# physicians' flourishing

# building cultures of wellness

Rosa Bogerd

1. Betekenisvolle arts-patiëntrelaties zijn een belangrijke voorspeller voor de professionele voldoening van artsen – dit proefschrift.

2. Artsen die een zelfvriendelijke houding naar zichzelf hebben ervaren meer professionele voldoening – dit proefschrift.

3. Aiossen leren wat compassievolle zorg is van hun supervisoren die het demonstreren in de praktijk – dit proefschrift.

4. Hoewel vrouwelijke supervisoren meer compassievol gedrag tonen, worden hun mannelijke collega's er vaker om gewaardeerd – dit proefschrift.

5. Aiossen willen gewaardeerd worden in hun rol als lerende, in hun rol als arts en collega en in hun rol als werknemer – dit proefschrift.

6. Een aios die zich gewaardeerd voelt ervaart minder stress, meer zelfvertrouwen, trots en motivatie en voelt zich meer betrokken bij het werk – dit proefschrift.

7. Het is zeer waarschijnlijk dat zelfvriendelijke artsen betere patiëntenzorg leveren – dit proefschift.

8. Zelfvriendelijkheid is een trainbare vaardigheid.

9. Het is tijd dat artsen en hun organisaties de moed voelen om steeds meer een cultuur van welzijn te creëren die betekenis en vriendelijkheid stimuleert en de mens(elijke waarden) weer centraal stelt – dit proefschrift.

10. Eén zwaluw maakt nog geen zomer, net zo min als één mooie dag of een korte tijd van gelukzaligheid iemand een gelukkig mens kan maken – Aristoteles.

11. Als je wilt dat anderen gelukkig zijn, beoefen dan compassie. Als je zelf gelukkig wilt zijn, beoefen dan compassie – de Dalai Lama.

# Physicians' flourishing

Building cultures of wellness

ROSA BOGERD

**Colophon**

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Physicians´ flourishing
Building cultures of wellness

# ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
prof. dr. ir. P.P.C.C. Verbeek
ten overstaan van een door het College voor Promoties ingestelde commissie,
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geboren te UTRECHT

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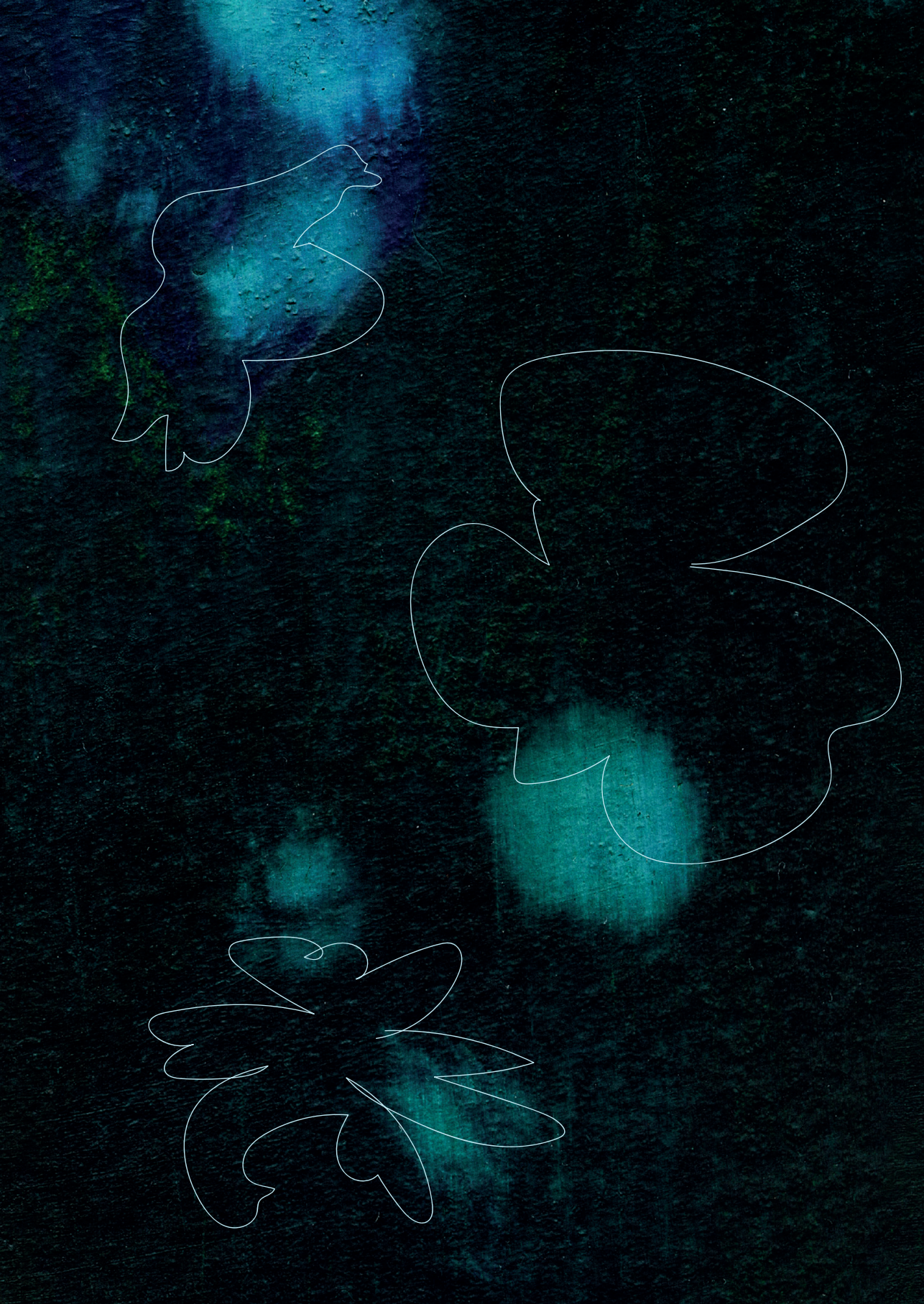
Faculteit der Geneeskunde

