressured and thus more able to be compassionate.

From a work environment perspective, limiting unnecessary interruptions during the consultation and providing adequate privacy to allow better communication and rapport development may enhance relationships and thus physician compassion. Institutional interventions might include provision of adequate protected time for patient and family contact as oftentimes the demands for administrative, documentary obligations and teaching clash with delivery of actual care. From a relational perspective, work environments should encourage togetherness, collegiality, and mutual support among different disciplines and within the medical hierarchy instead of promulgating an atmosphere of rigid pecking order and a culture of bullying (Youngson, 2011). Despite limitations in resources, compassion can flourish if institutions endorse and embolden whole-person care of patients and their families, and also doctors.

Concluding Remarks

Compassion is a central and necessary aspect in the effective delivery of medical care. It is a professional requirement for physicians, is desired by patients, and, although research is preliminary, appears likely to benefit patient and clinical outcomes. To this point, however,

research has primarily focused on compassion fatigue, a concept that is useful insofar as it highlights a very real phenomenon among physicians but has serious limitations and fails to illuminate interventions. We have suggested that the scientific study of compassion in medicine may be enhanced when conducted within a transactional framework in which compassion is viewed as stemming from the dynamic interactions between the physician, patient, clinical, and institution/environment factors. The Transactional Model of Physician Compassion offers a framework within which to identify and organise the barriers and facilitators of physician compassion and thus better inform future interventions targeting the doctor and the environment to enhance physician compassion.

Chapter 5 – Development and Initial Psychometric Properties of the Barriers to Physician Compassion Questionnaire

Preface

In the previous chapter, it was argued that physician compassion arises not only from the doctor but also as a function of dynamic but interrelated variables outside the doctor. Termed a "transactional model," the perspective that was offered differs substantively from past views with a near-unitary emphasis on compassion fatigue, implying that the absence of compassion was mainly because of the doctor. Although this idea (which permeates much of the work on medical compassion) has been helpful in highlighting the problem of lack of compassion, it has not proven useful in identifying the specific factors that might be modulated to enhance compassion.

The Transactional Model of Physician Compassion offers an alternative and macroscopic view of compassion as multifactorial and emerging from processes that include those beyond the physician. Other factors including the type and characteristics of patients seen, patient families, the clinical situation, the environment where interactions take place are all hypothesised to influence the emergence (or non-emergence) of physician compassion. Doctors, as social animals, are not automatons that can be programmed to be comparably compassionate in all situations.

However, although the Transactional Model of Physician Compassion seems logical, inclusive and appears to be valid, the factors it implies that would influence physician compassion need to be *measurable* for the model to be of greatest use. There are two reasons suggesting that the development of a measure assessing aspects of the Transactional Model would be of use.

First, the development of a measure would enable researchers to preliminarily test the validity of the model itself by identifying and operationalising the factors that physician's

report as interfering with their compassion. A "barriers" measure of this kind can then be used to help identify specific barriers to compassion in medicine, paving the way for subsequent experimental studies and/or interventions designed to reduce the presence or impact of barriers. Second, a questionnaire or measurement tool of this kind would permit the examination of subsidiary questions such as "are the barriers to physician compassion linked to physician experience or to the type of medicine doctors practice?"

In the following sections, a published empirical article outlining the development of a measure assessing the barriers to compassion in a large sample of physicians is presented.

Citation

Fernando, A. T. & Consedine, N. S. (2014b). Development and preliminary validation of the Barriers to Physician Compassion Questionnaire. *Postgraduate Medical Journal, 90,* 388-395. doi:10.1136/postgradmedj-2013-132127

Introduction

Professional guidelines in healthcare contexts across the world emphasise the need for physicians to practice medicine with compassion. The first principle of medical ethics in the American Medical Association's (AMA) guidelines, for example, states that: "A physician shall be dedicated to providing competent medical care, with *compassion* and respect for human dignity and rights (American Medical Association, 2016). Globally, comparable sentiments are reflected in most codes of ethics for healthcare professionals (New Zealand Medical Association). Compassion is increasingly seen as a duty in physician-patient relationships (Dougherty & Purtilo, 1995).

More important than this professional and legal mandate is the fact that patients expect that they will be listened to, understood, and cared for by their doctors. In many instances, patients are mentally or physically suffering and want to be relieved of their ailment or discomfort. Patients can feel helpless, vulnerable and, for the first time as adults,

may have to depend on others to survive. Many become physically and psychologically isolated by their illness. Some have to deal with the prospect of imminent death and leaving their families behind. Unsurprisingly, patients expect their doctor to be compassionate (Emanuel & Dubler, 1995; L. A. Fogarty et al., 1999; Meagher, 2006; Old et al., 2011; Wiggins et al., 2009). In addition to fulfilling a professional duty, research is increasingly suggesting that physician compassion is associated with better outcomes including patient satisfaction, better quality doctor-patient interactions, and improved long term adjustment (L. A. Fogarty et al., 1999). Considering how central compassion is to professional ethics and patient wishes, there are few studies on the subject. There are more studies examining empathy (an aspect of compassion) with patient outcomes (Lelorain et al., 2012; Stepien & Baernstein, 2006).

While compassion is often confused with empathy, the terms are distinct. Linguistically, the term compassion is derived from the Latin words *com* which means "together with" and *pati* which is "to bear or suffer" (Dougherty & Purtilo, 1995). According to some (Dougherty & Purtilo, 1995), the two key elements of compassion are: 1) An ability and willingness to enter into another's situation deeply enough to gain knowledge of the person's experience of suffering; and 2) The desire to alleviate the person's suffering or, if that is not possible, to be of support by living through it vicariously.

Conversely, empathy is the cognitive and/or emotional perspective taking of the experience of the patient (Engelen & Röttger-Rössler, 2012). Empathy is necessary to be compassionate, but one can be empathetic without being compassionate. A busy doctor in an ER can appreciate the stomach ache of a patient (empathy) but might choose to ignore it while rushing to a much delayed lunch break. The physician empathised with the patient briefly but did not act with compassion. So while both compassion and empathy involve

appreciating another's experience, compassion is distinct insofar as it is accompanied by the desire to alleviate suffering (Goetz et al., 2010).

Though practicing compassionately is expected, and benefits patients (Canale et al., 2012; Klimecki et al., 2013) and doctors (Fredrickson et al., 2008; Klimecki et al., 2013; Pace et al., 2009), remaining compassionate over time is difficult. Compassion is not a simple behaviour that can just be "turned on" because it is expected. As a prosocial behaviour, the expression of compassion results from a complex interplay of multiple variables involving the individual (e.g., personality type), the specific situation, and the environment where the compassionate act takes place (Penner, Dovidio, Piliavin, & Schroeder, 2005; Zimbardo, 2008). Because of this complexity, compassion can be easily disrupted (Gilbert et al., 2012; Gilbert, McEwan, Matos, & Rivis, 2011).

The current literature on compassion in medicine unfortunately has not examined this complexity or considered *specific* barriers to compassion. Instead, most studies have concentrated on compassion fatigue (Huggard, 2003; Najjar et al., 2009; Showalter, 2010), a phenomenon that impacts between 20% and 70% of physicians (McCray et al., 2008). However, while physician psychological issues, the shift to a business/profit model of medicine, and chronic stress can also affect physician compassion (Huggard, 2003; Showalter, 2010), the systematic empirical study of barriers has been absent. This absence noted, theoretical and qualitative works on possible barriers to a related construct – empathy – are available. Factors implicated as barriers to empathy include stress, time pressure, and anxiety (Baillie, 1996; Banja, 2006; Burdi & Baker, 1999; Coulehan & Williams, 2001; Halpern, 2003; Hojat, 2007). Such factors may also interfere with physician compassion as may aspects of the patient, clinical context, and work environment (Crawford, Gilbert, Gilbert, Gale, & Harvey, 2013; A. T. Fernando & Consedine, 2014a). In addition, medical

training itself has been posited as a barrier to empathy because empathy is occasionally seen as a threat to accurate diagnosis and objective management (Hojat et al., 2009).

In extending current understanding in this critical area, the current report documents the factors that physicians experience as barriers to being compassionate in clinical contexts. Specifically, this report aimed to develop and report the psychometric properties (questionnaire internal structure and convergent/ divergent validation) of a newly developed physician self-report questionnaire on barriers to compassion. Based on a recent theoretical work on barriers to compassion (A. T. Fernando & Consedine, 2014a), we expect that physicians would report factors beyond stress and fatigue as interfering with their ability to be compassionate.

Methods

Participants. Practicing medical practitioners were recruited across 30 days in November and December of 2011, by non-random convenience sampling via, a) lecture series conducted by the first author at medical conventions and grand rounds and, b) personal contacts and referrals in hospitals in the Philippines. The inclusion criteria were 1) that the doctor was currently practicing medicine in the Philippines and 2) could speak and write in English. An exclusion criterion excluded doctors who did not have any patient contact. Participants recruited via lectures were informed prior to lectures that a questionnaire would be distributed, that participation was voluntary, and that returning questionnaires implied consent. Completed questionnaires were collected after the sessions and lectures. Completing participants were offered a $NZ3 gift in the form of a New Zealand souvenir (stuffed toy or chocolate).

Questionnaires. To help establish preliminary discriminant and convergent validity for the components uncovered in analyses of the Barriers to Physician Compassion (BPC) questionnaire, we administered five additional questionnaires. Although the absence of prior

work constrained confidence, we expected that barrier scores would be lower among female physicians, negatively associated with trait compassion and lower among those reporting greater non-governmental organisation (NGO)/volunteer work. Equally, greater stress, higher patient loads and a more external locus of control should predict greater barrier scores.

Demographics and Medical Education. A questionnaire elicited information regarding age, sex, country of birth, year graduated from medical school, and country where medical education was obtained.

Clinical Practice**.** We assessed 10 aspects of clinical practice which may be relevant to compassion. The items included specialisation, duration of practice, average patient load per week, average duration of consultations (minutes), practice setting information, sources of income, and a subjective assessment of total work load.

Perceived Stress. Physician stress can negatively impact the ability to practice with compassion (Firth-Cozens, 2001), so the Perceived Stress Scale (PSS) was included (Cohen, Kamarck, & Mermelstein, 1983). The 14 item PSS is an established short measure of perceived stress and assesses the extent to which situations are experienced as being stressful, unpredictable, and overloading. The frequency of thoughts and feelings across the past month are rated using a 0 (never) to 4 (very often) metric. The PSS is highly reliable (Cronbach's alpha of .84, .85 and .86 in three initial samples) and widely used in studies of physician stress (Williams et al., 2002; Zare et al., 2005). The reliability in the current sample was adequate ($\alpha = .78$).

Work Locus of Control Scale. We included the Work Locus of Control Scale (WLCS) (Spector, 1988) because barriers to compassion likely include both internal and external locus of control factors (Wiehe, 1987). The WLCS is a 16-item scale on which participants use a 1 (disagree very much) to 6 (agree very much) metric. The scale has been extensively used in studies of health professionals (Blau, Tatum, Ward-Cook, Dobria, & McCoy, 2005; Franco,

Bennett, Kanfer, & Stubblebine, 2004) with reliability estimates in the .75 to .85 range. Reliability in the current sample was α = .82.

Compassionate Love Scale (Stranger/Humanity version). An abridged version (Stranger/ Humanity) of the Compassion Love Scale was included (Sprecher & Fehr, 2005). We administered the Stranger/Humanity version rather than the full version of this scale because of our focus on physician's interactions with their patients. To minimise participant burden, we selected the 8 items (from the original 21) with highest item-to-total correlation (> than .7). Items consisted of different manifestations of compassion towards strangers scored from 1 (not at all true of me) to 7 (very true of me). The Cronbach's alpha in the original study (Sprecher & Fehr, 2005) was .95 and was .92 in the present report. (Please refer to Table 5.1 for Reliabilities Table)

Table 5.1: Descriptive statistics and reliabilities for all measures

Measure	Reliabilities in prior work	Internal Reliability (Cronbach's alpha)
Perceived Stress Scale	.84-.86	.78
Work Locus of Control Scale	.75-.85	.82
Compassionate Love Scale	.95	.92

Barriers to Physician Compassion Questionnaire (BPC)

a. Development of the BPC

As there are no existing validated questionnaires on barriers to compassion in medical practice, the authors developed the BPC (Refer to Figure 5.1). We initially generated items by asking a separate group of doctors what they perceived as barriers to being compassionate in the clinical context. An independent, convenience sample of 75 physicians of various specialties from the USA, NZ, Australia, and the Philippines were recruited via email, social

media, and word of mouth. An initial list of 57 barriers to compassion was generated based from the survey of physicians, the authors' clinical experience, psychometric theory, and theoretical considerations from compassion research. The two authors, one a health psychology academic and the other a practicing academic psychiatrist, examined the list for item redundancy, clarity, and content validity. A final list of 34 items to comprise the BPC questionnaire was agreed upon. The 34 items in the final questionnaire assessed barriers to compassion in several domains consisting of 1) physician fatigue or stress 2) patient characteristics 3) characteristics of patient's family 4) environmental conditions 5) institutional demands 6) clinical situation 7) time pressure and 8) workload.

b. Administration of the BPC

The BPC was then administered to a second, independent sample of physicians. Physicians were provided with a definition of compassion and then asked to rate the extent to which each of the 34 BPC items interfered with their ability to be compassionate. As the sample's participants are well educated and should be better able to discriminate in self-report (Gehlbach & Brinkworth, 2011; L.-J. Weng, 2004), a 1 (minimal) to 7 (a great deal) metric was used. (Please refer to Table 5.2 for the BPC Questionnaire).

Figure 5.1: Development of the BPC Questionnaire

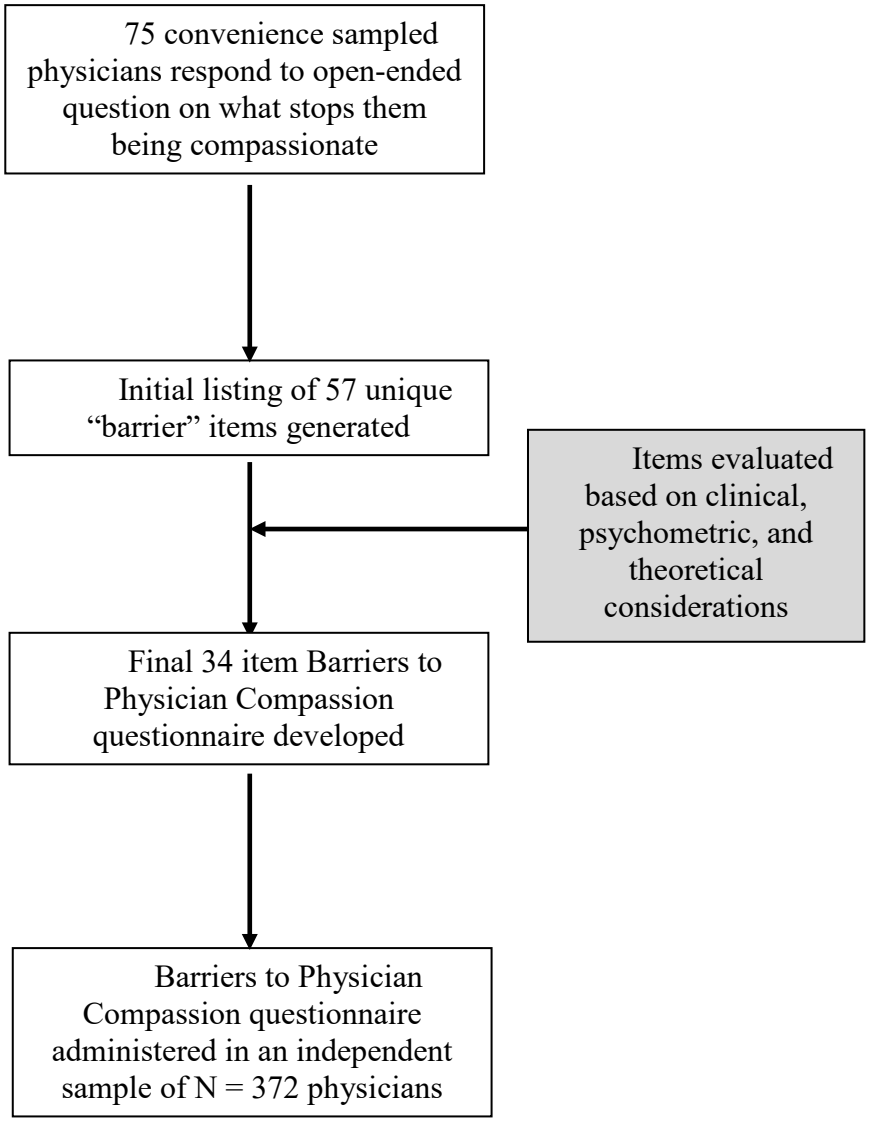


Table 5.2 Barriers to Physician Compassion Questionnaire

Compassion in medicine is the desire to care, nurture, understand and relieve suffering and distress of the patient. How much do the following factors <u>prevent or stop</u> you from <u>expressing</u> compassion in your clinical work?

1 2 3 4 5 6 7

Minimal A Great Deal

	Factor	Minimal						A Great Deal
1	Feeling burned out	1	2	3	4	5	6	7
2	Having a limited time for consultations	1	2	3	4	5	6	7
3	Having a large case load of patients	1	2	3	4	5	6	7
4	Multiple interruptions during the consultations (e.g., pages, texts)	1	2	3	4	5	6	7
5	Physical environment is not conducive for a consultation (e.g., noise)	1	2	3	4	5	6	7
6	Culture of defensive medicine	1	2	3	4	5	6	7
7	Prior difficult interactions with the patient's family	1	2	3	4	5	6	7
8	Sick of hearing the same problem again and again	1	2	3	4	5	6	7
9	Patient is difficult, rude, or obnoxious	1	2	3	4	5	6	7
10	Feeling tired or fatigued	1	2	3	4	5	6	7
11	Clinical situation is very complex	1	2	3	4	5	6	7
12	Current treatments are not working	1	2	3	4	5	6	7
13	Having too many patients to see in a limited time	1	2	3	4	5	6	7
14	Many distractions during the consultation	1	2	3	4	5	6	7
15	Concern that patients may complain or sue	1	2	3	4	5	6	7
16	Interference from family members	1	2	3	4	5	6	7
17	Patient is not happy with you	1	2	3	4	5	6	7
18	Patient does not follow your recommendations	1	2	3	4	5	6	7

Table 5.2 (cont.)

	Factor	Minimal						A Great Deal
19	You are tired of practicing medicine	1	2	3	4	5	6	7
20	You are not sure if the patient will get better	1	2	3	4	5	6	7
21	Having too many non-clinical duties (e.g., administration, teaching)	1	2	3	4	5	6	7
22	Too many people present during your consultations	1	2	3	4	5	6	7
23	Too much paperwork and documentation	1	2	3	4	5	6	7
24	Family of your patient is not happy with you	1	2	3	4	5	6	7
25	Patient has irrational beliefs about his condition and treatments	1	2	3	4	5	6	7
26	Patient is unkempt and malodorous	1	2	3	4	5	6	7
27	Your personal problems	1	2	3	4	5	6	7
28	Feeling impatient	1	2	3	4	5	6	7
29	Current treatments have caused unexpected adverse effects	1	2	3	4	5	6	7
30	Patient comes from a different socio-cultural/ ethnic background	1	2	3	4	5	6	7
31	You are rushing to see the next patient	1	2	3	4	5	6	7
32	Patient is difficult to understand	1	2	3	4	5	6	7
33	Patient is in denial regarding their condition	1	2	3	4	5	6	7
34	What you are dealing with is beyond your comfort level	1	2	3	4	5	6	7

Data Analysis

Assessment of the psychometric properties of the BPC questionnaire occurred in two stages. The first stage was to assess the underlying structure of the barriers questionnaire by reducing or summarising the initial list of 34 barriers to compassion items to a smaller set of components or "themes". This was using a combination of the unconstrained and constrained principal components analyses (PCA). The second stage of the analysis was intended to provide initial evidence of convergent and divergent validation for the resulting components. In the current report, correlational analyses (Spearman's ρ) were used to examine associations between scores on the barrier components or "themes" and measures of convergent and divergent validation (demographics, clinical practice variables, locus of control, stress and trait compassion).

Ethical Permission

Permission to conduct the study was obtained from conference organisers, participating hospitals, clinics, and the University of Auckland Human Participants Ethics Committee (Ref: 7640).