There is no way to happiness,
happiness is the way.

**Thich Nhat Hanh**

## TABLE OF CONTENTS


| | | |
|---|---|---|
| **CHAPTER 1** | General introduction | 9 |
| **CHAPTER 2** | Work-related well-being among Dutch cardiologists – A national survey<br><br>*Current problems in cardiology. 2023;48(4):101538.* | 39 |
| **CHAPTER 3** | The relationship between physicians' self-kindness and professional fulfillment and the mediating role of personal resilience and work-home interference: A cross-sectional study<br><br>*Plos one. 2023;18(4):e0284507.* | 73 |
| **CHAPTER 4** | Compassionate behavior of clinical faculty: associations with role modelling and gender specific differences<br><br>*Perspectives on Medical Education. 2025;14(1):118.* | 101 |
| **CHAPTER 5** | Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees<br><br>*Academic Medicine. 2024:10.1097.* | 131 |
| **CHAPTER 6** | General discussion | 161 |
| **CHAPTER 7** | English summary | 194 |
| | Nederlandse samenvatting | 202 |
| | Author contributions | 210 |
| | PhD Portfolio | 216 |
| | Dankwoord | 221 |
| | About the author | 225 |



# Chapter 1

General introduction

*"One swallow does not make a summer, nor does one day; and so too one day, or a short time, does not make a man blessed and happy."* - Aristotle

The past years of my professional and, partly, my personal life have been dedicated to getting a grip on the concept of flourishing. As a philosopher, I find it fascinating how people flourish differently in life, and I have been trying to reflect on what helps me to flourish. Definitely this PhD trajectory, in which I was able to combine my backgrounds in philosophy and public administration with my deep engagement with and big heart for the public domain, has already helped me to grow in life. In this thesis I will introduce and investigate the concept of physician flourishing, present my findings and give insights on how to promote it. However, as the concept of flourishing and ideas about its meaning are ancient, it only feels right to give a prominent place in this book to the founding father of *Eudaimonia* or the condition of 'human flourishing': Aristotle.