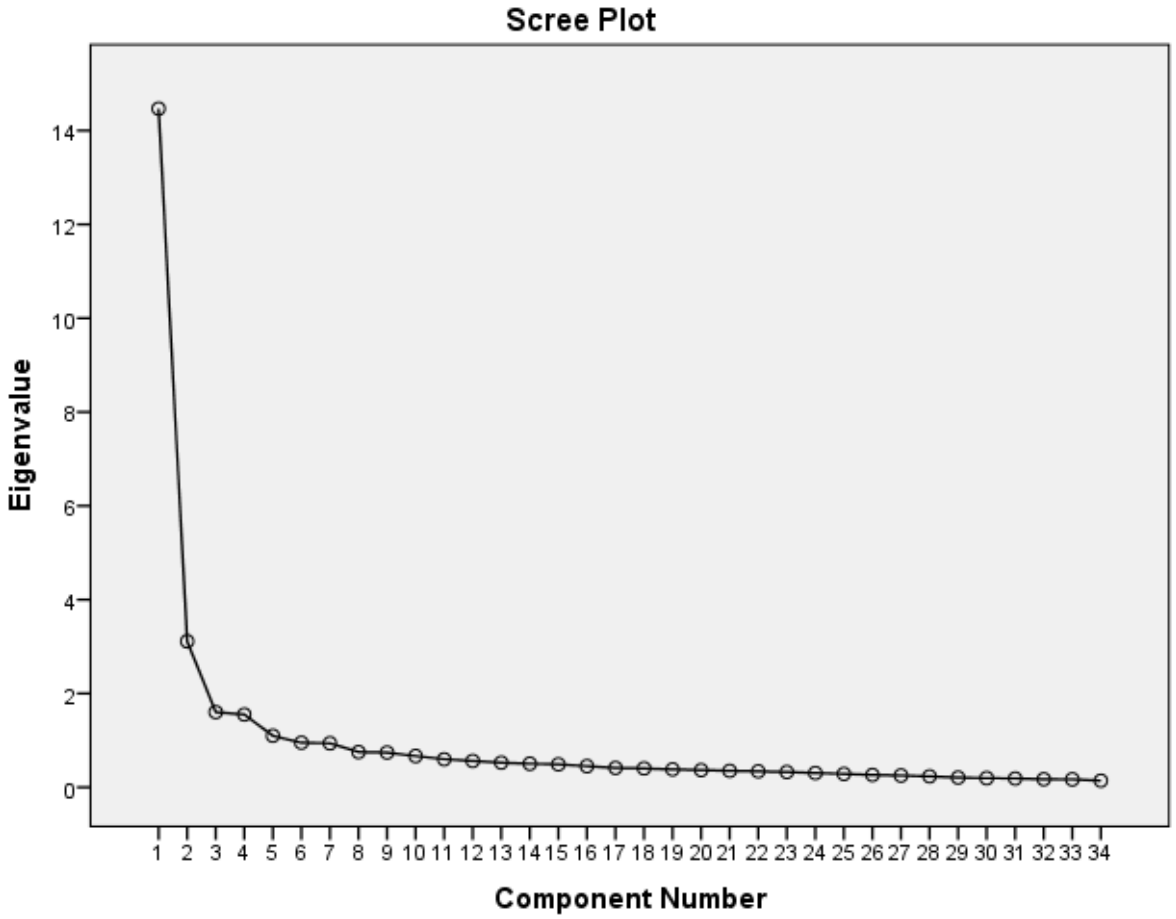
Results

The BPC was administered to 372 practicing physicians from the Philippines. Forty one percent were recruited from lectures. Forty six percent were male and 54% female, with a median age of 42 years, and were (on average) 18 years post-graduation from medical school. The overwhelming majority were educated in the Philippines with a comparable portion engaged in procedural/technology focused specialties (e.g., surgery, obstetrics/gynaecology, ophthalmology, radiology and anaesthetics) versus less procedurally-focused specialties (e.g., internal medicine, general practice, psychiatry, paediatrics, neurology, rehabilitation medicine and emergency medicine).

The Structure of the Barriers to Physician Questionnaire

Prior to performing an unconstrained PCA, the suitability of the data for analysis was assessed. Inspection of the correlation matrix showed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value was .945 and Bartlett's Test of Sphericity was significant ($p<.001$) supporting the factorability of the correlation matrix (Pallant, 2010). An initial (unconstrained) PCA revealed the presence of five components with eigenvalues greater than 1, explaining 64.2% of the variance. A visual inspection of the scree plot (Cattell, 1966) (see Figure 5.2) revealed a substantial drop in explained variance after the second component and another after the fourth.

Figure 5.2: Scree Plot



We pursued a four component solution based on: 1) Inspection of the item loadings and evaluation by the authors of what the constellation of items appeared to assess (face validity), and 2) our theoretical expectation of a differentiated barrier construct.

We then ran a confirmatory PCA on the four component solution (see Table 5.3). Consistent with standard psychometric practice, values of .5 were used to determine loadings. Using this criterion, Item 8 did not load on any component. The first barrier component was defined by five items regarding physicians feeling pressured, tired, or fatigued – a "burnout/overload" component. The second was a grouping of 10 items centred on environmental characteristics, being interrupted during clinical work, having too much paperwork, too many people present, and the like. This was labelled an "external distraction"

component. The third component reflected a grouping of seven items that clustered around a difficult patient or family. This component was composed of items including “patient is difficult, rude or obnoxious”, “interference from family members” and “patient is not happy with you”. The final component – “complex clinical situation” – was defined by 11 items centred on aspects of the patient and their clinical condition being highly complex or demanding. With one exception, all items loaded on a single component; Item 15 co-loaded on the external distraction and difficult patient/family component but, because of a higher loading on the former, was only allowed to load on the distraction component. Internal reliabilities for the burnout/overload ($\alpha = .89$), external distraction ($\alpha = .90$), difficult patient/family ($\alpha = .91$) and complex clinical situation components ($\alpha = .92$) were all strong. The overall reliability for the 33-item scale was $\alpha = .96$. A full table of loadings is shown in Table 5.3.

Table 5.3: Component loadings for 33 items in a constrained component analysis of the 34 item Barriers to Physician Compassion Scale in a sample of 372 Filipino physicians

Item		Component			
		1	2	3	4
1	Feeling burned out	.805			
2	Having a limited time for consultations	.767			
3	Having a large case load of patients	.839			
10	Feeling tired or fatigued	.717			
13	Having too many patients to see in a limited time	.665			
4	Multiple interruptions during the consultations (e.g., pages, texts)		.606		
5	Physical environment is not conducive for a consultation (e.g., noise)		.613		
6	Culture of defensive medicine		.647		
11	Clinical situation is very complex		.581		
12	Current treatments are not working		.600		
14	Many distractions during your consultation		.634		
15	Concern that patients may complain or sue		.551	.522	
21	Having too many non clinical duties (e.g., administration, teaching)		.519		
22	Too many people present during your consultations		.535		
23	Too much paperwork and documentation		.538		
7	Prior difficult interactions with the patient's family			.629	
9	Patient is difficult, rude, or obnoxious			.810	
16	Interference from family members			.604	
17	Patient is not happy with you			.783	
18	Patient does not follow your recommendations			.706	
24	Family of the patient is not happy with you			.776	
25	Patient has irrational beliefs about his/her condition and treatments			.595	

Table 5.3 (cont.)

Item		Component			
		1	2	3	4
19	You are tired of practicing medicine				.504
20	You are not sure if the patient will get better				.620
26	Patient is unkempt and malodorous				.598
27	Your personal problems				.626
28	Feeling impatient				.647
29	Current treatments have caused unexpected adverse effects				.607
30	Patient comes from a different socio-cultural/ ethnic background				.569
31	You are rushing to see the next patient				.588
32	Patient is difficult to understand				.602
33	Patient is in denial regarding their condition				.583
34	What you are dealing with is beyond your comfort level				.539

Note: Item 8 (Sick of hearing the same problem again and again) did not load on any of the four components and was removed

Convergent and Divergent Validation

As can be seen in Table 5.4 below, only three of the four barriers (burnout/overload, difficult patient/family and complex clinical situation) were weakly (negatively) associated with trait compassion, suggesting that our barriers constructs are distinct from trait compassion. Burnout/Overload component scores were higher among younger physicians and those with fewer years of practice. Burnout/Overload component scores were lower among physicians reporting longer initial or follow up consultation times, among physicians reporting a greater proportion of private or NGO (non-governmental organisation) work but were positively associated with the proportion of public work. Burnout/Overload barrier scores were greater among those also reporting high clinical and overall workloads as well as greater stress.

The external distraction barrier showed a generally similar pattern of links to demographic and clinical characteristics as well as other convergent measures. It was, however, not related to age or years of practice and was not related to trait compassion. Additionally, although many links were in the same direction as those seen for the burnout/overload barrier, contrasts between the coefficients showed that the external distraction barrier was less closely linked to the proportion of work in the public sector as well as to overall and clinical load ratings.

The remaining two components – difficult patient/family and complex clinical situation barriers – were most readily distinguished because both were linked to a greater external work locus of control. The difficult patient barrier was not linked to any demographic or most of the clinical variables. Ratings on the complex clinical situation barrier were higher among younger physicians.

Table 5.4: Correlations between four Barrier to Physician Compassion components, demographics, practice variables, and psychological characteristics

	Barrier to Compassion Component			
	Burnout (B)	External distraction (ED)	Difficult patient or family (DP)	Complex clinical situation (CC)
Demographics				
Age	-.29**			-.11*
Sex	.11*			
Practice Variables				
Years of practice	-.26**			.10*
Patients/week	.14**			
Mins. initial consult	-.11*			
Mins. Follow up	-.19**			-.11*
% work Private	-.27**	-.14**		
% work Public	.32**	.16**		.10*
% work NGO	.18**	-.17**	-.12*	-.14**
Psychological				
Clinical load	.33**	.14**		
Overall load	.38**	.12*		
Stress	.35**	.31**.	.17**	.34**
Compassionate Love	-.14**		-.15**	-.16**
Work Locus of Control		.11*		.21**

Table 5.4 (cont.)

	Burnout (B)	External distraction (ED)	Difficult patient or family (DP)	Complex clinical situation (CC)
Barrier components				
Burnout	-	.58**	.40**	.50**
External Distraction	.58**	-	.69**	.74**
Difficult Patient	.40**	.69**	-	.75**
Complex Clinical Situation	.50**	.74**	.75**	-

Note: All correlations were calculated using Spearman's ***ρ***; * p < .05, ** p < .01
NGO, non-governmental organisation.

Table 5.4 shows that the four barrier components were positively related to one another. Spearman's correlation coefficients assessing the associations between the four barrier components ranged from .40 to .75.

Discussion

Outside of compassion fatigue, specific impediments to practicing with compassion have not been systematically studied. This report extends the literature by providing preliminary psychometric data on a questionnaire that measures specific barriers to compassion among doctors. Our analysis showed the presence of four discriminable, distinct, reliable, and valid barriers to compassion in medicine. These barriers are: 1) physician burnout/overload 2) external distractions 3) difficult patient/ family, and 4) complex clinical situation. The identification of specific barriers to compassion is unsurprising and suggests that physicians are aware of what interferes with their compassion. Our results indicate that barriers can be identified and measured.

Our current report helps extend current thinking beyond the concept of compassion fatigue. Compassion fatigue is an outcome that likely results from diverse long term

processes (Coetzee & Klopper, 2010). However, the concept of compassion fatigue does not directly illuminate the specific aspects of physician's work that create it. Burnout, for example, has been suggested to contribute to compassion fatigue, poorer patient care (Shanafelt et al., 2002), and a decreased ability to empathise (Krasner et al., 2009). As in our study, prior works have shown negative associations between age and professional burnout (Gabbe et al., 2002; S. Lloyd et al., 1994).

Our data suggest that complex clinical situations may interfere with physician compassion. Uncertainty and/or a failure of treatments to lead to improvement are likely experienced as threatening (particularly by less experienced clinicians). Situations in which patients do not improve may interfere with compassion because the physician manages the uncertainty by orienting to diagnosis and symptom management. When patients do not improve, physicians may implicitly blame the patient for failing to accurately describe symptoms or adhere to recommendations. Ironically, it is in precisely such situations that compassion is most needed and most likely to prove of benefit to both the patient and the working relationship. Ratings on the complex clinical situation barrier were higher among younger and/or less experienced physicians, perhaps implying that physicians learn to manage the anxiety-provoking (and compassion inhibiting) environments that clinically complex situations engender.

Cost-driven changes to the manner in which healthcare is delivered results in doctors consulting increasing number of patients, having less time for each consult, and completing more paperwork (Najjar et al., 2009). Time pressure and the lack of sufficient time to take care of patients were central to the first barrier to compassion. This is consistent with time pressure effects on empathy (Baillie, 1996; Najjar et al., 2009). A busy clinician under management pressure to see sick patients every few minutes will find it difficult to connect, understand, and care for the patient.

According to our data, cost driven healthcare changes are likely to be compounded by work environments characterised by interruptions, external distractions, and difficult patients. External distractions are known to impair a person's ability to listen (Goh, 2011) and can result in feeling impatient, irritable, pressured, and harassed (Williams et al., 2002). Such demands almost certainly make it more difficult for physicians to be compassionate. Similarly, dealing with a difficult patient or family is taxing to clinicians and can evoke negative emotions (Steinmetz & Tabenkin, 2001), despair, anger and frustration (Gerrard & Riddell, 1988) making it challenging to empathise (Baillie, 1996) and be compassionate. Indeed, our results suggest that regardless of the physician experience or workload, difficult patients and families remain a barrier to being compassionate. Medical training does not typically emphasise the "handling" of difficult patients or unexpected clinical events. Indeed, there is a sense in which the opposite is true as trainee physicians are trained to expect that they will have mastery over clinical interactions, their medical knowledge, diagnostic, and treatment skills (Banja, 2006).

Limitations

Although these data represent a useful contribution to our understanding of compassion in medical contexts, they are not without their weaknesses. First, participants were physicians from the Philippines, a developing country with numerous disparities. These disparities may have specific economic, religious, or cultural constituents that impact on the healthcare delivery system(s), the rate and environments in which physicians work, and expectations of both patients and doctors regarding their duties. Therefore, care should be taken in seeking to generalise findings to other countries and healthcare contexts. However, it should also be remembered that all scales were developed and completed in English and that both the medical education and healthcare delivery systems in the Philippines are patterned on a North American model, with English as the medium of instruction. Similarly, the pilot

development of our instrument among physicians from the USA, NZ, Australia, and the Philippines should also help mitigate possible issues with generalisability.

Second, as a "required" professional characteristic, self-reports on compassion are likely biased by self- or other-presentational concerns. Our questionnaire design attempted to minimise this concern by asking doctors the extent to which common clinical situations act as barriers rather than asking them to rate their compassion per se. Future studies should assess desirability bias and implement more objective assessments of physician compassion perhaps by employing third party report (e.g., patients and colleagues) or use of video simulation.

Third, the Barriers to Physician Compassion questionnaire included barriers of a systemic nature including work environment, culture of defensive medicine, and the perception of excessive non-clinical duties (e.g., administration, training, supervision). However, the questionnaire did not specifically include difficulties in relationships with colleagues (e.g., workplace bullying) and pressures from management. Given their importance to the wellbeing of physicians and other health professionals at work, adding items assessing these areas may be useful.

Fourth, using an abridged version of the Compassionate Love Scale might have affected its validity.

Lastly, physician variables of self-compassion, resistance to receiving compassion (Gilbert et al., 2012; Gilbert et al., 2011), perfectionism, empathy, early experiences of empathy and compassion were not measured in this study. Future studies might benefit from examining how barriers to compassion are related to compassion-related fears, physician empathy and the like.

Conclusion

The current report is unique in attempting to deconstruct the concept of barriers to compassion in medicine. Professional guidelines require compassion of physicians, patients

expect compassion (Emanuel & Dubler, 1995; L. A. Fogarty et al., 1999; Meagher, 2006; Old et al., 2011; Wiggins et al., 2009) and studies suggest that both patients (L. A. Fogarty et al., 1999) and physicians benefit from compassion (Fredrickson et al., 2008; Jazaieri et al., 2013; Klimecki et al., 2013; Pace et al., 2009). Accordingly, our study demonstrates that compassion is deterred by several distinct components. Identifying these specific barriers to compassion informs targeted interventions in the future. Rather than simply exhort physicians to remain compassionate, it is important that we understand that compassion occurs (and does not occur) in particular physical, clinical, institutional, and interpersonal contexts. Training physicians to manage stress may reduce external barriers to compassion. Learning how to manage difficult patients and clinical uncertainty also represents a likely intervention in increasing compassion. Lastly, the focus for intervention should not solely be on the physician as the health system environment exerts time pressure and non-clinical demands on doctors which become barriers to compassion.

Chapter 6 – Barriers to Medical Compassion as a Function of Experience and Specialisation: Psychiatry, Paediatrics, Internal Medicine, Surgery and General Practice

Preface

Within the perspective offered by the Transactional Model of Physician Compassion, the provision of compassion in medicine results from a complex, emergent process reflecting the interactions among physician, patient, clinical, and environmental factors. In contributing to research into the factors facilitating and deterring physician compassion, the previous chapter presented data from a first empirical study seeking to operationalise the barriers to compassion in medicine. The chapter detailed the initial psychometric development of a questionnaire describing subjective impediments to physician compassion.

By developing and administering the Barriers to Physician Questionnaire to 372 doctors, four distinct barriers to medical compassion were identified and measured. Consistent with what the Transactional Model of Physician Compassion posited, structural analyses of the questionnaire suggested that barriers to compassion were not limited to doctor factors (e.g., fatigue, burnout), but also included external distractions, patient/family factors and complex clinical situations. At least as indexed by self-reported barriers to physician compassion, a diverse range of intra-physician, patient, clinical, environmental, and institutional factors all have the capacity to interfere with compassion.

Thus, the previous chapter demonstrated that compassion, specifically the barriers to compassion, are varied and can be validly measured. The view that medical compassion is "all about the doctor" that is implicit in studies of compassion fatigue is disputed and data consistent with a multi-variable archetype of compassion's origins were provided. However, if future interventions are to be specific and effective in enhancing compassion, there is a need to further untangle and understand these barriers. Specifically, it will prove informative

to investigate how they vary as a function of doctors' level of training, specific work dynamics and conditions, and the common types of patients that they encounter.

In brief, given that doctors vary in terms of their training experiences, demographics, personality styles, work conditions, and specialities, it is likely that the barriers to compassion they encounter will be different as well. A young medical graduate might experience different barriers to compassion compared with a senior consultant about to retire. Though a young doctor is freshly armed with knowledge and skills in managing diseases, they might not have the emotional maturity and resilience of a seasoned doctor in handling patient suffering. More experienced doctors have been shown to report less burnout compared to junior doctors (Benson et al., 2009; Shanafelt et al., 2009). On the other hand, a junior doctor who grew up in a digital environment can easily navigate around complex electronic medical records and data management systems compared with the older doctor who becomes anxious or irritable with even the thought of typing their clinical notes. More broadly, physicians trained during different epochs likely have normatively different expectations regarding both their own role as well as the role required of the patient.

In addition to doctors' age and experience, the environment and the usual types of patients doctors treat may also affect the barriers to compassion they experience. A psychiatrist treating patients with schizophrenia in a busy, homeless shelter, for example, is likely to experience different barriers to compassion compared to a radiologist reading CT scans in a comfortable, air-conditioned radiology suite in a modern university hospital. Similarly, an emergency physician triaging patients with alcohol-related injuries on a frenzied Friday night shift may well experience different impediments to caring relative to a paediatrician consoling parents of a dying baby in a hospice.

In contributing to this area of compassion research, the following chapter presents a published empirical study examining how barriers to physician compassion varied based on clinical experience and specialisation in a large cohort of New Zealand doctors.

Citation

Fernando, A. T., & Consedine, N. S. (2017). Barriers to medical compassion as a function of experience and specialization: Psychiatry, pediatrics, internal medicine, surgery, and general practice. *Journal of Pain and Symptom Management, 53*(6), 979-987.

Introduction

Compassion is paramount to the effective practice of medicine. It is a feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help (Goetz et al., 2010). Compassion is expected by patients (Emanuel & Dubler, 1995; L. A. Fogarty et al., 1999; Meagher, 2006; Old et al., 2011; Wiggins et al., 2009; Youngson, 2011, 2012), professional bodies (American Medical Association, 2016; New Zealand Medical Association, 2014), and by practitioners themselves (Lown et al., 2011). In addition, a small body of evidence is beginning to link compassionate care with better patient experiences, enhanced doctor-patient relationships (L. A. Fogarty et al., 1999; Lelorain et al., 2012), and with doctors deriving pleasure from caring – a phenomenon termed compassion satisfaction (Gleichgerrcht & Decety, 2013, 2014). Despite being essential in healthcare, however, most studies examining compassion have focused on compassion fatigue (Abendroth & Flannery, 2006; Figley, 1995; Hooper et al., 2010; Huggard, 2003; Lynch & Lobo, 2012; Zeidner, Hadar, Matthews, & Roberts, 2013) – an outcome variable – rather than on illuminating the factors that facilitate or deter compassion itself.

Put simply, studying compassion within the compassion fatigue framework has tended to encourage the study of physician factors rather than more broadly evaluating the possible barriers to physician compassion. In turn, the translation of research into

interventions aimed at enhancing compassion has been restricted. In contrast to this physician-centric approach, the Transactional Model of Physician Compassion (TMPC) suggests that physician compassion reflects the interactive influences of four groups of phenomena; 1) physician factors, 2) patient and family factors, 3) clinical situation, and 4) environmental factors (A. T. Fernando & Consedine, 2014a). Viewed within the TMPC, the barriers to compassion include physician factors such as having intrinsically lower compassion or poorer empathic ability, stress and fatigue, and a lack of coping strategies. Other barriers to compassion are outside the physician and include difficult patients and demanding families, the complexity of the clinical situation (e.g., the physician finds it more difficult to care because the clinical picture is complex, unclear or anxiety-provoking), and problems posed by institutional and environmental factors. By identifying multiple classes of possible barriers and a means to organise and measure them, the TMPC has the potential to illuminate novel interventional targets (A. T. Fernando, Arroll, & Consedine, 2016).

To do this most effectively, however, it is important we systematically document how diverse physician, patient, clinical, and environmental barriers are distributed across physicians. In the current study, we report on the distribution of the barriers to physician compassion as a function of clinical specialisation and physician experience. A brief rationale for the study is provided below.

In beginning, it is worth recalling that doctors select specialties for multiple reasons. Although there is wide variation within each specialisation, there is some evidence of systematic variation in the personality ‘types’ that predominate in each specialty (Borges & Osmon, 2001; Consedine & Windsor, 2014; Hardigan & Cohen, 1998; Thomas, 1997; Tokar, Fischer, & Subich, 1998). Such dynamics create the possibility that barriers to compassion are also reported or experienced differently. Differences of this kind are then likely compounded by the fact that specialties have their own normative patient type, caseload,

timeframes, and work-related challenges. Specialists in internal medicine**,** for example, tend to care for high volumes of chronic medically complex adult patients (M. Lloyd & Carson, 2011; Shanafelt et al., 2002). Surgeons' work is heavily technique based and procedural (Derksen et al., 2013), replete with unexpected, stressful contingencies (Chochinov, 2007), and immediate "life and death" situations (Brown, Crawford, Gilbert, Gilbert, & Gale, 2014; Vivino, Thompson, Hill, & Ladany, 2009). In many cases, consultations with surgical patients are comparatively brief or are conducted post treatment. In comparative contrast, general practitioners form close, long-term relationships with patients, treat high volumes of patients per unit time, and may risk becoming professionally isolated relative to their hospital-based colleagues (Cameron et al., 2013; Perry, 2009). Similarly, paediatricians in New Zealand tend to care for children with complex, long term, and often incurable problems. They also contend with stressed, difficult, and angry parents (Lown et al., 2011), and with dying children. They must handle draining childhood abuse cases (Sanghavi, 2006). Psychiatrists treat emotionally challenging patients and deal with the stress of patient suicides (Fothergill, Edwards, & Burnard, 2004; Kumar, Fischer, Robinson, Hatcher, & Bhagat, 2007). Thus, although each position has its own challenges and there is extensive variation within specialties, each tends to be slightly different in terms of physician personality, types of patients, and work situations. As such, the reported barriers to compassion may also systematically vary across groups.

In a similar vein, there is reason to suspect that variations in the amount of professional experience (as indexed by duration of clinical practice) will also predict variation in the barriers to compassion. Although the notion that "expending" compassion over time depletes reservoirs of caring predominates in the compassion fatigue literature, evidence for this notion is surprisingly scanty. In fact, previous research has shown younger physicians are more (rather than less) susceptible to stress (Vivino et al., 2009) and report

higher rather than lower burnout (A. E. Armstrong, Parsons, & Barker, 2000; Bray, O'Brien, Kirton, Zubairu, & Christiansen, 2014; Brown et al., 2014; Cameron et al., 2013; Easter & Beach, 2004). Indicative of the complexity of the links between specialisation and experience, one recent study found that ratings of patient pain were lower among more experienced physicians but that personal distress was greater among those in more demanding fields (Gleichgerrcht & Decety, 2014).

In sum, the TMPC suggests that if we are able to identify more precise barriers and how they vary as a function of physician specialty and experience, we will be better placed to develop compassion-enhancing interventions suited to the unique challenges confronting physicians of varying degrees of experience from specific disciplines. As such, the aim of the current report was to systematically examine whether the barriers to compassion established in prior research vary (a) across samples of psychiatrists, general practitioners, surgeons, paediatricians and internists, and (b) as a function of physician experience.

Methods

Participants. Practicing medical doctors were recruited between September 2012 and May 2013. Overall, 580 doctors were recruited into the parent study which studies predictors to barriers to compassion amongst doctors. However, given the focus of the current report on specialty differences, 444 doctors identifying themselves as belonging to one of five targeted specialty groups –general/family medicine practitioners (N =101), general surgeons and surgical subspecialties (trauma, neurosurgery, ophthalmology, paediatric surgery, plastic surgery, urology and vascular surgery) (N= 59), psychiatrists (N= 109), paediatricians (N=65), and internal medicine specialists including subspecialty medicine (cardiology, gastroenterology, palliative medicine, respiratory medicine, rheumatology and rural hospital medicine) (N=110) – are analysed in this report. Response rates are difficult to determine as the anonymous nature of recruitment meant we were unable to track the number of doctors

who received email invites or saw electronic advertisements. Inclusion criterion required that physicians were practicing medicine in New Zealand at the time of the study. Physicians who reported a current absence of active patient contact were excluded.

Procedures. Recruitment of participants was by non-random convenience sampling via: a) lecture series conducted by the first author at medical meetings and grand rounds, b) contacts and referrals in hospitals and clinics in New Zealand, c) emails to various professional medical organisations, and, d) a local medical electronic news digest that advertised the study. Permission to conduct the study was obtained from the local human participants' ethics committee. Physicians either completed pen and paper surveys or followed links to Survey Monkey© to complete the 20 minutes survey. Participation was voluntary and anonymous, and completion of the questionnaire was taken to imply consent. Participants who completed the questionnaire were invited to enter a draw to win an iPad.

Measures. The questionnaire assessed participant demographics (e.g., age, gender), practice characteristics (e.g., years of medical practice, number of patients/week, patient load, and overall work load) and area of specialisation. Participants were given a list of 44 specialisations as per those recognised by the local medical council (Medical Council of New Zealand). As noted, given our focus on possible differences in the barriers to compassion across specialisations, participants specialising in general practice, surgery, psychiatry, paediatrics, or internal/general medicine were included.

Finally, participants completed the Barriers to Physician Compassion Questionnaire (A. T. Fernando & Consedine, 2014b), a validated, 33 item instrument assessing four distinct, face-valid, and discriminable barriers to compassion – physician stress, external distractions, difficult patient/family, and complex clinical situation. In completing this instrument, doctors are asked "How much do the following factors prevent or stop you from expressing compassion in your clinical work?" Examples of items are "feeling burned out" (physician

stress) and "patient is difficult, rude or obnoxious" (difficult patient/family). Items are rated using a 1 (minimal) to 7 (a great deal) scale in terms of how much each is experienced as interfering with the physician's ability to be compassionate. Consistent with the underlying structure of barriers evidenced in an independent prior study of 372 Filipino physicians, (A. T. Fernando & Consedine, 2014b), 5 items were averaged to index stress (α= 0.89), 7 to index difficult patient/ family (α= 0.90), 10 to index external distraction (α= 0.87), and 11 for complex clinical situation (α= 0.89).

Analytic strategy

Consistent with the aim of examining effects of specialisation and experience on barriers to compassion variables on five specialities, we first characterised our sample before conducting a 5 (specialty grouping) x 2 (more versus less physician experience) factorial MANCOVA (Multivariate Analysis of Covariance) in which physician gender was controlled. Research has shown differences in compassion across different genders, a finding that may also extend to physicians (Weisberg, DeYoung, & Hirsh, 2011); female mental health providers report greater compassion fatigue (Sprang et al., 2007) and marginally greater physician empathy (Hojat et al., 2002).

Results

We began by cross-classifying more and less experienced physicians across the five specialties- a total of ten groups (see Table 6.1). As might be expected, there were differences in gender membership as a function of the experience/specialty grouping, $\chi^2(9)=37.47$, $p <$ .0001. Hays' standardised residuals (Hays, 1994) indicated that there were more males in the experienced surgeon group and proportionately more females in the less experienced paediatrician group. Other differences are described in Table 6.1.

Table 6.1: Physician demographic and work characteristics as a function of speciality and physician experience

	Psychiatry (Ps)		General Practice (GP)		Surgery (S)		Internal Medicine (IM)		Paediatrics (Pe)		Average	Multiple comparison for specialisations ($\alpha < .05$)
	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced		
	N=39	N=70	N=33	N=68	N=31	N=28	N=76	N=34	N=41	N=24		
Female	46.15%	50.%	60.6%	58.82%	38.71%	17.86%	39.47%	47.06%	78.05%	70.83%	50.76 %	
% Female	16.69 (4.85)	33.73 (8.11)	14.30 (3.98)	33.63 (5.72)	14.16 (5.76)	35.11 (6.97)	12.82 (5.58)	31.77 (5.33)	14.17 (4.87)	31.8 (6.81)	23.82	IM,Pe <S<Ps,GP
Patients per week	17.64 (6.31)	19.59 (10.16)	88.83 (40.62)	89.41 (46.15)	52.74 (31.57)	60.30 (40.32)	37.97 (20.29)	38.04 (24.79)	32.14 (21.19)	23.88 (11.46)	46.05	Ps,Pe,IM<S<GP; Ps<IM
Work hours per week	44.22 (9.89)	40.44 (11.18)	34.80 (15.27)	35.95 (11.11)	57.32 (15.37)	49.46 (14.46)	49.61 (12.30)	45.03 (12.31)	45.51 (14.43)	42.23 (11.20)	44.51	GP<Ps, Pe, IM, S
Patient load	2.67 (0.84)	2.73 (0.90)	2.52 (0.76)	2.43 (0.89)	2.68 (0.65)	2.64 (0.87)	2.39 (0.73)	2.50 (0.75)	2.27 (0.87)	2.42 (0.72)	2.53	Pe<Ps
Overall work load	2.46 (0.76)	2.31 (0.87)	2.21 (0.70)	2.10 (0.79)	2.68 (0.70)	2.43 (0.88)	2.21 (0.74)	2.03 (0.80)	2.05 (0.74)	2.00 (0.72)	2.25	S > GP, IM, Pe; Ps > Pe

Table 6.1 (cont.)

	Psychiatry (Ps)		General Practice (GP)		Surgery (S)		Internal Medicine (IM)		Paediatrics (Pe)		Average	Multiple comparison for specialisations ($\alpha < .05$)
	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced	Less Experienced	More Experienced		
	N=39	N=70	N=33	N=68	N=31	N=28	N=76	N=34	N=41	N=24		
% Private Practice	0.38 (1.35)	6.11 (18.41)	83.03 (34.23)	84.93 (31.80)	13.39 (22.38)	38.71 (34.21)	1.32 (6.55)	7.41 (19.35)	0.00 (0.00)	2.63 (8.27)	23.79	Ps, IM, Pe < S < GP
% Public Practice	95.90 (13.90)	92.44 (21.54)	14.54 (33.55)	8.68 (25.36)	83.87 (25.22)	60.50 (34.12)	93.92 (21.34)	87.18 (25.06)	100.00 (0.00)	97.38 (8.27)	73.44	GP < S< Ps, IM. Pe
% NGO Practice	2.44 (8.10)	0.07 (0.60)	2.42 (10.91)	5.41 (20.06)	0.48 (1.98)	0.79 (2.22)	1.32 (16.68)	4.41 (17.91)	0.00 (0.00)	0.00 (0.00)	1.73	

Note: age groups coded such that “Less Experienced” <= 23 years from graduation from medical school and “More experienced” is 23+ years after medical school; Ps = Psychiatry, GP = General Practice, IM = Internal Medicine, PE = Paediatrics, S = Surgery; Patient Load and Overall Work Load scored 1-5 such that 1 = too much and 5 = too little

To address our primary question, a 5 (specialisation) x 2 (dichotomised experience) MANCOVA controlling for gender revealed overall effects for specialisation, Wilks' Lambda =.87, $p < .001$, and for experience, Wilks' Lambda = .90, $p < .001$. Follow up F tests showed differences across specialisations for Patient, F (4,434) =4.25, $p < .005$, $\eta^2 = .04$; Stress, F (4,434) = 5.29, $p < .001$, $\eta^2 = .05$; and Clinical Complexity barriers, F (4,434) = 6.84, $p < .001$, $\eta^2 = .06$. Specialisations did not report differences on the External barrier. Pairwise comparisons showed that for the Stress, Patient, and Clinical Complexity barriers, psychiatrists reported significantly lower barriers than general practitioners and internists (see Table 6.2). Equally, the effect of experience was significant for Patient, F (1, 434) = 23.74, $p < .001$, $\eta^2 = .05$; External, F (1,434) = 24.69, $p < .001$, $\eta^2 = .05$; Clinical Complexity, $F(1,434) = 12.65$, $p < .001$, $\eta^2 = .03$ and Stress barriers, $F(1,434) = 36.88$, $p < .001$, $\eta^2 = .08$. In all cases, older physicians reported lower barrier scores. The multivariate interaction between specialisation and experience was not significant, Wilks' Lambda = 0.95, $p > .05$, hence no additional univariate tests were conducted.

Table 6 2: Means and standard deviations of patient, external distraction, clinical complexity, and stress barriers to compassion as a function of physician specialisation and experience

Barrier	Psychiatry		General Practice		Surgery		Internal Medicine		Paediatrics		Pairwise comparison for specialisations
	Less Experience	More Experience	Less Experience	More Experience	Less Experience	More Experience	Less Experience	More Experience	Less Experience	More Experience	
	N=39	N=70	N=33	N=68	N=31	N=28	N=76	N=34	N=41	N=24	
Patient	3.11 (1.06)	2.54 (1.04)	3.70 (1.48)	3.33 (1.34)	3.47 (1.30)	2.51 (1.23)	3.82 (1.44)	2.92 (1.30)	3.43 (1.13)	3.05 (1.21)	GP, IM > Ps
External	3.01 (1.07)	2.75 (1.14)	3.05 (1.08)	2.91 (1.21)	3.39 (1.15)	2.14 (0.78)	3.37 (1.07)	2.65 (1.00)	3.10 (1.02)	2.70 (1.13)	-
Clinical Complexity	2.37 (0.69)	2.06 (0.80)	2.97 (1.09)	2.78 (1.04)	2.59 (1.00)	2.02 (0.71)	2.85 (1.02)	2.35 (0.97)	2.54 (0.84)	2.42 (0.96)	GP,IM > Ps GP>S
Stress	3.63 (1.36)	2.87 (1.30)	4.64 (1.29)	3.67 (1.43)	4.35 (1.32)	3.04 (1.20)	4.31 (1.37)	3.43 (1.37)	3.90 (1.51)	3.53 (1.43)	GP, IM>Ps

Note: Note: age groups coded such that “Less Experienced” <= 23 years from graduation from medical school and “More experienced” is 23+ years after medical school; Ps = Psychiatry, GP = General Practice, IM = Internal Medicine, Pe = Paediatrics, S = Surgery;

Discussion

Compassion is an essential part of medical practice that, to this point, has predominantly been studied via the lens offered by compassion fatigue. In helping to move research beyond compassion fatigue, this report evaluated whether barriers to medical compassion varied as a function of specialisation and physician experience. Our study showed that barriers to compassion varied as a function of physician specialty and physician experience. In general, psychiatrists reported lower barriers while physicians working in general practice and internal medicine specialists reported greater barriers. More experienced doctors reported lower barriers to compassion overall. Below we revisit these findings in greater detail, offer some possible explanations, and consider the limitations as well as implications of this research.

As expected, specialist physicians from different disciplines varied in the extent to which items indexing the four hypothesised barriers to compassion from the TMPC (A. T. Fernando & Consedine, 2014a), were seen as interfering with their compassion. The origins of these specialty-related differences are complex and likely to be multifaceted in origin. As noted, different personalities differentially choose different specialisations (Borges & Osmon, 2001; Consedine & Windsor, 2014; Tokar et al., 1998) and are differentially selected and trained (Hardigan & Cohen, 1998; Thomas, 1997). Viewed in this light, the tendency for psychiatrists to report low barriers may not be that surprising. Psychiatrists self-select into a specialisation in which treatment of the "person" is as important as the medical management of any disorder. Psychiatrists are selected for training on the basis of aptitudes such as empathic ability, and are trained in how to manage both the self and the other. However, doctors choosing both paediatrics and primary care also report valuing interpersonal contact (Way & Tracy, 2012) and/or "working with people" (Newton & Grayson, 2003), and yet

these two specialties reported either average or elevated barriers. Hence, factors beyond a physician's aptitudes and their training also need to be considered.

More likely in our opinion is that specific features of psychiatric practice are influential here. Psychiatrists are likely more knowledgeable on the topic of stress and its management. Furthermore, psychiatrists, perhaps more than other specialties in New Zealand, review complicated cases in interdisciplinary teams, distribute decision-making and risk, and facilitate group-based management of challenging patients. Psychiatric training involves routine one-on-one professional supervision with a senior colleague, facilitating discussion of difficult patients, practice related problems, and personal struggles. Many psychiatrists have also experienced being patients in therapy as encouraged by training programmes. In many psychiatric outpatient settings, patients are assigned case managers who monitor patients' health and compliance, liaise with families and support agencies, and arrange follow ups, further distributing professional burden and demand. Finally, the normative treatment model in psychiatry put a premium on the doctor-patient relationship right from the initial assessment and throughout treatment. Consultations in clinics are very private and are typically uninterrupted, reducing the interference of environmental factors. If there are difficulties in the relationship, psychiatrists are encouraged to reflect and identify the factors that result in negative countertransference. Not infrequently, negative feelings towards patients and families are openly discussed in supervision, peer groups, or team meetings. Taken together, such factors may help reduce burden among psychiatrists, distribute burden across teams, and facilitate the ongoing management of physician resources. In turn, such processes may reduce the extent to which patient, clinical, and environmental factors are seen as interfering with physician compassion.

Conversely, it is worth noting that general practitioners and internal medicine specialists are the two specialties that have the largest perceived workloads in this study of

(see Table 6.1) barriers to compassion. As "gatekeepers" to medical services, general practitioners have substantial administrative demands, need to manage their practice, feel undervalued, and must maintain long term links with difficult patients and families (Lee et al., 2008). Similarly, internal medicine specialists manage large caseloads of complex and chronically ill patients (Burack, Irby, Carline, Root, & Larson, 1999). In the New Zealand context, this occurs in a climate of limited beds and constant pressure to discharge patients from a public health system. Sustaining compassion under these conditions is likely difficult and specialists from these disciplines thus report greater barriers to compassion.

Finally, it is worth noting that the external distraction barrier did not vary across specialties. This finding is similar to a previous finding where external distraction as a barrier to compassion was not associated with physician age (A. T. Fernando & Consedine, 2014b). External distractions can affect a doctor's ability to connect with patients (Goh, 2011) as they detract from finite cognitive resources. External demands may result in the doctor feeling impatient, short tempered, hassled, and/or cut off from the patient (Williams et al., 2002). The lack of variation in this barrier across the different specialities may suggest that although the nature of any "interference" may vary across groups, the external work environment interferes comparably with compassion across specialties.

A second area of focus in this report regards possible differences in barriers to compassion as a function of physician experience. Consistent with other studies documenting greater stress (Vivino et al., 2009) and higher burnout in younger physicians (A. E. Armstrong et al., 2000; Bray et al., 2014; Brown et al., 2014; Cameron et al., 2013; Easter & Beach, 2004) more experienced doctors reported lower barriers to compassion. Older physicians tend to report better work-life balance, greater emotional resiliency, and a greater sense of personal accomplishment (Skaff, Toumey, Rapp, & Fahringer, 2003). In contrast to the "reservoir" model implicit in much compassion fatigue research, it may be that physicians

learn to husband their resources (including compassion) over time and, at least in some specialties, may acquire a certain comfort and predictability in their professional responsibilities and work. In this context, it is worth noting that physicians also derive considerable satisfaction and pleasure from caring, the experience of compassion satisfaction (Gleichgerrcht & Decety, 2013, 2014). It may be that the ability or tendency to experience satisfaction from caring is acquired over time such that the difficulties of more experienced physicians are offset by satisfaction.

Finally, it may be that reports of lower barriers reflect aspects of retention, turnover, or practice suspension dynamics that differentially remove physicians that are struggling with medical practice from some disciplines but not others (although we cannot assess this possibility here) or that differences may reflect experience-related variation in the modal work environment. Evidence suggests that the work and professional environments of a trainee doctor versus attending consultant are distinct (Crawford et al., 2013; Kret, 2011). Trainees have less control over the type, volume, timing, and location of their work relative to more senior colleagues. Discrepancies in autonomy may be more pronounced in specialities where trainees have demanding workloads, minimal experience with patient mortality, and career uncertainty. Competition among trainee surgeons, for example, is often fierce and many remain in non-training resident positions indefinitely while waiting for a specialty training post.

Concluding Remarks, Limitations, and Future Directions

Although these data represent useful contribution to the literature examining compassion in medicine, they are not without their weaknesses. First, convenience sampling in compassion research may differentially select compassionate physicians leading to an underestimation of barriers. The current sample is, however, comparatively large for New Zealand; representative sampling is an obvious next step. Second, power considerations

precluded the formal consideration of the distinction between a training physician (house officer or registrar/resident) versus a consultant or attending physician. Although examining physician experience may capture similar differences, formally evaluating this distinction may nonetheless prove useful. A third limitation is the classification of the specialty groups, a process that is necessarily somewhat imprecise. Physicians classified in a grouping such as internal medicine included both generalists and subspecialty doctors. Among internists, physicians have varying degrees of procedural involvement which may imply quite different work environments and potentially a wider variance of barriers to compassion. Finally, it is worth recalling that the study was undertaken in New Zealand where medicine remains relatively socialised or public and specialists typically work in public as well as private contexts. Prior work assessing the barriers to compassion suggests that greater external distraction and stress barriers are (unsurprisingly) associated with greater proportions of public (versus private) employment (A. T. Fernando & Consedine, 2014b). Specific features of diverse healthcare environments almost certainly impact the barriers to compassion, particularly in countries where private insurers exert an impact on working environments. Examining barriers in additional healthcare provision environments will likely prove important.