**Aristotle's Eudaimonia**

In his Nicomachean Ethics(1) and Eudemian Ethics(2), two philosophical landmark books, Aristotle described the concept of Eudaimonia. While interpretations of his work may vary, scholars generally agree that with Eudaimonia Aristotle is referring to human flourishing.(3, 4) According to Aristotle, *feeling* happy or feeling well is not equal to flourishing "for one swallow does not make a summer, nor does one day; and so too one day, or a short time, does not make a man blessed and happy"(1) (p.11). Human flourishing then exceeds being in a state of mind, like happiness, but rather means reaching the highest human good while simultaneously fulfilling one's full potentials in life.(4)

Modern readings of Aristotle's work on Eudaimonia often talk about a life experienced as meaningful, valuable, engaging and purposeful.(4, 5) Eudaimonia is about self-actualization or 'the fulfillment of one's true nature'. Self-actualization in the Aristotelian tradition can be described as seeking to use and develop the best in oneself, in congruence with one's personal deeply held values.(6) The actualization of one's talents, skills and potential helps individuals to find purpose and meaning in life.(7) When people engage in activities that allow them to deploy their unique potential *and* that are congruent with their deeply held values, Eudaimonia may occur in their lives.(8) Importantly, the process of self-actualization, leading to Eudaimonia or 'human flourishing', is unique for every human being. Although flourishing transcends happiness as such, engaging in 'the meaningful life' for Aristotle goes hand in hand with experiencing positive feelings, e.g. feeling good or happy. Or, put differently, psychological well-being is a natural long-term consequence of human flourishing.(3, 4)

In some modern interpretations, Aristotle's Eudaimonia has been linked to optimal performance in meaningful activities such as work. Focusing on self-realization and meaning in life, and striving towards excellence based on one's full potential, is what stimulates individuals to flourish(4, 9) or to 'fully function'.(4, 10) Especially when engaging in activities involving capacities that took some effort to further develop or even to excel in, individuals may reach the emotional states associated with full engagement and optimal performance.(11) In addition, there is a moral notion to fulfilling one's potential in Aristotle's work on Eudaimonia. When an individual starts to focus on becoming a better person and living a virtuous and meaningful life, life becomes worth living or good in itself.(12) An ultimate modern conceptualization of Aristotelian Eudaimonia that summarizes it all was coined by Wong (2011): "a lifestyle characterized

by the pursuit of virtue/excellence, meaning/purpose, doing good/making a difference, and the resulting sense of fulfillment or flourishing".(13)

**Physician flourishing**

Up till recently most research on flourishing in the medical field focused on its barriers, such as the overwhelming attention paid to burnout and stress among physicians(14-18). A more positive perspective has long been absent but has now begun to emerge. However, most of the studies on physician flourishing lack a specific definition and the conceptualization of the construct is often implicit or follows from the measurement instrument used. Positive psychologist Seligman's PERMA model is often used to measure the level of physician flourishing or develop well-being interventions in the healthcare sector.(19-21) PERMA stands for: positive emotions, relationships, meaning and accomplishment – which altogether make up for human flourishing according to Seligman.(22, 23) Other examples of operationalizations of flourishing in the medical field are measurement tools like the Flourish Index and the Secure Flourish Index(24-26) and the Mental Health Continuum (MHC).(27, 28)

In this thesis we choose to conceptualize physician flourishing following Ronald Epstein.(29), who defined the concept of flourishing specifically for physicians. In his *'What's the opposite of burnout'* paper (2017), Epstein proposes Aristotle's Eudaimonia as the antithesis to burnout. Epstein, a clinician himself, describes physician flourishing as "a sense of deep engagement and coherence and a sense that that work reflects the practitioner's deepest values and that he or she has treated others with competence, compassion, and kindness".(29) Epstein adds that eudaimonia-enhancing actions are not merely directed toward others but that they also include positive actions and attitudes toward oneself(29), e.g. being kind to oneself. Epstein refers to research by Tak et al.(30)

which underscores Aristotle's idea that self-actualization in congruence with deeply held values stimulates individual flourishing. The authors found that intrinsic motivators, such as meaningful long-term relationships with patients, seemed to stimulate a healthy relationship between practitioners and their work, including a sense of meaning and commitment to continuing practice.(30) Ultimately, Epstein's work is a call for more sense of meaning in work and alignment with professionals' personal values in order to stimulate physician flourishing.