These limitations noted, the current data are clear in making several points. First, more junior physicians report greater barriers to compassion. Although these data do not enable comment on whether such differences reflect differential professional development across specialties or the vagaries of work environments, the need for compassion in healthcare suggests investigating the origins of such differences is important. Many physicians enter medicine with a profound desire to help and care for others. That this is "lost" in the early years of training and practice and that sustaining compassion is so difficult reflects among the most central challenges to modern medical practice.

Psychiatry as a specialty might offer clues to limit barriers to compassion in medicine. Regular trainee supervision, working in teams, minimal distractions, frequent self-reflection and practicing with emphasis on the therapeutic relationship may enhance medical compassion.

As important, however, is the demonstration that the barriers to physician compassion extend beyond physicians themselves, something that has been mooted in professional commentary (A. T. Fernando et al., 2016). Given patient, physician, and professional expectations regarding compassion, it is tempting to "blame" physicians when compassion declines or is absent. The near-exclusive focus of compassion research on the physician, however, ignores the reality that doctors in different specialties do not work in a vacuum but that they are embedded in a complex system involving the doctor, patients and their family, and the clinical and institutional environments. Documenting and investigating the barriers to compassion as well as their origins in different professional groups has the potential to illuminate pathways by which this critical aspect of healthcare can be sustained or enhanced.

Chapter 7 - Enhancing Compassion in General Practice

Recapitulation

This thesis began by characterising compassion as a feeling that arises when witnessing suffering but noted that it is a feeling that is necessarily accompanied by a desire to relieve that suffering (Goetz et al., 2010). It was then argued that compassion is of prime importance in medicine for at least two reasons. First, compassion is an expectation of patients, medical regulatory bodies, and doctors themselves. Caring for others is one major reason that doctors choose medicine as their profession (Draper & Louw, 2007; Millan et al., 2005). More pragmatically, practicing medicine with compassion is important in that compassion is increasingly linked to better patients' health outcomes.

It was then noted that despite the fact that compassion represents the ostensible heart of medical care, evidence shows that this is not invariably the case. Evidence denoting the commonality with which doctors suffer from compassion fatigue (Benson et al., 2009; Bodenheimer & Sinsky, 2014; Dasan et al., 2015; Shanafelt et al., 2009; Shanafelt et al., 2002), a specific type of burnout was reviewed. A recent, high-profile scandal in a UK hospital was used to highlight what some have termed a "crisis of compassion" in medicine and the possibility that doctors and nurses have committed acts of clinical negligence resulting in inhumane care and even caused patient deaths because of a lack of compassion (Francis, 2013). It was then suggested that while documenting and investigating compassion fatigue in healthcare is important, an exclusive focus here is not warranted; in part because the construct does not inform how we might seek to prevent it or, alternately, how we might enhance compassion.

The thesis then proposed a novel lens through which to consider how compassion is blocked in medicine. This view stands in stark contrast with how compassion has typically been viewed in medicine, namely that compassion flows from the doctor as if the physician

operated in isolation and was shielded from the influence of the patient, the clinical context, and the work environment. The first published paper in this thesis presented the Transactional Model of Physician Compassion (TMPC) (A. T. Fernando & Consedine, 2014a). Drawing from major models in emotions research (Lazarus & Folkman, 1987; Seybolt, 1976), this model posits that compassion emerges not only from "within" the physician but is also profoundly influenced by several other interrelated and dynamic factors: the patient, the clinical context and the environment where the clinical scenario unfolds.

Structurally, this way of grouping the possible factors influencing physician compassion was empirically supported by the second published paper in this thesis. The paper entitled "Development and initial psychometric properties of the barriers to physician compassion questionnaire" (A. T. Fernando & Consedine, 2014b) detailed the development of this instrument, designed as an initial means by which to operationalise the barriers to compassion in medicine. Consistent with the theoretical perspective offered in the Transactional Model of Physician Compassion (TMPC), psychometric analyses of the self-reported barriers to compassion consisted not only of doctor factors (e.g., fatigue, burnout), but also included clusters of barriers representing the negative impact of external distractions, patient/family factors, and complex clinical situations.

However, identifying the above barriers and providing a means by which to measure them is insufficient when one of the main goals of the thesis is to inform future interventions to enhance compassion in medicine. To this end, the next section of work in this thesis presented analyses that examine barriers to compassion as a function of the doctor's experience and specialisation. As was argued in the published paper itself, these variables act as proxies for particular types of training, the types of patients typically seen in the practice, and the particular systems and environments in which the doctor is embedded. The third published paper in this thesis entitled "Barriers to medical compassion as a function of

experience and specialisation: Psychiatry, paediatrics, internal medicine, surgery and general practice" (A. T. Fernando & Consedine, 2017) reported on the barriers to physician compassion among 444 NZ doctors; specifically testing whether clinical experience and specialisation might be associated with differing levels of the different barriers to compassion. In contrast to what might be expected based on the compassion fatigue literature, analyses show that less experienced doctors report greater barriers to compassion rather than fewer. Equally, various specialities report different levels of the different barriers indexed by this instrument. These findings are consistent with assertions from within the Transactional Model of Physician Compassion which suggests that barriers to compassion are a function of multiple variables.

To recapitulate: so far, the first half of the thesis has suggested that physician compassion stems from the dynamic but interrelated influences of physician, patient and family, clinical situation, and system factors. Second, it has been shown that barriers to physician compassion can be validly measured and that these barriers vary as a function of the doctor's age, experience, training, and specialisation in predictable ways.

However, while these papers have advanced the appreciation and enriched the characterisation of barriers to compassion in medicine, they do not *directly* address the question of how we might go about seeking to enhance physician compassion. Given that compassion is the very essence of medical practice, it is surprising that the literature on interventions to enhance compassion in healthcare is somewhat scarce. Unsurprisingly, most studies have targeted the doctor in isolation, attempting to enhance the doctor's empathy and compassion using role-modelling, self-reflection, self-regulation, communication skills, or mindfulness (Blanco et al., 2013; Fortney et al., 2013; Kalish et al., 2011; Krasner et al., 2009; Riess et al., 2012). Tellingly, only one study included consideration of difficult patient

interactions in their design (Riess et al., 2012) and no study to date has explicitly addressed system or environmental factors in enhancing compassion.

In contributing to this area of work, the second half of the thesis presents three further publications addressing the important issue of how to enhance compassion. The fourth publication, entitled "Enhancing compassion in general practice: It's not all about the doctor" (A. T. Fernando et al., 2016), provides an initial example of how thinking more broadly about the origins of compassion in medicine has the potential to enhance compassion using the particular challenges confronting physicians working in general practice medicine as an example.

In a similar line, because mindfulness has been used as a promising intervention to enhance compassionate care among trainee doctors and general practitioners (Krasner et al., 2009; Riess et al., 2012), the fifth paper in this thesis, "Mindfulness for surgeons" (A. Fernando, Consedine, & Hill, 2014) presents a conceptual argument outlining how mindfulness might be practically applied among surgeons.

The thesis then moves beyond "informing" possible interventions to experimentally test the viability of an increasingly common intervention in health – mindfulness. An initial experimental analogue study was conducted among medical students in a laboratory because of the high design cost of conducting studies in a clinical setting and or among practicing physicians. This work resulted in the final publication in the thesis, "Increasing compassion in medical decision-making: Can a brief mindfulness intervention help?" (A. T. Fernando, Skinner, & Consedine, 2017), a study that experimentally evaluated whether induced mindfulness increased compassionate responses among medical students.

Preface

As noted above, the second half of the thesis, which comprises three published papers, will focus on leveraging the theoretical model offered by the TMPC to identify possible interventions to enhance compassion amongst doctors. As will become clear, while interventions to enhance empathy have been evaluated for some time (Hojat, 2009; Kelm, Womer, Walter, & Feudtner, 2014; Misra-Hebert et al., 2012), research on enhancing compassion among doctors and medical students is scattered (Sinclair, Norris, et al., 2016) and has mostly involved designs that lack control groups and rely on a combination of self-reflection and didactic teaching (Blanco et al., 2013; Kalish et al., 2011). As importantly, in terms of the thesis' overall agenda, this work, as well as that of others described below, has targeted changes in physician functioning rather than looking to intervene in other areas of the factors that appear likely to influence compassion.

One group of studies has predominantly been conducted in the context of education, training, and patient communication. One study had 41 junior doctors (out of 400 who were approached) participate in a pre-post interventional design comprising a series of workshops designed to enhance compassion, journal writing, and the teaching of compassionate care to other junior doctors (Blanco et al., 2013). Participants reported the study as useful and necessary to their training and suggested that their self-assessed patient relationship skills had also increased. However, standardised assessments of physician empathy and interpersonal and communication skills did not change. Another pre-post study provided 251 pre-clinical medical students with an intervention comprised of didactic lectures, observed compassionate care, interactions with clinical members of a palliative care team, and clinical skills workshops (Shih et al., 2013). Self-report measures suggested improved clinical decision making and increased perceptions of compassionate care. A third study of 11 medical students evaluated clinical interactions with patients (Kalish et al., 2011). Students received

feedback from teachers, patients, and another medical student regarding their recorded interaction, in theory permitting time for self-reflection and self-assessment of compassionate care. Student ratings of the extent to which they had demonstrated compassionate care during the interview was *lower* following review, although what this implies about the intervention is unclear. A fourth report evaluated the effectiveness of monthly multi-disciplinary case-based, reflective rounds on staff perception for caring of patients and working with one another (Shah, Lambrecht, & O'Callaghan, 2017). This study is notable for its focus on the team (rather than the physician) but still lacked a control group. After the 12-month pilot programme, attendees reported enhanced knowledge in caring for patients and working with each other. A final study explored the role of a play depicting a cancer patient's life and death as experiential learning among first year medical students (Deloney & Graham, 2003). Although this team-based modality is a novel and promising approach, there is no real assessment of the effects of the intervention on compassion and, in any case, the post-test design and lack of a control group again limits conclusions that can be drawn.

A second, smaller grouping of studies has more formally evaluated interventions that might increase medical compassion. One study examined the effects of a brief mindfulness course on 30 primary care clinicians' burnout, anxiety, stress, resilience, and compassion scores (Fortney et al., 2013). Though uncontrolled, the results were promising in that there were reductions in self-reported job burnout, depression, and anxiety. However, the study did not record any change in scores on a brief, self-rated, validated compassion scale. Another study involving 99 junior doctors, represents the only randomised control trial of an intervention designed to increase compassion in medicine to date. Participants were randomised to receive either a standard post-graduate education course or a training package in empathy and compassion consisting of sessions in relational skills, empathy training, awareness of emotions, decoding facial expressions, and self-regulation skills (Riess et al.,

2012). Ratings of physician empathy made by multiple patients (M = 4.6 per physician) one month later showed greater increases in empathy in the experimental intervention group, as well as greater increases in physician knowledge of empathy and ability to decode emotion.

Overall, however, while these initial studies have shown promising effects, there are significant issues as regards the robustness of the designs employed including self-selection, pre-post measurement, small samples, and a reliance on self-reporting. Perhaps more to the point in terms of the point this thesis is currently making, most studies have focused on upskilling and training medical student or doctor functioning, rather than intervening in other areas of the healthcare system. This general problem remains despite evidence from recent meta-analyses that physician-oriented interventions (at least those targeting burnout) are less effective than those deployed at the institutional level (Panagioti et al., 2017). What is less than obviously missing from interventions specifically seeking to enhance clinical compassion are any interventional components that address patient factors, the clinical context of treatment, or environment and system factors.

In contributing to this nascent research area, the first paper of the three publications presented in this section of the thesis, "Enhancing compassion in general practice: it's not all about the doctor" (A. T. Fernando et al., 2016) considers a crisis in compassion and provides an illustration on how thinking broadly about the origins of compassion, using the framework of the TMPC, can illuminate practical approaches to attenuate barriers to compassion in a general practice context. In line with the structure offered by the TMPC, specific recommendations to augment compassion in general practice are grouped under doctor, patient and family, clinical and system factors. Under doctor factors, interventions to increase the motivation to care and mindfulness practices will be discussed. Regarding difficult patients and their families, it will be suggested that seeking to maintain the view that difficult patients are nonetheless *people* who are suffering and who, in many ways, are similar to us.

Concerning clinical factors, a suggestion is made for doctors to be aware of the shift in their mental state to an analytical (or non-caring) mode when confronted by complications or complex scenarios. Lastly, several ways to minimise system barriers to compassion will be explored including addressing workplace bullying, minimising distractions, and making doctors feel safe.

Citation

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A Crisis of Compassion in Medicine

"Patients were left lying in soiled sheets or sitting on commodes for hours. Some patients needing pain relief got it late or not at all" (Campbell, 2013). Such were the findings from the Mid Staffordshire Inquiry with recommendations for recruiting compassionate staff and clinician compassion training (Francis, 2013). However, this call for compassion is not new. Medical codes of practice require us to practice with compassion. Compassionate care should be routine, a daily motivation and practice not unlike antisepsis and hand washing.

The crisis of compassion in medicine is multi-faceted in origin and no universal panacea is likely to be found. Many of us cannot define compassion or articulate the differences between compassion and empathy. Others might argue that compassion training is redundant as doctors are either compassionate or not. We remain remarkably ignorant about compassion, unsure of what it is, where it comes from, or what might influence compassion in our practices.

Differentiating Compassion from Empathy

Compassion comes from the Latin roots *com*, which means "together with", and *pati*, "to bear or suffer" (Dougherty & Purtilo, 1995). Compassion is built on the capacity to

empathise – a form of cognitive and emotional perspective taking – but involves the additional step of wanting to alleviate suffering (Goetz et al., 2010). The distinction is important. An after-hours GP may recognise and feel the distress of a crying child having an asthma attack but, because he is now 30 minutes late in picking up his wife at the airport, rushes to the car park and lets colleagues manage the child. The family concerned might feel fobbed off and is unlikely to have experienced compassion as part of the clinical interchange. The doctor was empathetic but, technically, was not compassionate. Empathy without compassion is not only out of step with professional requirements but is differentially likely to sustain negative emotional states (e.g., distress) which may contribute to emotional fatigue and burnout. When confronted with intense suffering, shifting from empathy to compassion fosters positive emotions in the clinician rather than creating a situation in which empathetic misery results. We feel good when we are compassionate.

The literature on medical compassion has focused mainly on compassion fatigue. Viewing compassion via the lens of compassion fatigue has tended to imply a finite reservoir of caring "resource" and led to a focus on doctors as the only determinant of medical compassion. There is, however, no proof that compassion "runs out" or that compassion is a unitary function of the doctor. Indeed, our assertion here is that this way of thinking has both "blamed" doctors and blinkered us to a broader view of compassion as emerging from the interactive influences of patient, doctor, clinical and institutional context (A. T. Fernando & Consedine, 2014a, 2014b).

Let's Not Oversimplify the Origins of Medical Compassion

Being compassionate is not as simple as flicking on a switch or turning on a tap. Despite the best of intentions, compassion like other mental states (e.g., joy, fear, sadness, gratefulness, awe) is transient and impacted by internal and external variables. A doctor rushing to an important meeting might notice (but not act on) a crying pregnant woman in the

waiting room. Psychological studies suggest that when we are pressured to perform tasks seen as important, helping is reduced (Batson et al., 1978).

The Transactional Model of Physician Compassion (A. T. Fernando & Consedine, 2014a) suggests that compassionate care stems from the interactions between doctor factors (e.g., calm, refreshed, fatigued, burnout), patient factors (e.g., cheerful, angry, difficult family), environmental and system factors (e.g., noise, distractions from medical students, quiet consultation room) and clinical factors (e.g., case complexity, presence of unexpected side effects). The emergence of compassion is not only determined by the doctor but is profoundly influenced by context.

A toxic, soul-sapping, weekend night shift in an understaffed after-hours clinic make remaining compassionate towards an abusive, intoxicated, narcotic seeking patient difficult. This example serves to underscore the likelihood that rude or ungrateful patients as well as those who are seen as responsible for their suffering or avoiding self-help efforts will reduce compassion, no matter the doctor's intentions. Conversely, even the most burnt-out doctor will shed a tear and strive to assist six-year-old Tommy who gave you his Elmo to remember him by, before going home to die from untreatable leukaemia.

So What Does a Systemic View of Compassion Mean for the General Practitioner?

Like other social primates, doctors have a strong primitive and altruistic impulse that emerges in infancy (Warneken & Tomasello, 2006). For many of us, this impulse is why we chose medicine. Social neuroscience is progressively unpacking the brain regions, circuitries, neurotransmitters, and hormones involved in compassionate behaviour. We may be "wired" to feel good when we help. Below, we briefly revisit the Transactional Model, using it to organise a series of practical suggestions regarding sustaining and improving of compassion in general practice.

The origins of compassion: doctor factors. Early evidence suggests that interventions may enhance compassion and mitigate burnout and compassion fatigue (Klimecki & Singer, 2011). Even simple self-reminders may reinforce the motivation to be compassionate. Rather than the neutral maxim "*primum non nocere*" or "First, do no harm," silently repeating "May I be of benefit" when hand sanitising, touching a patient, or auscultating is a more proactive approach to daily professional practice. In many contexts, a significant proportion of our patients will be nearing the limits of what conventional treatment can accomplish and the most important thing we have to offer is our presence and compassion.

Mindfulness training increased objectively-assessed helping behaviour in a randomised control trial (Condon et al., 2013). Greater mindfulness allows the doctor to remain calm, objective, and non-judgmental despite the busy-ness of the clinical environment. Like any new skill, however, mindfulness requires training and regular practice. Similarly, compassion meditation has been incorporated into training protocols that aim to develop spontaneous empathy and altruistic responses to both the self and others by training the mind to see our common and shared desire to be happy and free of suffering.

The origins of compassion: patient factors. Compassion flows when we like our patients and the flipside is true as well. Rude, demanding, and difficult patients suck the oxygen from our compassion. There are several approaches to this difficulty, most of which involve a simple shift in perspective. First, we might strive to remember that the experience of a patient as "difficult" is partly a function of our own conditioning. Patients we find annoying are seen as "OK" by other team members. Second, we should remind ourselves that the most difficult of patients are suffering. If they were happy and content, they would not behave as such. Viewing such patients as persons who are suffering can change our defensive and threatened stance to one of wanting to care. At the very least, acknowledging patient distress may reduce our tendency to personalise any insults. No patient wakes up with the

primary motivation to make our lives hell. Finally (and most ambitiously), we might try to see aspects of ourselves in our difficult patients. If you find it hard to imagine common ground, reflect on the universal likelihood that they, like us, likely want happiness and to be free from suffering.

The origins of compassion: clinical factors. When doctors are confronted by challenging clinical scenarios, patients who are not improving, unexpected or complicated side effects, compassion likely suffers. We shift from wanting to connect with patients to a more analytical mode. We sometimes even blame our patients for not improving. However, being unaware that our response to complex clinical situations can switch us "offline" with our patients is neither sensible nor necessary. When doctors are cognitively or emotionally threatened by clinical situations, our minds can shift into a tunnel vision mode in which decisions like a quick pharmacological fix or an unnecessary referral are made.

The origins of compassion: environmental and system factors. Compassion also happens (or does not happen) in particular physical and institutional environments. Distractions during consultations including interruptions (e.g., phone calls, nurses, medical students), noise, and paperwork diminish compassion (A. T. Fernando & Consedine, 2014b). Feeling threatened by workplace issues or worries regarding patient complaints may shift the caring mind state to a defensive or aggressive approach to patients and colleagues. Many environmental factors are beyond the control of individual doctors and management thus has an important role in addressing them. At the individual level, doctors can limit interruptions during consultations, allowing only genuinely urgent contacts through. Equally, "blocking" time as dedicated to administrative work, returning calls, and managing prescription requests should also limit disturbances during consultations. Work environments with bullying, harassment, and discrimination not only affect clinicians but also harm patients (Royal Australasian College of Surgeons Expert Advisory Group, 2015). Addressing such issues is a

complex, but increasingly necessary challenge for doctors, likely requiring changes in leadership and culture and ongoing professional education of *all* doctors.

Concluding Remarks

GP's have to deal with large patient volumes, short consultation times, increasing bureaucracy, patient complaints, difficult patients, and clinic management dramas and dynamics. Not to mention personal struggles and family tussles, being a doctor is a complex biopsychosocial activity. With all these ingredients in the mix, it is easy to forget the main reason why many of us became doctors – to care. We need a broad view of compassion as occurring at the intersections between patient, doctor, clinical and institutional contexts. Sustaining compassionate medicine is not simple. It can, however, be understood and likely trained for. By rediscovering compassion in medicine, may we not just prevent another Mid-Staffordshire scandal, but also benefit our patients and ourselves.

Chapter 8 –Mindfulness for Surgeons

Preface

General practitioners deal with large volumes of patients and increasing bureaucracy and report the most barriers to compassion within the subsets of physicians that have been examined to date (A. T. Fernando & Consedine, 2017). In the previous chapter, practical suggestions were proposed to enhance and sustain compassion in general practice, as informed by the TMPC. These brief suggestions for intervention in the context of general practice addressed multiple elements of the factors thought to impact compassion in the general practice context, addressing aspects of the doctor, the patient, clinical factors, as well as environmental factors.

Although the overarching theme in this thesis is to advocate for the conceptualisation of medical compassion (and the associated interventions) as stemming from factors at multiple levels of the system, there are a variety of financial and practical reasons that suggest that interventions targeting the physician are not without merit. In addition to the fact that the evidence base reflects the historical focus on physicians, intervening to change patient behaviour is ethically and logistically problematic and no systems-targeted interventions designed to enhance medical compassion have been established to date.

One physician-targeted intervention that has the potential to enhance compassion worth exploring is mindfulness and even this literature is small and inconsistent. A rigorously designed study involving the randomisation of non-medical participants to mindfulness versus control conditions showed that eight weeks of mindfulness training resulted in enhanced compassionate responses to strangers who were suffering (Condon et al., 2013). Conversely, a pre-post, non-randomised study of a brief mindfulness-based intervention (five sessions, totalling 18 hours of course work), successfully reduced physician burnout, depression, anxiety and stress, but did not result in changes in physician compassion (Fortney

et al., 2013). Mindfulness was not directly assessed which made this study more difficult to interpret.

In theory, however, the development of greater mindfulness should allow the doctor to be calm, accepting of experiences and non-judgmental *via-a-vis* the clinical situations they are confronted with, which subsequently might enhance compassion. Although mindfulness training may be of benefit across specialties, those specialists vary in terms of their personality, working conditions, training experiences, patients, and their barriers to compassion (A. T. Fernando & Consedine, 2017), which suggests that the ways in which mindfulness might be optimally incorporated into professional practice and/or the specific issues that it might ameliorate must vary with the different types of physician. In this chapter, the possible benefits of mindfulness training among surgeons are specifically considered. In brief, surgeons are different from other specialists in that they are more procedurally focused, have longer training, work long hours and report high stress and burnout (Shanafelt et al., 2009). *Prima facie*, mindfulness might thus be of *particular* benefit for such a population. However, these same professional differences may also make involvement in the typical eight-week programme of secular mindfulness training problematic.

In laying the groundwork for the penultimate chapter in this thesis– an experimental study demonstrating the effects of mindfulness in compassion – this chapter considers how mindfulness training might be of benefit (and how it might be incorporated) in this specific group of medical professionals.

Citation

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Why Surgeons Need Mindfulness

In addition to having the knowledge and technical skills to practice surgery, an ideal surgeon is attentive and focused, relaxed, and deals with contingencies calmly, flexible and resilient, unburdened by previous cases or external situations, and is warm and compassionate towards patients, families and colleagues.

In reality, surgeons, like most humans, are typically not really present. Our minds are commonly described as "monkey minds", restless, confused, and easily distracted, with attention easily hijacked by stimuli; little different from a monkey that jumps from branch to branch side-tracked by fruits or anything of fleeting interest. Humans tend to daydream and ruminate about negative events, past failures, and future worries, often resulting in unhappiness (Brewer et al., 2011; Killingsworth & Gilbert, 2010). The mind reacts to such events resulting in anger, irritation, frustration, excitement, sadness, or disgust. This highly reactive and untamed mind can result in depression, anxiety, addictions, and interpersonal conflicts. In short, the untrained mind is prone to being unhappy (Killingsworth & Gilbert, 2010).

Mindfulness is an alternate mind state or way of being to the typical stressed and untrained state that predisposes physicians and surgeons to fatigue and burnout (Beach et al., 2013; Benson et al., 2009; Fortney et al., 2013; Goyal et al., 2014; Irving, Dobkin, & Park, 2009; Krasner et al., 2009). Mindfulness is distinct from other stress-management techniques such as going on holiday or using alcohol, both of which are forms of escaping from the problem. After the holiday or sobering up, the problem remains or is worsened. There is no escaping from stress as there will always be stress. However, instead of running away from stress, an alternative approach is to change the way we generate and relate to it. Mindfulness allows practitioners to look at their stress calmly, accepting the situation and then responding appropriately. Mindfulness is not a way out of daily troubles but instead is a "way in".

What Mindfulness Is (and What It Isn't)

Mindfulness is among the most poorly understood terms in contemporary psychological parlance. It is often confused with meditating, yoga, or any number of ostensibly "new age" fashions. Admittedly it is true that mindfulness has a tradition stretching back more than 2,500 years with roots in the Buddhist tradition where mindfulness and compassion are seen as the path for genuine happiness and enlightenment. However, modern conceptualisations of mindfulness have less to do with religion or spirituality and more to do with attempting to cultivate a very particular mental state, one characterised by continuous awareness of the present moment in a calm and accepting manner. Rather than ruminatively chewing on events that occurred in the past or frenetically evaluating what the future may bring, the attention of the mindful person rests on the here and now.

In some ways, however, mindfulness is also defined by what it is not. It is not religious. Though developed and practiced by Buddhists, mindfulness does not concern itself with deity worship, spirits, or the afterlife and does not require sitting in a lotus position, chanting "Om". Though traditional mindfulness meditation is practiced while seated, one can learn and practice mindfulness in many ways from sitting on a chair or walking from the car park to the hospital to possibly even while performing a procedure. Mindfulness does not involve stopping thinking, which is almost impossible to do while awake and conscious. Mindfulness will not eliminate stress and disappointments. However, mindfulness will allow a person to accept stress and frustration as part of the human condition.

Being attentive to the present moment involves knowing and accepting the emotional state we are in, whether we are relaxed, tense, frustrated, happy, neutral, grateful, or angry. In this mindful state, we are also aware of current bodily sensations (e.g., the breath, the feel of the gloves hugging the hands) as well as of environmental stimuli (e.g., a soft wind on the face while walking from the car park to the hospital, the subdued hum of a ventilator).

A mindful person is calmly accepting of whatever will happen, resulting in a relaxed mind. For example, if a surgeon accidentally nicks a major vessel, the surgeon curses himself, thinking that he should not be making mistakes. Worrying that this patient who happens to be a high court judge will die on the table does not help the impending disaster. He starts barking at his assistant who then makes more mistakes. The theatre atmosphere feels heavy and the anxious anaesthetist makes a poor judgment call. On the other hand, a surgeon who calmly accepts the accident as part of the life of even the most skilled surgeon will be focused and unruffled and can address the major bleed more effectively, supported by an unflustered team. Without denying their existence or import, mindfulness can tame the emotional parts of the brain (e.g., limbic system and amygdala) while enhancing the logical prefrontal cortex to come up with a repertoire of options (Creswell, Way, Eisenberger, & Lieberman, 2007).

Viewed in this manner, mindfulness is perhaps less foreign or off-putting to the surgeon. Indeed, the physical and psychological state of calm engagement, absorption, and focus the best surgeons experience while operating is a good example of the advantages mindfulness can bring to performance. This desirable state, sometimes called a “flow” experience, is a period of total immersion and union with the activity (Reid, 2011).

To reiterate, mindfulness is not a religious practice and instead is a mind training exercise. The best way to develop the ability to be mindful is to practice, beginning with short periods of mindfulness exercises then progressively incorporating mindfulness into daily activities. Learning mindfulness is not different from learning a new sport or a new surgical technique. It requires regular practice, patience, and an open attitude to the learning.

Mindfulness and Professional Surgical Practice: Why Should We Care?

So mindfulness is not a religion, nor is it a cult. It is a way of being mentally and physically “present” that is familiar to many surgeons (at least in work) and bears a resemblance to experiences of flow. The question that remains, however, is why surgeons

should care about mindfulness or consider its practice as a part of their professional development. Although there are few studies of mindfulness among healthcare professionals, early results are promising (Galantino, Baime, Maguire, Szapary, & Farrar, 2005). Studies among other non-professional and patient populations, however, suggest that mindfulness interventions and practice are associated with benefits in a massive range of mental and physical health outcomes.

Briefly, mindfulness has been linked to better quality of life (Carlson, Speca, Patel, & Goodey, 2003; Shapiro, Astin, Bishop, & Cordova, 2005), subjective well-being and mood (Chiesa & Serretti, 2010; Galantino et al., 2005), subjective health (Grossman, Niemann, Schmidt, & Walach, 2004), and sleep (Kreitzer, Gross, Ye, Russas, & Treesak, 2005); objective benefits are evident in patient samples including persons with pain, hypertension, and arthritis (Chiesa & Serretti, 2010). Mindfulness lowers stress (Chiesa & Serretti, 2009), anxiety and depression (Chiesa & Serretti, 2010; Hofmann, Sawyer, Witt, & Oh, 2010), emotional exhaustion (Fortney et al., 2013; Galantino et al., 2005; Krasner et al., 2009), prevents depression relapse (Teasdale et al., 2000), and reduces the extent to which stress produces depression and anxiety (Bränström, Duncan, & Moskowitz, 2011). Emotional reactivity to stressors is reduced (Arch & Craske, 2006; Britton, Shahar, Szepsenwol, & Jacobs, 2012; Erisman & Roemer, 2010; Keng, Smoski, & Robins, 2011) and recovery may be enhanced (F. A. Fogarty et al., 2015). Cognitively, mindfulness is associated with improved executive functioning (Moynihan et al., 2013), better attention (Jha, Krompinger, & Baime, 2007; Napoli, Krech, & Holley, 2005; Semple, 2010), reduced emotional interference in cognitive tasks (Ortner, Kilner, & Zelazo, 2007), more situationally-appropriate decision-making (L. M. Reynolds, Consedine, & McCambridge, 2014), and better behavioural regulation (Keng et al., 2011). Relevant to doctors, mindfulness lessens the chance of physician diagnostic errors (Sibinga & Wu, 2010) and promotes better connection with

patients (Beach et al., 2013; Krasner et al., 2009). Finally, mindfulness interventions have been linked to sustained improvement and recovery of immune function (Moynihan et al., 2013; Robinson, Mathews, & Witek-Janusek, 2003; Witek-Janusek et al., 2008), greater antibody titre response to influenza vaccinations (Davidson et al., 2003), greater telomerase activity (Jacobs et al., 2011), as well as increases in left-sided anterior activation (Davidson et al., 2003) but reduced limbic reactivity (Gard et al., 2012; Grant, Courtemanche, & Rainville, 2011; Jazaieri, Goldin, Werner, Ziv, & Gross, 2012; Riess, 2011; Westbrook et al., 2013) in brain imaging work. These effects are not inconsequential, with reviews suggesting a standardised effect size of 0.5 on health (Grossman et al., 2004). Similar to aspirin preventing future cardiovascular events (Antiplatelet Trialists' Collaboration, 1994; Antithrombotic Trialists' Collaboration, 2002; Patrono, Coller, FitzGerald, Hirsh, & Roth, 2004), mindfulness appears to be protective against physician burnout (Fortney et al., 2013; Krasner et al., 2009).

Given that many surgeons naturally practice a form of mindfulness while performing surgery, it is a short step to allowing this way of being to extend to other areas of life. Given the chronic, high levels of stress and burnout surgeons' experience (Shanafelt et al., 2009) and the repeatedly demonstrated benefits of mindfulness in terms of such outcomes, developing the capacity to be mindful may have immediate and very real mental and physical health benefits.

Mindfulness and the Surgeon: How to Do It?

So, mindfulness interventions appear to work. The average surgeon, however, may or may not have the time to allocate evenings for eight weeks in formal training (e.g., MBSR (Irving et al., 2009)) or to sit and meditate for substantial amounts of time. Fortunately then, while mindfulness skills can be acquired in this way, they can also be obtained in small "doses", structured to fit around the busy professional and personal lives most surgeons live.

Instructions for mindfulness exercises and meditations are offered on-line (e.g., www.calm.auckland.ac.nz (A. T. Fernando, Moir, & Kumar, 2014)), as smartphone apps (e.g., Smiling Minds (2014)) and in books (e.g., Siegel's (2010) book *Mindsight: The new science of personal transformation*).

Beginners can start with short daily exercises of 5 minutes, gradually lengthening the duration; regular practitioners allocate 30 minutes to formal practice as well as incorporating mindfulness states into daily activities. To begin, find a quiet place and time with minimal distraction or interruption. Remind yourself to try to focus on the exercise for the 5 minutes. Close your eyes and assume a half smile (creates a gentle positive state) and take three slow, deep breaths; pay attention to the sensations of breathing. After that, simply breathe normally while paying attention to the process. Sooner or later, you will inevitably get distracted by thoughts, sounds or judgments. When this happens, simply notice the distraction and return to the breath. At the end of 5 minutes, gradually cease the practice and be grateful for having those 5 minutes of quiet.

As when you learn a new sport, the DIY approach can only bring you to a certain level of proficiency. Many beginning meditators give up too quickly because they notice their minds are very busy and judge themselves as unable to be mindful. In actual fact, the contrary is true in that they are becoming mindful of their baseline busy mental state, which already indicates significant progress. To further enhance mindfulness skills, attending suitable courses or having one on one mindfulness coaching will be very helpful. Like any new skill, practice and patience is important. Try not to focus on the endpoint or outcome as the process itself is beneficial. Studies have shown that naïve mindfulness trainees notice improvement in mental and health outcomes, with brain changes and increased immune functioning with four to eight weeks of regular practice (Davidson et al., 2003; Jain et al., 2007; Krasner et al., 2009; Shapiro et al., 2005).

Within the demanding and stressful life of a surgeon, mindfulness is an alternative way of being. The evidence is strong in terms of the physical and psychological benefits of mindfulness. Though it requires practice, learning it is not hard and will come naturally.

Chapter 9 – Increasing Compassion in Medical Decision-Making: Can a Brief Mindfulness Intervention Help?

Preface

The first part of the thesis suggested that physician compassion is influenced by multiple variables including the physician, patient and family, clinical situation and environment or system factors. These barriers to compassion can be empirically measured, and systematically vary as a function of the doctor's age, experience, and specialisation.

Thus far, the second half of the thesis has focused on reviewing and evaluating interventions that have the potential to enhance compassion in medicine. In the preceding chapter, an intervention that might enhance compassion, mindfulness, was explored in the context of surgical practice. From a practical point of view in medicine where time demands are considerable, mindfulness represents a broad skill set of regulatory capacities that can be readily deployed in either the work of a general practitioner or the routines of a practicing surgeon. Empirically, however, while mindfulness appears to benefit doctors in various ways (Fortney et al., 2013; Krasner et al., 2009), evidence as to whether mindfulness practice can enhance medical compassion is lacking.

Research in non-medical samples suggests increases in compassion following mindfulness training are possible. For example, one well-designed randomised controlled trial (RCT) (Condon et al., 2013) with a rigorous behavioural measure of compassion, found that an 8-week mindfulness training program resulted in greater compassionate behaviour. In a separate RCT, the same research group (Lim, Condon, & DeSteno, 2015) later found that undergraduate university students who received three weeks of mindfulness training versus cognitive skills training displayed more compassionate behaviours as assessed by giving up their seat to a confederate on crutches. Although they have their limitations, both studies

point to mindfulness training as engendering compassionate behaviours in non-medical participants.

However, the question remains as to whether the possibly beneficial effects of mindfulness on compassionate behaviours in non-medical samples can be generalised to physicians and trainees. As has been extensively discussed earlier in this thesis, medical compassion is special in a number of ways. Compared to non-medical compassion, compassion in medicine is a requirement and expectation. It is expected to flow from doctors as if it were on tap in all clinical situations, even for patients who are perceived to be difficult or "undeserving".

To this point, only two studies have evaluated the effects of mindfulness on compassion among doctors. The first study was a non-randomised, pre-post design study of 30 primary care physicians who received an abbreviated mindfulness course for 18 hours. The study suggested improvements in burnout and mood scores but no change in scores on a validated compassion scale (Fortney et al., 2013). The second study was a RCT of junior doctors who received either a standard post-graduate medical education programme or a suite of empathy and relational training protocols which included lectures, videos, skills training in decoding facial expressions, breathing exercises, and mindfulness (Riess et al., 2012). Both interventions were delivered in three 60-minute modules spread over 4 weeks. In line with expectation, the empathy and mindfulness training group, but not the control group, showed significant improvements in a patient rated outcome of care which included some measures of compassion. Again, however, while this study is promising in terms of demonstrating possible benefits for mindfulness among physicians, it is difficult to separate the specific effects of mindfulness from the other interventions. Thus, the question remains as to whether mindfulness training alone increases compassion amongst doctors. The following chapter

presents an experimental test examining the effects of a mindfulness induction on self-report and behavioural indices of medical compassion.

A second issue that is evident in mindfulness research but not considered vis-à-vis compassion in medicine regards the question of for whom mindfulness training is of benefit. In non-medical samples, various potential moderators of mindfulness have been identified including trait mindfulness (Shapiro, Brown, Thoresen, & Plante, 2011), level of executive functioning (Flook et al., 2010), neuroticism, extroversion and other personality factors (de Vibe et al., 2015), and level of depression and anxiety (Arch & Ayers, 2013). If mindfulness indeed works in enhancing compassion in doctors, identifying the particular doctor characteristics or factors that moderate this benefit will help identify the particular subsets of physicians most likely to benefit. The published paper presented in the following chapter examines whether trait self-compassion moderates the effect of mindfulness on medical compassion.

Citation

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Introduction

Compassion is an essential component of medical practice. It is expected by patients (Emanuel & Dubler, 1995; L. A. Fogarty et al., 1999; Meagher, 2006; Old et al., 2011; Wiggins et al., 2009; Youngson, 2011, 2012), regulatory bodies (American Medical Association; New Zealand Medical Association) and doctors themselves (Lown et al., 2011). More than being an expectation, however, compassionate care matters. Compassion predicts greater patient satisfaction, better patient-physician relationships, and better patient health

outcomes (Canale et al., 2012; L. A. Fogarty et al., 1999; Lelorain et al., 2012; Steinhausen et al., 2014).

In medicine, as elsewhere, compassion is often confused with empathy. However, while empathy refers to the cognitive and emotional processes involved in adopting another's perspective (Engelen & Röttger-Rössler, 2012), compassion involves the additional step of wanting to relieve suffering (Goetz et al., 2010; Jazaieri et al., 2014; Klimecki et al., 2013). However, sustaining compassion in medicine can be difficult (Hojat et al., 2009) and compassion fatigue impacts between 20% and 70% of physicians (Benson et al., 2009; Lee et al., 2008; Markwell & Wainer, 2009; Shanafelt et al., 2002); nearly half of patients and doctors report that compassionate care is missing in the health care system (Lown et al., 2011). Developing educational approaches and interventions that enhance or sustain compassion have become serious challenges in modern medicine and medical training (A. T. Fernando & Consedine, 2014a).

One approach that is gaining increasing traction as being of possible benefit in enhancing compassion is found in the study of mindfulness. Mindfulness, a continuous awareness of present moment experience in a calm and non-judgmental manner, has the potential to enhance compassionate care (Epstein, 1999; A. Fernando et al., 2014). In theory, mindfulness may help clinicians become more aware of their own psychological processes, biases, and prejudices, attend to the patient better, and become more flexible (Epstein, 1999). Although their impact on compassion among medical trainees has yet to be investigated, mindfulness interventions reduce stress and burnout among health professionals (Beckman et al., 2012; Fortney et al., 2013; Goodman & Schorling, 2012; Krasner et al., 2009), and enhance physician-patient connection (Beach et al., 2013; Krasner et al., 2009). Perhaps because of such benefits, mindfulness training is increasingly a part of the teaching curriculum in medical schools in the US (University of Rochester), Canada (University of

Toronto), Australia (Monash University), and New Zealand (University of Auckland) (Dobkin & Hutchinson, 2013).

However, despite evidence that compassion is often compromised in medical care (Lown et al., 2011; Youngson, 2011, 2012) and that compassion can be increased with training (H. Y. Weng et al., 2013), studies assessing the possible efficacy of interventions to enhance compassion among medical practitioners or evaluating the groups in which they might be successful are scant. One small, uncontrolled, pre-post study among 30 primary care physicians found benefits in physician mental health but no benefits in terms of self-reported compassion (Fortney et al., 2013). Another pre-post study testing a broad intervention including mindfulness training among 70 primary care physicians found that increases in mindfulness predicted improvements in self-rated perspective taking (Krasner et al., 2009). Such benefits are consonant with interview data suggestive of potential benefits following a "mindful communication" program among primary care physicians (Beckman et al., 2012). Data from non-medical populations has found that mindfulness training predicts greater odds of compassionate responding (offering a seat to a person on crutches) to a suffering stranger; whether such findings will replicate among medical professionals is unclear (Condon et al., 2013; Lim et al., 2015).

Overall then, while early studies among medical professionals show promise, our capacity to make empirically-informed decisions regarding compassion-enhancing interventions and educational programs is limited insofar as designs have tended to be pre-post (i.e., experimental controls are lacking), are based in self-report data alone, and fail to control for social desirability biases in a domain where the target behaviour (compassion) is a professional requirement and thus expected. The current report presents an experimental design, assesses both self-reported and objective indices of compassionate behaviour, and takes several steps to control for social desirability bias. Our primary aim was to assess

whether randomisation to a brief mindfulness induction would lead to greater compassionate responding and behaviour among trainee physicians using clinical vignettes and a behavioural test.

In addition, prior work suggests that personality factors may moderate the impact of mindfulness interventions, with persons higher in dispositional mindfulness at baseline sometimes showing greater benefits (including increases in empathy) (Shapiro et al., 2011). Following suggestions that *self*-compassion may be a necessary precursor to other-focused compassion, we tested whether a brief mindfulness induction would equally impact compassionate responding at different levels of dispositional self-compassion (Neff & Pommier, 2013). Self-compassion entails being kind and understanding toward oneself in instances of pain or failure, perceiving one's experiences as part of the larger human experience and holding painful thoughts and feelings in mindful awareness rather than over-identifying with them (Neff, 2003). Self-compassion has an established link to mindfulness (Neff & Dahm, 2015) and is linked with altruistic behaviours including empathetic concern and other-focused compassion (Neff & Pommier, 2013). Therefore, a second aim of the current report was to test the possibility that trait self-compassion may be either (a) a better predictor of compassionate responding or (b) may moderate the impact of mindfulness intervention.

Method

Participants. After obtaining ethics approval (University of Auckland Human Participants Ethics Committee Ref 010361) we recruited 83 currently enrolled medical students, aged 18+ years and fluent in English. Participants were recruited through social media, advertising, and word of mouth. The advertisement mentioned about a study on "emotions and clinical decision making" but did not make reference to empathy or

compassion. Participants ranged from 18 to 37 years (M = 21.41, SD = 3.12), 54.2% were female, and students reported an average of 2.75 years of training (SD = 1.17).

Procedure. After providing consent, participants completed an online questionnaire including a measure assessing trait self-compassion before attending a 40-minute laboratory session. Once at the laboratory, participants were greeted and asked to take a seat, before listening to a 10-minute mindfulness induction exercise (mindfulness condition) or a speech on civic service (control condition) through headphones. Participants were randomised prior to the laboratory session. The mindfulness induction consisted of information about mindfulness and experiential exercises designed to increase state mindfulness (Erisman & Roemer, 2010). After the induction, participants completed a state mindfulness and emotions manipulation check and attached a small microphone to their clothing. The experimenter then left the room and participants viewed a series of clinical vignettes in which they made ratings about several difficult patients. After entering their responses to each patient on several dimensions, an audio recording of their verbal response to each patient was recorded; these data are analysed elsewhere. Next, having rated all vignettes, participants allocated the time to be spent with each hypothetical patient within a constrained total of 60 minutes. A covert behavioural compassion test followed before the participant was thanked, debriefed, and the study terminated.

Trait Measures

A baseline questionnaire assessed several measures based on their relevance to the core mindfulness and compassion constructs. In line with recommendations regarding the reduction of method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the measurement of the potential trait moderator (dispositional self-compassion) and the outcome ratings in the laboratory were separated in time, reducing the tendency for measures to covary for methodological reasons (Podsakoff, MacKenzie, & Podsakoff, 2012). Although several

measures were administered in the baseline phase, this report concentrates on those relevant to the data being presented here.

Trait self-compassion. Because self-compassion may be a necessary precursor for compassionate responding to others (Neff & Pommier, 2013), participants completed the Self-Compassion Scale (Neff, 2003). The SCS is a 26-item measure that uses a 1 (*almost never*) to 5 (*almost always*) metric to rate several aspects of dispositional self-compassion. Example items include, "*I try to be understanding and patient toward aspects of my personality I don't like"* and "*I'm disapproving and judgmental about my own flaws and inadequacies".* The scale has adequate psychometric properties and was internally reliable in this sample (α= 0.90).

Social desirability. Given that medical training normatively includes the development and maintenance of prosocial traits, the expectation that trainee health professionals will be compassionate is very high; such bias is likely exaggerated by recruiting and conducting the study in the training context (Burks & Kobus, 2012). Consequently, we administered the Marlowe-Crowne Short Form C (MCSF-C), a scale that allows for the brief measurement of presentational concerns likely to bias self-reports (W. M. Reynolds, 1982). The MCSF-C is a 13-item true/false scale that is widely used and has adequate psychometric properties; it was reliable in this sample (α= 0.76).

Laboratory Measures

State mindfulness. To ensure that the mindfulness induction was successful, the 13 item Toronto Mindfulness Scale was administered immediately following the manipulation (Lau et al., 2006). Participants rate items on a scale of 1 (not at all) to 5 (very much) according to how well each statement describes current experience. The TMS can be aggregated into two subscales – decentring and curiosity – or a total score, with higher scores indicating greater mindfulness. Internal reliability was adequate for both decentring (α=.79) and curiosity

(α=.88) subscales. However, because of our focus on the possibility that mindfulness may allow trainee physicians to experience negative emotions in response to difficult patients without necessarily *acting* emotionally, we concentrated on the decentring component. Decentring is generally viewed as the ability or tendency to be present-focused but with a non-judgmental and accepting stance regarding thoughts and feelings (Fresco et al., 2007). It has been suggested that decentring may allow people to have negative emotional responses without translating them into behaviour (L. M. Reynolds, Lin, Zhou, & Consedine, 2015).

State affect. To ensure that our manipulation was specific to mindfulness rather than eliciting changes in related constructs, we administered the Brief Differential Emotions Scale (Brief DES) (Malatesta & Izard, 1984). The Brief DES is an adaptation of the "state" version of the Differential Emotions Scale (DES III), a 30 item scale assessing 10 emotions (three items per subscale) with strong psychometric properties (Izard & Bartlett, 1972; Youngstrom & Green, 2003). In the Brief DES each of the 10 emotions is described by the three synonyms taken from items in the original scale and, in this case, was supplemented by a single item with three adjectives specifically assessing each of low arousal positive (calm, at rest, peaceful) and negative emotions (dull, sleepy, sluggish) (Malatesta & Izard, 1984). This brief form is useful when multiple measures are being used and excessive measurement might produce measurement effects. For this report, items were grouped into general positive and negative affect, with the low arousal positive emotions item examined independently. Internal reliabilities for the two item positive affect scale was slightly low (α=.48) while that for negative affect (α=.63) was adequate.

Clinical vignettes. To test whether self-compassionate traits or a brief mindfulness induction predicted compassionate responding among trainee physicians, participants were given a series of hypothetical case vignettes. Vignettes described initial interactions with a series of patients with challenging personal and clinical characteristics, a key barrier to

compassion and diagnostic decision-making (A. T. Fernando & Consedine, 2014a). Methodologically, vignettes can convey complex data relevant to decision-making in a controlled and efficient manner (Greenhalgh, Chowdhury, & Wood, 2006). Patients were designed to be difficult in order to (a) counteract the "demand" for compassion among medical trainees and (b) evoke feelings of judgement, suspicion, or powerlessness (Steinmetz & Tabenkin, 2001). To reduce the impact of idiosyncratic interpretation, five named patient vignettes were developed from the 'difficult patient' literature (Paddam, Barnes, & Langdon, 2010; Wilson, 2005). However, preliminary analyses indicated Vignette 5 was responded to very differently from the other vignettes and we thus proceeded to analyse data for only the first four vignettes.

In a standard order, participants rated how they felt towards each patient and what they would do during consultations, two important and separate aspects of physician response (Greenhalgh et al., 2006). Ratings were made regarding how much participants liked the patient, wanted to help, and felt caring towards the patient. Because of their high sensitivity, naturalistic nature and superior numerical properties, ratings were made on 10 cm VAS (visual analogue scale) (Erisman & Roemer, 2010; Price, McGrath, Rafii, & Buckingham, 1983). A final rating regarding subjective closeness to patients was made using the Inclusion of Other in Self Scale, a method that asks participants to choose among a series of 7 images in which two circles overlap to varied degrees; greater overlap indicates greater feelings of closeness to the hypothetical patient (Bakker, Schaufeli, Sixma, Bosveld, & Van Dierendonck, 2000). Other exploratory ratings regarding possible referrals, patient responsibility, and acceding to patient demands were difficult to interpret and are not considered here.

Objective measures. Two additional measures assessed more objective aspects of compassionate responding. First, participants were required to allocate consultation time to

each patient within a constrained period (totalling 60 minutes across patients); allocating and balancing time is a clinically important process and differences may reflect aspects of compassion. Finally, a covert behavioural measure assessed compassionate behaviour directly. Having been told the study was finished, participants were asked to help the research assistant with an unrelated administrative task (45 minutes of help with questionnaire compilation work that was outstanding because of a personal commitment). Given skew in the raw data, responses were scored as 0 (No help), 1 (willing to help but less than 45 minutes), or 2 (willing to help for 45 minutes or more if needed) for analytic purposes.

Data Analysis

A 2 (high versus low trait self-compassion) x 2 (mindfulness versus control condition) MANOVA was used to assess differences between groups on the TMS state mindfulness measure (and the measures of state emotion). To address our primary questions, we assessed patient vignette ratings, time allocations, and the behavioural measure using parallel 2 (trait) x 2 (condition) ANCOVAs in which social desirability was controlled.

Results

Manipulation check. We first sought to verify that mindfulness had been effectively elicited in the appropriate condition. A 2 (high versus low trait self-compassion) by 2 (mindfulness versus control condition) MANOVA showed that decentring scores were substantially higher in the mindfulness condition, $F(1, 79) = 11.55$, $p < .001$, part $\eta^2 = .13$. Conversely, however, there were no differences in positive affect, $F(1, 79) = .25$, $p > .05$, part $\eta^2 = .00$, negative affect, $F(1, 79) = 1.68$, $p > .05$, part $\eta^2 = .02$, or calm affect, $F(1, 79) = .01$, $p > .05$, part $\eta^2 = .00$, as a result of the manipulation (see Table 9.1). As importantly, there was no effect for trait self-compassion, $F(1, 79) = 0.53$, or an interaction between self-compassion and mindfulness, $F(1, 79) = 0.52$, indicating mindfulness was induced equivalently at both levels of trait self-compassion (see Table 9.1 below).

Table 9.1: Sample demographic characteristics, social desirability and mindfulness (decentring) scores as a function of condition and dichotomised trait self-compassion

Variable	Control		Mindfulness	
	Low SC	High SC	Low SC	High SC
Age	22.11 (4.20)	21.22 (2.92)	21.19 (2.64)	21.20 (2.73)
% Female	63.2%	39.1%	57.1%	60.0%
Years Training	2.89 (1.10)	2.57 (1.16)	2.76 (1.14)	2.80 (1.32)
Social Desirability	5.00 (2.70)	5.48 (3.81)	4.33 (2.82)	6.50 (2.98)
Decentering	2.76 (0.73)	2.83 (0.79)	3.22 (0.58)	3.36 (0.52)
Positive Affect	3.00 (0.75)	3.46 (0.86)	3.02 (0.91)	3.25 (0.80)
Negative Affect	1.51 (0.49)	1.38 (0.26)	1.37 (0.32)	1.32 (0.27)
Calm Affect	4.11 (0.66)	4.17 (0.78)	3.90 (1.04)	4.40 (0.75)

Table 9.2*:* Sample patient liking, caring, desire to help, subjective closeness and actual behaviour scores as a function of condition and dichotomised trait self-compassion

Variable	Control		Mindfulness	
	Low SC	High SC	Low SC	High SC
Patient Liking	39.75 (9.00)	50.37 (11.75)	44.48 (10.14)	44.92 (11.48)
Caring for Patient	58.99 (13.99)	65.99 (14.14)	63.81 (17.65)	56.29 (13.33)
Desire to Help Patient	70.39 (16.17)	79.73 (14.83)	72.27 (22.75)	73.12 (17.04)
Subjective Closeness to Patient	2.96 (0.62)	3.90 (0.99)	3.32 (0.86)	3.19 (0.92)
Objective Helping Behaviour[a]	1.84 (0.60)	1.26 (0.75)	1.57 (0.75)	1.85 (0.67)

Note: [a] Helping behaviour scored such that 0 = No help, 1 = 45 minutes or less of help, and 2 = 46 minutes or more help if needed

Trait self-compassion and state mindfulness: vignette ratings. Having established that mindfulness was elicited as intended we moved to consider whether trait self-compassion and/or state mindfulness were associated with more compassionate responses to hypothetical difficult patients. Means and standard deviations for these ratings can be seen in Table 9.2.

Greater trait self-compassion predicted greater liking, $F(1, 79) = 4.37$, $p < .04$, part $\eta^2 = .05$, but mindfulness did not, $F(1, 79) = 0.01$. Greater social desirability predicted marginally greater liking ratings, $F(1, 77) = 3.88$, $p = .053$, part $\eta^2 = .05$; interestingly, the interaction between self-compassion and condition was also significant, $F(1, 77) = 4.18$, $p < .04$, part $\eta^2 = .05$. Inspection of the interaction plot and follow-up testing (see Figure 9.1a below) showed that while high self-compassion participants expressed greater liking in the control condition, there were no differences as a function of self-compassion following the mindfulness induction.

A parallel model on ratings of participant's desire to help, showed that neither trait self-compassion, $F(1, 79) = 0.53$, mindfulness condition, $F(1, 79) = 0.47$, or their interaction, $F(1, 79) = 2.26$, predicted desire to help (see Figure 9.1b); as might be expected greater social desirability was associated with greater reports of a desire to help, $F(1, 79) = 6.74$, $p < .01$, part $\eta^2 = .03$.

Third, we tested whether trait self-compassion and/or state mindfulness were associated with reporting greater care for difficult patients. Again, neither trait self-compassion, $F(1, 79) = 0.27$, mindfulness condition, $F(1, 79) = 0.49$, predicted reports of caring for hypothetical patients; greater social desirability was associated with marginally greater reports of caring $F(1, 79) = 3.51$, $p = .06$ and the interaction between self-compassion and mindfulness condition was again significant, $F(1, 79) = 7.08$, $p < .01$, part $\eta^2 = .08$. Inspection of this interaction (see Figure 9.1c), showed that while the mindfulness induction

increased caring among those with lower self-compassion, it had the opposite effect among those with greater self-compassion.

A final model was conducted on ratings of patient closeness. Trait self-compassion predicted ratings of marginally greater closeness, $F(1, 79) = 3.54$, $p = .06$, part $\eta^2 = .04$, but mindfulness condition, $F(1, 79) = 0.55$, and social desirability, $F(1, 79) = 0.37$, were unrelated. Once more, the interaction between self-compassion and mindfulness condition was significant, $F(1, 79) = 8.08$, $p < .05$, part $\eta^2 = .09$. Inspection of this interaction (see Figure 9.1d), revealed a pattern similar to the liking ratings insofar as while persons with greater self-compassion rated themselves as closer in the control condition, the mindfulness induction increased closeness ratings among the less self-compassionate portion of the sample.

Figure 9.1 Trait vignette ratings; liking, helping, caring and closeness

Figure 1a: Mean patient liking scores as a function of experimental condition and dichotomized trait self-compassion. Error bars represent 1 se.

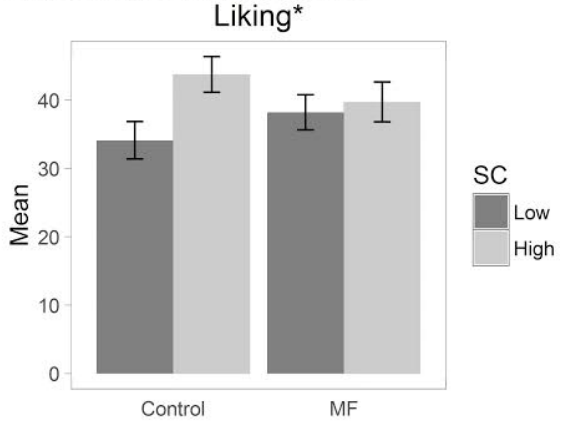


Figure 1b: Mean desire to help patient scores as a function of experimental condition and dichotomized trait self-compassion. Error bars represent 1 se.

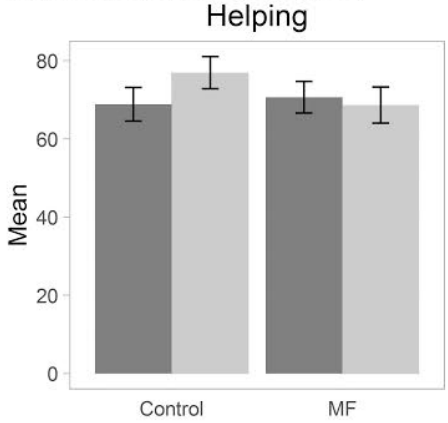


Figure 1c: Mean care for patient scores as a function of experimental condition and dichotomized trait self-compassion. Error bars represent 1 se.

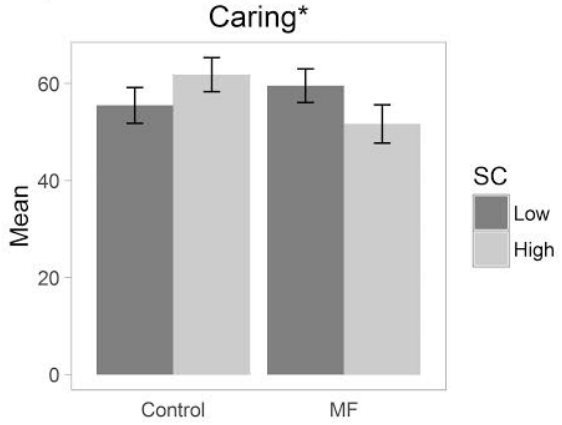
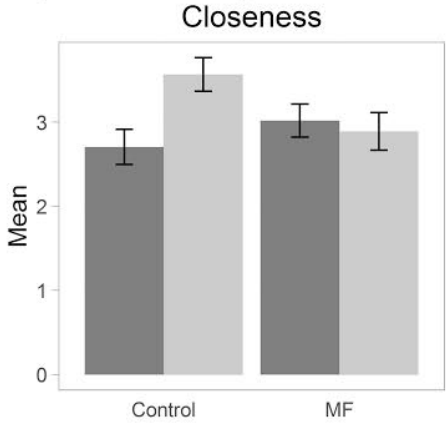


Figure 1d: Mean subjective closeness to patient scores as a function of experimental condition and dichotomized trait self-compassion. Error bars represent 1 se.



Trait self-compassion and state mindfulness: objective measures. In the final phase of analysis, we tested whether trait self-compassion, induced mindfulness or their interaction predicted time allocations and actual helping behaviour in the laboratory setting. A mixed model factorial ANCOVA with vignette as a within-subject variable, trait compassion and condition served as between-subject variables, and controlling for desirability was conducted on time allocations. Unsurprisingly, given the constrained "total time" nature of the task, there were no effects for trait self-compassion, $F(1, 79) = 1.45$, mindfulness, $F(1, 79) = 0.08$, or their interaction, $F(1, 79) = 0.21$; social desirability scores

were also non-significant, $F(1, 79) = 1.80$. However, there was a significant interaction between vignette and self-compassion, Wilk's $\lambda = 0.90$, $p < .05$, part $\eta^2 = .10$. (see Figure 9.2a below) which showed that while persons with lower self-compassion varied the amount of time allocated to each patient, persons with high self-compassion allocated a relatively consistent amount of time for each.

Finally, a factorial ANCOVA predicting helping behaviour in the laboratory showed no main effects for either trait self-compassion, $F(1, 79) = 0.90$, or mindfulness, $F(1, 79) = 1.06$. However the interaction between self- compassion and mindfulness induction was significant, $F(1,79) = 7.57$, $p < .05$, part $\eta^2 = .09$. Inspection of the interaction (see Figure 9.2b) showed that the mindfulness induction increased the helping behaviour of those higher in self-compassion and did not impact behaviour among the less self-compassionate.

Figure 9.2 Trait objective measures; time and behaviour

Figure 2a: Participant time allocations per patient as a function of dichotomized trait self-compassion. Error bars represent 1 se.

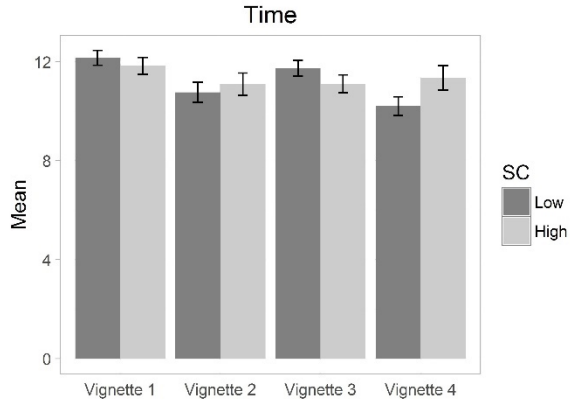
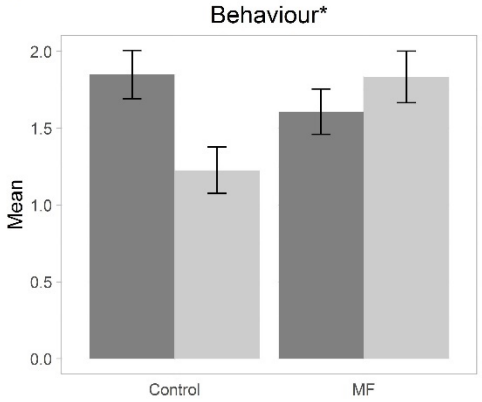


Figure 2b: Mean helping behaviour scores in laboratory as a function of experimental condition and dichotomized trait self-compassion. Error bars represent 1 se.



Discussion

Compassion is central to the practice of medicine. It is expected by patients, regulatory bodies, and doctors themselves and is an important component of patient-centred medical education (Youngson, 2011). However, compassion appears to fade with time and large numbers of clinicians suffer from compassion fatigue (Benson et al., 2009; Huggard, 2003; McCray et al., 2008; Najjar et al., 2009; Showalter, 2010). Only a few studies have assessed whether mindfulness increases compassion and none of these interventions have been tested among doctors or medical students. This study extends the literature linking mindfulness and compassion by testing whether a brief mindfulness induction increased compassionate decision making and behaviours among trainee physicians. Below we revisit our findings regarding whether mindfulness might be suited to increasing compassionate attitudes and behaviour among medical students, consider the specific subsamples of trainee physicians for whom it might be more or less suited, and consider implications for intervention and medical education.

Our analysis showed that the brief mindfulness induction induced state mindfulness comparably across differing levels of trait self-compassion. However, somewhat inconsistent

with preliminary work suggesting possible self-rated benefits to mindfulness training (Krasner et al., 2009), studies among non-medical student samples (Condon et al., 2013; Lim et al., 2015) and suggestions from commentators (Epstein, 1999), the brief mindfulness induction *per se* was unsuccessful in engendering greater medical compassion, at least as indexed by ratings in response to difficult patient vignettes. We had expected that decentring, the aspect of state mindfulness perhaps most analogous to the 'non-reacting' and 'non-judging' components of trait mindfulness, might reduce the tendency for negative emotional responses to "push" through into ratings and behaviour.

It may be that there is something special about compassion or helping in medical contexts (where care is mandated), although theory suggests this is unlikely (A. T. Fernando & Consedine, 2014a). It is possible, for example, that the repeated nature of helping or the fact that it is expected in medical contexts lead to different (weaker) effects than those seen in other samples (Condon et al., 2013; Lim et al., 2015). This possibility noted, while prior mindfulness interventions have shown improvements in self-reported mental health , stress and burnout (Bazarko, Cate, Azocar, & Kreitzer, 2013; Beckman et al., 2012; Fortney et al., 2013; Goodman & Schorling, 2012; Krasner et al., 2009), and self-rated perspective taking among primary care physicians (Krasner et al., 2009), one prior study has failed to find changes in compassion (Fortney et al., 2013). Initially then, our findings appear more consistent with the Fortney, et al. (2013) report insofar as the brief mindfulness induction did not lead to systematic increases in compassionate responses to patients. Also, our study compared to the other studies mentioned was a brief 10-minute mindfulness induction versus much longer mindfulness training consisting of several weeks.

A second focus of the current study was to evaluate whether mindfulness might differentially impact compassionate responding in distinct subsamples of trainee physicians. Analyses showed that the brief mindfulness induction predicted a favourable pattern – greater

'liking' and 'caring' (and marginally greater 'closeness') – but only among medical students with lower self-compassion. In the absence of prior work testing the effects of a brief mindfulness induction on compassion among medical trainees, interpretation of this pattern is not simple.

One possible explanation is that the mindfulness induction differentially reduced the tendency to negatively appraise or blame the difficult patients among those with low self-compassion. Prior studies in non-medical samples have also found mindfulness to be more beneficial among less self-compassionate and more self-critical groups (Lown et al., 2011; Neff & Pommier, 2013). Self-compassion – the ability/tendency to approach our own suffering and inadequacies with warmth and understanding – may be a necessary precursor to other-focused compassion (Neff, 2012). Thus, because persons with lower self-compassion are more judgmental of both the self and others and might thus be less compassionate when the "other" is seen as responsible for their suffering , increasing mindfulness might differentially impact the less self-compassionate (Oveis, Horberg, & Keltner, 2010; Petersen, Sznycer, Cosmides, & Tooby, 2012; Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002). Because the patients most in need of compassion are also differentially likely to be those seen as responsible for their suffering, further work assessing this possibility is clearly needed.

Conversely, however, the intervention did not improve patient ratings among the more self-compassionate subsample and, in some instances, appear to have led to less compassionate patient ratings. A proposed explanation for the lack of improvement in patient ratings is that medical trainees with greater self-compassion (who probably were more mindful at baseline) became more aware of their (negative) responses to difficult patient vignettes which was then reflected their negative patient ratings. It is also possible that what is seen as "helpful" for a patient is not a simple matter or that the short induction was not

"dosed" enough to cause a positive shift in this group's perspective taking. The scenarios included a demanding woman with multiple medically-unexplained symptoms and a middle aged very overweight, unkempt, smelly and non-compliant man asking for his penis to be checked after having sex with a prostitute. Hence, while these are the very patients that likely most need compassion, they are not easy patients to like. It has been suggested that state mindfulness may increase the awareness of emotionality during decisional tasks (L. M. Reynolds et al., 2014; L. M. Reynolds et al., 2015), leading to greater incorporation of emotions in decision-making (Langer, 1989) or more "direct" and honest ratings.

Perhaps more importantly in terms of healthcare delivery, the mindfulness induction increased actual helping behaviour among those with higher self-compassion in the laboratory context. The compassionate responding occurred despite having no change in the trainee physician's appraisal of negative vignettes. Data from non-medical samples suggests that mindfulness training predicts offering a seat to a suffering stranger (a person on crutches) (Condon et al., 2013) , even when the intervention is mindfulness-based, administered online, and comparatively brief (Lim et al., 2015) . Mindfulness is associated with increased perspective taking and empathic concern which can facilitate increased actual helping behaviour which was observed in this experiment. The helping behaviour test occurred after difficult patient vignettes were presented to the students and, despite this, the high self-compassion mindfulness group was still willing to assist the laboratory assistant with an unrelated task. This may be perhaps because greater decentring helps people accept negative emotions such that they do not manifest in behaviour as readily (L. M. Reynolds et al., 2015). It may be that the improvements in emotion regulation (Hölzel et al., 2011) and decentring (Fresco et al., 2007) that accompany mindful states attenuate the extent to which negative emotional responses transition into behaviour. Decentring allows an individual to disidentify from their internal experience and be more non-judgmental with reduced reactivity when

confronted with negative stimuli (Bernstein et al., 2015). More speculatively (given that it was not directly tested), it may be that in accepting, experiencing, and reporting negative responses to patients, mindful trainee physicians may actually be more willing to help them. As to why the high self-compassion subset appeared more willing to help may be explained by previous work suggesting that higher levels of self-compassion are linked to greater perspective taking, compassion to humanity, empathetic concern, and altruism (Neff & Dahm, 2015; Neff & Pommier, 2013).

Implications for medical education

In addition to acquisition of medical knowledge, medical education values training that emphasises the alleviation of suffering – the essence of compassion (Association of American Medical Colleges, 2014; Stern, 1998). With the recent Stafford Hospital scandal (Francis, 2013) and several findings suggesting that empathy and, potentially, compassion decline with progress through medical school (Cox, Irby, Cooke, Sullivan, & Ludmerer, 2006; Hojat et al., 2009) training to sustain and enhance compassion in trainee physicians is no longer optional. Though there are some controlled studies on empathy, a precursor for compassion, there are no studies on compassion training among medical students or doctors (Riess et al., 2012; Satterfield & Hughes, 2007).

A review of different compassion-enhancing protocols includes mindfulness training as a core feature (Jazaieri et al., 2012; Krasner et al., 2009; H. Y. Weng et al., 2013). Mindfulness training is increasingly becoming a part of the global medical curriculum (Dobkin & Hutchinson, 2013) as such training can mitigate physician burnout (Krasner et al., 2009) and improve physician medical diagnostic errors (Sibinga & Wu, 2010). Consistent with the shift to patient-centred medical care (Laine & Davidoff, 1996), mindfulness training has also been shown to increase physician-patient connection (Beach et al., 2013; Krasner et al., 2009). Our study adds to the list of potential benefits of mindfulness in medical education

suggesting that, at least among low self-compassion students, interventions may encourage a more favourable disposition towards difficult patients and that helping behaviours may be increased among others.

Limitations and Future Directions

Although these findings represent a useful contribution to the understanding of how mindfulness-based interventions might be leveraged in the service of enhancing medical compassion, these data are not without their limitations. Limitations include the duration of the mindfulness intervention being only ten minutes and concerns that the "dose" is insufficient to elicit a robust or valid mindfulness state. Although our analyses indicated that state changes were restricted to decentring mindfulness rather than manifesting in emotions, state and trait mindfulness likely operate differently (L. M. Reynolds et al., 2015). Examining the effects of more substantial mindfulness training protocols on medical compassion will be an interesting future direction (Krasner et al., 2009). Equally, the fact that vignettes were used should be borne in mind; using videos or simulated difficult patient actors to assess compassionate responding is an obvious and more ecologically valid next step. Lastly, the behavioural measure of helping a research assistant may or may not correspond to actual compassionate behaviour towards patients. While analyses controlled for social desirability, it may be that the mindfulness induction differentially heightens an awareness of the demand for prosociality in some groups and additional work testing the effects of mindfulness on patient-centred compassion is needed. Although the covert helping task shares similarities with a medical consultation in that it is a private transaction between a helper and a recipient of help, it is not overtly "medical" and occurs in the absence of a legislative or professional obligation to care; as such, it may be less ecologically valid when compared with a simulated, controlled medical set-up with standardised actors/patients.

A central aspect of patient-centred medical care, compassion, has been shown to be enhanced using mindfulness among some medical students in this study. Specifically, a brief mindfulness induction benefitted those at risk for having less compassion towards patients in vignettes and increased helping behaviour on those with greater self-compassion. Our results add to the evidence base surrounding the potential inclusion of mindfulness training in the education of future doctors.

Chapter 10 – General Discussion

Overview

A few years before this PhD commenced in 2012, the author, a medical doctor, learned to practice mindfulness and compassion meditation in a local Buddhist centre, primarily because meditation was starting to become popular in the medical field for managing burnout and stress. However, while developing the capacity to relax and be calmer in a busy medical practice were the intended outcomes of the training, the author experienced surprising "side-effects", including an increased desire to understand patients' situations and a stronger motivation to help reduce their suffering. Of course, the outcomes of this non-randomised and subjective trial were limited to a single, self-selected "participant", but the author wondered if a secularised version of mindfulness practice would have similar effects in a larger group of doctors when examined in the context of a formal randomised trial.

In parallel, the author was awarded a scholarship to attend the Mind and Life Summer Research Institute in New York, an annual week-long science retreat that fosters collaborative research amongst neuroscientists, psychologists, clinicians, contemplative scholars, and practitioners. In this meeting, the author was able to discuss his nascent ideas regarding enhancing compassion in medicine via contemplative practice with compassion experts including Antoine Lutz, Tania Singer, Sharon Salzberg, Matthieu Ricard and Roshi Joan Halifax. This group was unanimous in encouraging the author to pursue a PhD, suggesting that compassion in medicine was poorly studied. Subsequently, the author met with Dr Robin Youngson, a New Zealand anaesthesiologist renowned for his advocacy regarding compassion in healthcare as well as with Dr James Doty, a Stanford neurosurgeon who founded the Center for Care and Altruism Research and Education. Both doctors, icons of compassion in medicine, were also very supportive of the author's intention to study compassion in medical doctors.

With a strong resolve to conduct a PhD research on enhancing compassion in medicine through contemplative practice, the author consulted with a potential PhD supervisor, Professor Nathan Consedine to discuss his PhD ideas. Professor Consedine, as expected, recommended that an initial survey of the scientific literature be conducted. In performing the review, it became evident that most studies of compassion in medicine were, in fact, studies of *compassion fatigue* with scant empirical work on medical compassion itself. This issue, coupled with the absence of work evaluating the barriers and facilitators of compassion in healthcare, derailed plans for a randomised controlled trial and, instead, resulted in the program of work presented here. Rather than conduct a comparatively un-tested intervention in a notoriously busy and hard-to-retain sample, it was decided to begin by investigating the factors that interfere with doctors being compassionate in medicine. Thus, did the adventure begin.

The resulting thesis is comprised of two broad sections: 1) understanding and characterising the breadth of the barriers to compassion, notably including those that exist "outside" the doctor; and 2) gleaning preliminary experimental data on interventions that have the potential to enhance compassion in medicine. Structurally, the first section is comprised of three published works, an opinion piece, a psychometric paper in which a new measure was developed, and a cross-sectional, descriptive study. The second section is likewise comprised of three publications, two opinion pieces and an experimental paper. In this final chapter, the thesis revisits the questions and key findings from these publications, integrates the findings with what is now a fast-moving literature on compassion in healthcare, and considers thesis limitations and potential future directions.

Summary of Findings

If one observation became clear during the review of prior work on medical compassion, it was that research in the area has been myopically focused on the doctor as the origin of compassion. In particular, most publications on compassion in medicine have focused on *compassion fatigue*, a construct that, among other problems, tends to imply that compassion emanates (or does not emanate) from the doctor depending on whether they become tired of caring. This narrow view is in stark contrast with the contextual model of medical compassion developed across the course of this thesis which emphasises multiple influencing factors within and outside the doctor. The first publication of the thesis, "Beyond compassion fatigue: The transactional model of physician compassion" presents an alternative, systems view of compassion as multifactorial in origin and influenced by processes within and outside the doctor. In this new framework, factors that influence the emergence (or non-emergence) of compassion outside the doctor include the patient and (often) patient families, the clinical situation, and the physical, institutional, and legislative environments where compassion either occurs or does not occur. Importantly, this framework suggests that it is often in the interactions between these factors that a deeper understanding of medical compassion is to be found.

However, while viewing medical compassion as emanating from dynamic and interrelated factors is conceptually useful (and resonates with the experience of practicing clinicians), data consistent with this view have been lacking. In turn, data require rigorous measurement of the possible barriers, but a review of the literature revealed no suitable instruments. In contributing to this area of work, the second publication of the thesis, "Development and Initial Psychometric Properties of the Barriers to Physician Compassion Questionnaire" presents the development of the first standardised measure of the factors that interfere with compassion in medicine. In this study, a 34-item measure assessing the internal

and external barriers to compassion was developed. A first study administered this questionnaire to 372 doctors, with structural analyses identifying four distinct barriers to compassion. Consistent with the Transactional Model of Physician Compassion, barriers were not limited to doctor factors alone (e.g., stress, burnout). Indeed, three of the four barriers were "outside" the doctor, including patient and family factors, clinical situations, and external factors. Thus, at least as suggested by this self-reported study, multiple factors within and outside the doctor have the capacity to interfere with medical compassion. With the data from this study, the monolithic view engendered by the compassion fatigue approach to medical compassion is questioned and an alternate model of medical compassion as emanating from varied but interrelated factors is supported.

Because context is seen as central to compassion, the Transactional Model implies that the barriers to compassion should vary among different physician groups. More fully, given that doctors working in different disciplines have different normative personality characteristics, experience, and training, and that different specialities have different types of patients, work situations, challenges and systems, the barriers to compassion should also vary as a function of specialisation. The third published paper in the thesis, "Barriers to medical compassion as a function of experience and specialisation: Psychiatry, paediatrics, internal medicine, surgery and general practice" examined how the barriers to compassion varied as a function of medical specialisation and clinical experience in a sample of 444 New Zealand doctors. Consistent with the Transactional Model of Physician Compassion, different specialties reported differing levels of the different barriers. Broadly, psychiatrists tended to report the lowest barriers with general practitioners and internal medicine physicians reporting greater barriers. In direct contrast to what might be expected from the compassion fatigue perspective (that physicians get tired of caring over time), more experienced doctors consistently reported *fewer* barriers than less experienced physicians. The fact that doctors

experience barriers to compassion differently, at least based on specialisation and experience, suggests that there is no "one size fits all" approach to identifying and ultimately addressing the factors that interfere with compassion in medicine.

While the first half of the thesis focused on understanding and characterising barriers to compassion in medicine, the second half aimed to critically explore how we might go about enhancing compassion in medical practice. Based on the Transactional Model, the paper, "Enhancing compassion in general practice: it's not all about the doctor," represents a first attempt to develop and communicate practical approaches to enhancing compassion in general practice that do not rely exclusively on attempting to change the doctor. General practitioners were selected as the focus of this "translation" given their role as "gatekeepers" in the New Zealand medical system and following the fact that this subgroup reported the greatest barriers to compassion among five specialties previously studied.

Guided by the Transactional Model and empirical evidence within the thesis for distinct barriers, recommendations to enhance compassion in general practice were discussed as reflecting physician, patient, clinical and external factors. Under physician factors, recommendations included learning mindfulness practices and implementing concrete, daily reminders that the doctor can be of benefit to patients. When encountering difficult patients, general practitioners can practice seeing them as human, as suffering, and in pain rather than orienting predominantly to the fact that they may be threatening or non-compliant. Theory suggests that when people (doctors) encounter complicated or unexpected situations, their compassion system can switch "offline" in response to threat (Gilbert et al., 2012; Gilbert et al., 2011); this piece argued that maintaining an awareness of such processes may help practitioners to go "online" again and respond compassionately. Lastly, under system factors, suggestions to manage distractions and address perennial issues including interruptions and workplace bullying were made. Tailored to an audience of practicing clinicians, this paper

highlighted the message that enhancing compassion should not be focused exclusively on the doctor and the factors likely impacting compassion in daily practice can be recognised and accommodated.

As noted, a key, recurring message within this thesis has been the importance of factors that are "outside the doctor" as impeding or enhancing compassion. This message noted, elements within the doctor (e.g., personality traits, strengths, and vulnerabilities) likely *interact* with the environment or "outside the doctor" factors to impact compassion. Hence, although they are only one level of influence, interventions at the physician level may also benefit compassion. In particular, given high levels of doctor burnout and the fact that doctors are constantly bombarded by information that needs to be processed, analysed, and made sense of, a promising scalable and doctor-specific intervention lies in the development of greater mindfulness. The fifth publication in this thesis, "Mindfulness for Surgeons", considered mindfulness in the context of surgical practice. Surgeons differ from other medical specialties in that they spend longer hours at work and tend to have high burnout rates (Benson et al., 2009; Peckham, 2013; Shanafelt et al., 2009). Since surgery is a procedurally focused discipline, practicing with mindfulness is a good fit with the core task of performing surgical operations. This publication was designed to demystify and normalise mindfulness as a state that most surgeons are familiar with when they go into theatre. The published paper "Mindfulness for Surgeons" discusses the rationale and basic instructions of mindfulness to surgeons and suggests practical ways to incorporate mindfulness in a surgeon's daily clinical routine.

Finally, although mindfulness is being increasingly deployed to benefit doctors and, potentially, their patients in various ways (Fortney et al., 2013; Krasner et al., 2009), empirical examinations in medical populations and where compassionate functioning is the core outcome are few. In contributing to this nascent area of study, the final publication of

this thesis, "Increasing compassion in medical decision-making: can a brief mindfulness intervention help?" used a laboratory-based study to test whether a brief mindfulness induction in medical students increased compassionate responding to difficult patients; given recent work regarding fears of compassion (Gilbert et al., 2012; Gilbert et al., 2011), the report also assessed whether trait self-compassion moderated the impact of the experimental manipulation. In the study, induced mindfulness did not directly result in greater medical compassion, at least as evidenced by ratings in response to difficult patient vignettes. While mindfulness predicted greater patient liking and caring, it only did so only among students lower in self-compassion, perhaps implying that mindfulness training may be more suited to the more self-judgmental physician. Conversely, however, the intervention did predict greater helping *behaviour*, but primarily among those with higher self-compassion. Consistent with the Transactional Model of Physician Compassion, these findings highlight the complexity of the interactions between trainee doctors' traits and the external factors, in this case, difficult patients. The study also adds to the growing list of publications demonstrating the potential benefits of mindfulness in medicine (Amutio-Kareaga, García-Campayo, Delgado, Hermosilla, & Martínez-Taboada, 2017; Asuero et al., 2014; Beach et al., 2013; Boellinghaus, Jones, & Hutton, 2014; de Vibe et al., 2015; Dobkin & Hutchinson, 2013; Fortney et al., 2013; Irving et al., 2014; Kemper et al., 2019; Raab, 2014), particularly in relation to medical compassion.

Overall, in contributing to research on medical compassion, the thesis shows that, in contrast to the implication of the compassion fatigue view, medical compassion is not all about the doctor. Rather, compassion in medicine has its origins in the same factors that influence compassion in other contexts. Specifically, evidence from this thesis suggests compassion arises in the interactions between "doctor" variables (e.g., medical discipline, experience, personality traits) and factors that are "outside the doctor" including patients,

families, clinical complexity and the environments in which interactions take place. Mindfulness, as an intervention, may offer some benefit in enhancing compassion, depending on the doctor's predispositions. Though this thesis made an initial attempt to clarify origins and barriers to medical compassion, the thesis asks further questions on what other factors (both within and outside the doctor) may operate and/or interact with known influences on medical compassion.

Integration into the Broader Literature

Since the publication of the last of the peer-reviewed papers contained in this thesis in 2016, there has been rapid development in the general field of compassion research. The rate of publication has increased, and several edited works have since appeared (Y. Ashar, Andrews-Hanna, Dimidjian, & Wager, 2016; Y. K. Ashar, Andrews-Hanna, Halifax, Dimidjian, & Wager, 2019; Y. K. Ashar et al., 2016; Brito-Pons, Campos, & Cebolla, 2018; Donald et al., 2019; Durkin, Beaumont, Hollins Martin, & Carson, 2016; Gu, Cavanagh, Baer, & Strauss, 2017; Jazaieri et al., 2016; Kirby et al., 2017; Lim & DeSteno, 2016; Stellar & Keltner, 2017; Strauss et al., 2016). In parallel, the research in *medical* compassion has also grown significantly (Amutio-Kareaga et al., 2017; Blomberg, Griffiths, Wengström, May, & Bridges, 2016; Cochrane et al., 2019; Das & Charlton, 2018; Dev, Fernando, Kirby, & Consedine, 2019; Dev, Fernando, Lim, & Consedine, 2018; Hofmeyer et al., 2016; Kemper et al., 2019; Lown, Muncer, & Chadwick, 2015; Mills & Chapman, 2016; B. W. Roberts et al., 2019; Schrooten & De Jong, 2017; Shah et al., 2017; Sinclair, Beamer, et al., 2017; Sinclair et al., 2018; Sinclair, Norris, et al., 2016; Sinclair, Russell, Hack, Kondejewski, & Sawatzky, 2017; Sinclair, Torres, et al., 2016). In contextualising how the current work contributes to and enhances knowledge in the area, the following section will discuss the thesis findings in light of recent work in four areas: 1) conceptualisations of

medical compassion 2) measurement of medical compassion, 3) factors influencing physician compassion and 4) interventions to enhance compassion.

Conceptualisation of medical compassion. This thesis presents a contextual model of medical compassion, where compassion emanates from the interaction of factors within and outside the doctor. This view is a significant shift from the previous doctor-centric perspective of medical compassion. A recent review of current conceptualisations of compassion concluded by suggesting a 5-part compassion definition (Strauss et al., 2016) which included recognising suffering, understanding the universality of human suffering, feeling for the person suffering, tolerating uncomfortable feelings and motivation to act to alleviate suffering. The above definition's component of "understanding the universality of human suffering" is problematic in that many compassionate acts, particularly impulsive altruistic acts, do not appear to explicitly involve the universality of human suffering. Offering relief to a patient in severe pain at the Emergency Room does not usually include a cognitive process that recognises that suffering is a universal human experience. In addition, the hypothesised factor structure of the 5-part compassion definition was empirically investigated which showed that "tolerating uncomfortable feelings" was not a core aspect of compassion (Gu et al., 2017). This recent conceptualisation is yet another example of a compassion definition which is doctor-centric where factors outside the doctor are discounted.

In parallel to the work presented here, another model of compassion in healthcare/medicine has also emerged. The "Healthcare Provider Model of Compassion" (Sinclair et al., 2018) was developed based on qualitative data from providers and peer-nominated champions of compassion, mostly in the palliative care setting. This model defines compassion as a virtuous and intentional response to know a person, to discern their needs and ameliorate their suffering through relational understanding and action. In this model,

there is a strong emphasis on the relational space between the clinician and the patient and the model provides practical guidelines regarding how to enhance the relationship between provider and patient. To this extent, the Healthcare Provider and Transactional Models are similar, although the Healthcare Provider model remains focused on the physician. Although incorporating patient factors in an important step, this model remains fundamentally similar to the 5-part compassion definition (Strauss et al., 2016) mentioned above insofar as the locus of compassion nonetheless rests within the clinician

Measurement of medical compassion. A second area in which the current thesis contributes to research in medical compassion lies in its contributions to measurement. Related to the above-referenced developments in how compassion is conceptualised and modelled are new measures of parts of the process of medical compassion. Several instruments relevant to the study of compassion in health, including the Barriers to Physician Compassion Questionnaire in this thesis, have examined compassion or barriers to compassion from the clinician's perspective. Conversely, the bulk of these newer measures have focused on developing ways of indexing elements of the patient experience of compassion. For example, the Schwartz Center Compassionate Care Scale (Lown et al., 2015) was initially developed by patients, family members, carers, and doctors. It is a 12-item validated, patient-rated scale that assesses the patient's perception of physician caring, sensitivity, communication style, respect, involvement of family, and time spent with the patient (Lown et al., 2015). In contrast to the work presented in this thesis, however, it focuses on measuring elements of the patient experience. Similarly, another validated patient instrument, a much shorter 5-item measure of clinician's compassion, was administered to a large scale health care system involving more than 6000 patients (B. W. Roberts et al., 2019). Four of the five items in the Roberts questionnaire were almost identical to those in the 12-item Schwartz Center Compassionate Care Scale. These four items asked about the extent the

clinician cared about the patient's emotional and psychological needs, the clinician's treatment of the whole person, the clinician's ability to gain the patient's trust and the clinician showing care and compassion (B. W. Roberts et al., 2019). Measuring a patient's perspective of the compassionate experience is crucial as the patient is the target of the compassionate act. Depending on the quality of the encounter, this subjective experience might even predict a positive or negative clinical outcome for the patient.

While these recent scales are useful developments which show varying viewpoints and growing maturity in the field of healthcare compassion research, they neglect the study of the agent who either cares or does not care – the physician. In contrast, The Transactional Model and its associated measurement, Barrier to Physician Compassion Questionnaire hold the various factors (physician, patient, clinical context and external environment) in the compassionate process in a single conceptual and measurement framework.

Factors influencing medical compassion. A further contribution of this thesis is that it provides an organisational framework and associated measure to systematise the origins or factors that impact compassion: physician factors, patient and family factors, clinical complexity, and external factors. To date, the literature on origins or factors influencing medical compassion has been scattered and disorganised, which does not lead anywhere in terms of research or practical directions for ameliorating the impact of variables that influence medical compassion.

Regarding physician factors, the third publication of the thesis, "Barriers to compassion as a function of experience and specialisation: Psychiatry, paediatrics, internal medicine, surgery and general practice" confirmed that different medical specialities experience barriers to compassion differently. The study also showed that more experienced clinicians reported less barriers to compassion. This line of research work has since been extended to a large group of clinicians in a cross-sectional study on 1700 doctors, nurses and medical students

which showed similar findings in that participants with more clinical experience reported lower barriers to compassion (Dev et al., 2019).

Apart from specialisation and clinical experience, other physician variables that appear to relate to the barriers to compassion were burnout, self-compassion, and past adversity. A cross sectional study of 799 nurses in New Zealand found that participants with greater burnout also reported greater barriers to compassion while self-compassion predicted fewer barriers (Dev et al., 2018). This pattern in which self-compassion may be "protective" in some way is consistent with data from a recent prospective cohort study of about 900 paediatric residents in the US which showed that self-compassion was associated with greater compassionate care (Kemper et al., 2019). One study in a non-clinician population found that past adversity was linked to a tendency to feel compassion for others in need (Lim & DeSteno, 2016). Though this is a study of non-clinicians, it reiterates the thesis findings that the intrapersonal origins of compassion, in this case past adversity, are complex but have the potential to impact patient care.

Another physician factor for compassion that has recently been investigated is c*ompassion satisfaction*, the gratification received from caring for patients (Simon et al., 2006). In a large mixed methods study consisting of a cross sectional survey followed by interviews of 1,317 emergency room consultants in the UK, more senior consultants report more compassion satisfaction (Dasan et al., 2015). Similarly, in a nursing sample, a cross sectional survey of 491 direct care nurses showed that most experienced nurses, and nurses with fewer years of experience had highest compassion satisfaction (Kelly, Runge, & Spencer, 2015). Compassion satisfaction, similar to barriers to compassion, is influenced by the amount of clinical experience of doctors and nurses.

Clinical complexity, one of the least studied factors within the Transactional Model thought to influence compassion, has recently been shown to predict compassion satisfaction

among doctors and nurses. At least according to one study, nurses experience more compassion satisfaction working in a single acuity unit which has a more homogenous patient type than nurses working in mixed acuity units where patients have varying levels of sickness (Sacco, Ciurzynski, Harvey, & Ingersoll, 2015). In the UK study mentioned earlier, emergency doctors report more compassion satisfaction when working in a more specialised, highly focused trauma centre than emergency doctors working in an emergency department which caters to a wider range of patient diagnosis and complexity (Dasan et al., 2015).

The fourth factor or origin for compassion is the environments where the physician practices. Two recent studies on physicians, one on emergency doctors mentioned earlier (Dasan et al., 2015) and another on neonatologists in the US (Weintraub, Geithner, Stroustrup, & Waldman, 2016) suggest that team culture might impact compassion satisfaction. In the UK study of emergency consultants, doctors with high compassion satisfaction report of having good team work, team support, and team spirit compared to fatigued doctors who felt unsupported and reported poor team relationships (Dasan et al., 2015). In a cross sectional study of 593 neonatologists in the US, doctors who were allowed to talk about their distress and had the support of paediatric palliative care teams also reported higher compassion satisfaction than doctors who were less likely to talk about their distress and felt unsupported (Weintraub et al., 2016).

In summary, the recent literature on origins or factors influencing compassion and barriers to compassion is untidy and haphazard but can be organised under the four factors provided by the Transactional Model. As evidenced in the latest research on doctors and nurses, these factors dynamically interrelate, impacting on the manifestation (or not) of compassion, one of the key findings of this thesis.

Interventions to enhance compassion. Finally, and acknowledging that it was not primarily designed to evaluate possible compassion-enhancing interventions, the current

program of research nonetheless contains several implications for how interventions to enhance compassion in medicine (healthcare) might be designed. Although compassion has complex origins, it nonetheless seems reasonable to suspect that alleviating barriers to compassion and/or intervening in ways that help physicians remember their role and motivations have potential. In this light, the next section will revisit and evaluate recent publications on enhancing compassion, specifically considering how the insights offered by the current program might contribute. Potential interventions that might enhance compassion have focused on mindfulness, compassion focused therapies, patient suggestions on clinical practice, and an organisational approach to making compassion a priority.

Consistent with the suggestion of this thesis that mindfulness might have a role in enhancing compassion, three publications involving non-medical and medical participants have examined the relationship between mindfulness, prosocial behaviours, and compassion (Amutio-Kareaga et al., 2017; Brito-Pons et al., 2018; Donald et al., 2019). In a meta-analysis of 31 correlational and interventional studies, mindfulness increased the incidence of prosocial acts (Donald et al., 2019). In another study, Mindfulness Based Stress Reduction enhanced psychological wellbeing, mindfulness, and compassion (Brito-Pons et al., 2018). Only one publication to date, focused on clinicians. The paper was a qualitative review of twenty various experimental studies, reviews and opinion pieces showing the effectiveness of mindfulness and compassion-based strategies in enhancing clinical communication, patient-centred care, and physician empathy (Amutio-Kareaga et al., 2017). To date, there are no recent mindfulness interventional studies targeting increasing compassion among doctors. This remains a critical area for future study.

Apart from mindfulness, compassion-based therapies have recently been studied as interventions with the potential to enhance compassion (Brito-Pons et al., 2018; Kirby et al., 2017). Compassion Cultivation Training involving 9 weeks of 9 x 2 hour experiential classes

and daily half-hour of guided meditations among non-clinician adults enhanced self-compassion, compassion for others, empathic concern, and identification with all humanity (Brito-Pons et al., 2018). Similarly, a recent meta-analysis of 21 randomised controlled trials, involving 1285 participants demonstrated that compassion-based interventions (Mindful Self-Compassion, Compassion Focused Therapy, Loving Kindness and Compassion Meditation, Compassion-Mindfulness Therapy, Compassion Cultivation Training) increased self-report measures of compassion and self-compassion (Kirby et al., 2017). There have, however, been few studies exploring the possible efficacy or benefits of compassion training among clinicians (Delaney, 2018; Sansó et al., 2019). One study employed a three-month pre-post design in a mixed sample of fifty doctors, nurses, and psychologists and showed improvement in compassion satisfaction after a 60-hour course on Compassion Cultivation Training (Sansó et al., 2019). A second study in healthcare professionals involved a small sample of thirteen nurses showed improvement in compassion satisfaction after attending a Mindful Self-Compassion course comprised of eight weeks of two and a half hour sessions and an additional half day retreat (Delaney, 2018). While this literature is clearly underdeveloped and has not tested the possible benefits of intervening with factors "outside" the doctor (patient, clinical complexity, or external factors), compassion-based interventions show promise in enhancing compassion in healthcare samples. Further limiting confidence, however, is the fact that most of the protocols evaluated thus far involve many weeks or a few months of daily training, a time consideration that might prevent uptake or adherence to protocol in an already overworked population.

As suggested by the Healthcare Provider model, compassion in medicine might be enhanced by improving doctor-patient relationships. Patients, an important component in the process by which compassion is (or is not generated) have well-developed perspectives on how clinicians can enhance their compassion (A. Fernando, Rea, & Malpas, 2018; Sinclair,

Torres, et al., 2016). Cancer patients, for example, recommended that clinicians develop interpersonal relationships with patients, see patients as people, and develop a human connection with their patients (Sinclair, Torres, et al., 2016). In this study, patients suggested that doctors learn patient-centred communication, engage in self-reflection exercises, and learn from compassion role models. A similar study on palliative care patients emphasised the importance of connecting with patients and for clinicians to talk in a way that patients can understand (A. Fernando et al., 2018). The patients suggested that clinicians practice with compassion by showing interest in them and being a positive presence for them (A. Fernando et al., 2018).

Finally, as has been argued throughout this thesis, seeking ways to both enhance compassion and minimise organisational barriers at a systems level is logical given the likely (if undocumented) importance of the clinical environment and organisational contingencies in the genesis of compassion. Unfortunately, organisation-wide approaches to promote practicing compassion in healthcare systems have not been empirically studied. A review of the relevant literature yielded only one descriptive paper evaluating how four hospital systems promoted a culture of compassion from management levels to day to day clinical interactions (Cochrane et al., 2019). In this paper, the authors described four institutions that had compassionate care as an organisational priority, detailing how this value was enacted in various forms in routine clinical interactions grounded in kindness and empathy, cultural sensitivity and respect for First Nations culture, and caring for families (Cochrane et al., 2019). Organisation-level approaches are promising both because of their scale as well as because they impact multiple points in the process of generating compassion. However, in the absence of any empirical research on the outcomes associated with various organisational approaches and values, it is difficult to quantify how effective manipulating such system factors may be.

Overall, the recent literature on enhancing compassion in doctors remains underdeveloped. Various interventions including mindfulness and compassion-based interventions show promise, but most studies have not been conducted in the clinical settings where dynamics and the demands of the compassionate process are more complex compared to day to day interactions. Practical suggestions from patients are face-valid but, again, their efficacy remains unknown. Lastly, an organisational top-down approach is encouraging, but again, needs to be further investigated. Compassion research clearly needs to move beyond ideological assertions to become an evidence-based discipline if it is to exert policy influence in the increasingly cash-strapped healthcare environment.

Limitations and Future Directions:

Although the studies that comprise this thesis make several contributions in the area of compassion in medicine, they are not without their limitations. Many of these limitations have been discussed in the publications themselves. The next section will discuss the general limitations of this PhD.

First, the focus on physicians in this thesis does not have any scientific or theoretical basis. The author was initially interested in his cohort of physicians as the first population to study. The choice of physicians should not detract from the fact that most clinical interactions in multiple healthcare settings are with nurses and that nurses are exemplars for compassionate care. As the Transactional Model of Physician Compassion and the Barriers to Physician Compassion Questionnaire apply to other clinicians including nurses, social workers and psychologists, there are suggestions to change their titles to Transactional Model of Clinician Compassion and Barriers to Clinician Compassion Questionnaire.

Second, although the Transactional Model of Physician Compassion may act as a useful lens through which to investigate and organise the barriers to compassion and develop specific ways to enhance compassion in novel, face valid and practical ways, the model is

still somewhat blunt and lacking in specifics. The framework has not yet attempted to quantify the degree to which each variable impacts on compassion in different doctor groups, settings, or clinical situations. Are doctor variables (e.g., fatigue, personality traits, stress, and burnout) more significant than patient variables (e.g., difficult, complaining, ungrateful patients)? Do variations in the degree to which local culture is compassion-supportive impact compassion more than complicated, treatment resistant patients? Quantifying the extent to which (and how) each variable acts as a barrier to compassion will provide a more accurate model of how compassion works or does not work as well as where our efforts should be concentrated. To date, interventions on enhancing compassion focus on the person providing compassion and have been blind to the context where compassion takes place. Future studies that will further quantify the contribution of the different variables in compassion will not just improve the understanding of the compassionate process in medicine but can also inform more targeted and contextually specific interventions.

Third, although the third publication characterised the barriers to medical compassion as a function of specialisation, professional experience, and personality traits, there is a sense in which it raises more questions than it answers. Specialisation appears to impact on barriers to compassion but the specific aspects of the speciality that are relevant or the reasons for variation across specialties remain unknown. Extending this idea beyond medical specialties, it seems reasonable to suspect that barriers might vary as a function of the specific type of *profession*, e.g., nursing, social work, or psychology. A study by our research group has recently indicated that nurses report greater environment-related barriers to compassion compared to doctors (Dev et al., 2019). In addition to specialisation, personality traits, specifically self-compassion influence compassion to others but the role of other personality features including introversion, extroversion, neuroticism, perfectionism, and the ability to self-regulate need to be further examined.

Fourth, this thesis included two publications suggesting that mindfulness remains a potential intervention to enhance compassion among medical clinicians. Though mindfulness has been shown to enhance compassion (Amutio-Kareaga et al., 2017; Brito-Pons et al., 2018; Donald et al., 2019), there are other potentially useful and practical clinician-focused interventions that are also worth investigating. Since acknowledging the suffering of vulnerable individuals is a potent elicitor of compassion (Goetz et al., 2010; Zahn-Waxler, Friedman, & Cummings, 1983), it might be worth training clinicians to remind themselves regularly, perhaps before each consultation, that all of their patients suffer in one form of another, from gross physical pain and discomfort, to mental anguish of loneliness, loss of function or fear of death. Teaching doctors to view difficult patients and families as *people* who are suffering, not just individuals who are annoying and wasting their valuable time might enhance their desire to help a typically unlikeable group. Another practical intervention is to humanise each patient by including a picture of the patient when they were well and a short description of who they are, their passions and fears, on all their files. Seeing patients not as diseases or bed numbers, and instead as fellow humans, evokes a sense of shared humanity which may help allow kindness and compassion to flow (DeSteno, 2015; Monroe, 1998; Youngson, 2012). All these are simple, generalisable, and practical cognitive manoeuvres that can be examined in future studies enhancing medical compassion.

Lastly, while this thesis has emphasised the importance of considering factors "outside the doctor" in compassion, the single intervention study presented within the PhD was itself doctor focused. As mentioned earlier, the current literature on compassion intervention has been myopically focused on the clinician or doctor, the provider of compassion. However, criticising this unitary focus does not diminish the importance of targeting non-doctor variables including patients, clinical complexity, and system factors in future interventions. To date, there is only one paper that explored a top down approach in making compassion a

priority from hospital management down to individual clinical contacts (Cochrane et al., 2019). However, such approach has not been systematically investigated if it really enhances compassion within the hospital system.

Given that the compassionate process occurs contextually, that it takes place in environments with particular cultures and types of individuals, it might be worth targeting clinical teams or specific groups of clinicians in efforts to enhance compassion. Put another way, there is likely no "one size fits all" approach to enhancing compassion, meaning that targeting clinical teams as a compassion unit, factoring the team culture, work environment, idiosyncratic dynamics, and team needs appears sensible (Dasan et al., 2015; Weintraub et al., 2016). Enhancing compassion in a psychiatric team that is organisationally flat and openly talks about emotions and difficult patients will require different interventional techniques compared with working in a surgical team that has a clear hierarchy, works with life or death situations, and where emotions are not openly discussed. Similarly, a work environment intervention to enhance compassion among junior doctors is to ensure adequate sleep whilst paediatricians might benefit from the ability to debrief after the death of a child (Dasan et al., 2015; Weintraub et al., 2016). Though enhancing compassion at a team level was not specifically studied in this thesis, tailoring compassion interventions to the specific issues of individual teams is logical as clinical teams or discrete groups of clinicians will likely experience the barriers to compassion differently.

Conclusion

Compassion is an essential component and the heart of medical practice. Despite its importance, however, research has focused on the study of compassion fatigue rather than on compassion itself. This thesis attempted to bridge gaps in the knowledge of medical compassion firstly by providing a framework within which to organise the various barriers to medical compassion. Secondly, the thesis identified variables within and outside the doctor

that interfere with medical compassion, suggesting that compassion occurs (and does not occur) as a function of the interactive influence of these factors. Thirdly, having identified such barriers to compassion, the thesis proposed (and tested) potential interventions to enhance compassion focusing on the clinician as well as practical ways to improve systems and the environment where compassion takes place. Though this thesis has answered some important questions on medical compassion and its barriers, it has sparked further queries and future challenges in understanding the compassionate process in medicine.

As an offshoot of this thesis, three additional studies have been published by the author's research group and two more are currently being reviewed. Two recent publications further characterised barriers to compassion in medical students, nurses and doctors (Dev et al., 2019; Dev et al., 2018), while another paper examined physician's compassion from palliative care patient's perspective (A. Fernando et al., 2018). Another two studies have been conducted and are currently being reviewed; one considers how the barriers to compassion vary across medical training and another one on how clinicians maintain their compassion (Baguley, Dev, Fernando, & Consedine, 2020; Wang, Pavlova, Fernando, & Consedine, 2020). Thus, although research on medical compassion remains in its infancy, this thesis has sparked increased interest and further empirical work. Compassion remains central to medical practice but to understand it properly, we must shift views of medical compassion from being value-based, ideological, or aspirational to develop as an organised, research-based body of knowledge suited to the alleviation of human suffering.

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