**An operationalization: professional fulfillment and compassionate care**

Inspired by Epstein, in this thesis we looked at two elements of physician flourishing: professional fulfillment and compassion. Professional fulfillment captures Epstein's 'sense of deep engagement and coherence and a sense that that work reflects the practitioner's deepest values'.(29) Professional fulfillment refers to the pallet of intrinsic rewards physicians experience from doing their job, such as meaningfulness and self-worth and the feeling of being able to contribute to what they find important.(31) Research showed that professionally fulfilled physicians work with joy, are less prone to burnout, report fewer medical errors and are less likely to leave the profession than unfulfilled physicians. Not unimportantly, patients of professionally fulfilled physicians are more satisfied.(32-40)

As mentioned previously, the importance of physician well-being and research into how to prevent them from burning out has been well established.(14, 15, 17, 18, 31) Common well-being indicators in studies on physician well-being are burnout, occupational distress and job-dissatisfaction.(31) Research using positive well-being indicators is scarce and when present, often looks at job satisfaction or work engagement – important indicators, but they do not fully cover the positive dimension of physician

well-being. As a response to a deficiency in indicators for and research on positive well-being among physicians(31), Trockel and colleagues developed the Professional Fulfillment Index (PFI)(31). The PFI facilitates holistic research into physician well-being, meaning that it includes both negative indicators of well-being (emotional exhaustion and interpersonal disengagement) as well as a positive one: professional fulfillment. The professional fulfillment scale covers several intrinsic components or rewards that are closely related to Epstein's conceptualization of flourishing, namely: engagement, happiness, meaningfulness— including meaningful contribution, feeling worthwhile, and professional self-efficacy.(31) Epstein's conceptualization and explanation of physician flourishing is strongly centralized around the concept of meaning and deep engagement with work, which are both essential elements of the professional fulfillment scale.(29)

Compassion, the other central element of physician flourishing in this thesis, is an essential part of high-quality patient care.(41) Epstein explicitly mentions compassion as an element of flourishing, stating that flourishing also means that physicians "treat others with competence, compassion, and kindness".(29) Compassion can be understood as "a deep awareness of the suffering of another coupled with the wish to relieve it".(42, 43) Although compassion starts with empathizing with the other person, it goes further in the sense that it is coupled with a desire, intent, and/ or action to help.(44, 45) Physicians may express compassion through both small and grand gestures in medical practice, for example by a seemingly small act as verbally acknowledging their understanding of patients' feelings or putting a hand on their shoulder or by going the extra mile by prioritizing a patient on the OR schedule or visiting a patient more often than medically necessary.(41, 42, 46). Compassionate doctor-patient-interactions result in more trust towards the professional and, therefore, better therapeutic alliance.(47) Patients who experience their care as compassionate are less anxious, experience lower pain levels, and

even report quicker wound healing and other favorable outcomes.(47-50) Lastly, contradictory to the conviction of some that being compassionate and empathic towards patients is emotionally taxing and will eventually take its toll(51), compassion has been found to protect physicians from burning out by stimulating their physiological systems associated with stress reduction and social affiliation .(44, 47, 52-54)

**Status quo: a well-being crisis and the compassion deficit**

Today, the medical profession is suffering from both a well-being crisis and a compassion deficit. Alarming percentages of physician burnout and mental ill-health have been reported across specialties worldwide: in 2024, up till 50% of the US physicians reported that they felt burned out(55-59). A 2018 systematic review among medical residents reported a burnout prevalence of more than 35%(60); a national survey among Dutch residents found that 24% experienced burnout symptoms.(61) The reported lack of professional fulfillment amongst clinicians may not be as shocking as the reported burnout numbers, but is still worrisome. Approximately a quarter of all physicians are lacking professional fulfillment(33), 40% said that, if given the choice, they would not go to medical school again(32) and less than 60% is overall satisfied with their job.(62)

The effects of mental ill-health and lack of professional fulfillment are well-reported. A recent systematic review by Hodkinson and colleagues (2022) once again proved the detrimental consequences of physician burnout, predominantly in terms of career disengagement and physician turnover and the negative impact on the quality of patient care.(63) Burned out physicians and those who lack professional fulfillment indeed report less job satisfaction and higher intent to leave their institution or even the profession than their healthy peers.(17, 32, 33) Approximately one out of ten residents in the Netherlands decides to quit their residency training prematurely(64) and up to a

quarter has considered to do so.(61) Besides the personal suffering, physicians leaving the profession is a waste of public money, as the training of one medical specialist in the Netherlands costs over 800.000 euros including medical school and specialty training.(65) In addition, research showed that physician burnout and job dissatisfaction are related to decreased professional effort and work hours. Burned out physicians furthermore have a higher referral rate and greater resource utilization levels. (17, 32) These developments not only potentially affect patients' access to healthcare, but also further strain the already overburdened healthcare system.

Other reported consequences of physician mental ill-health for physicians are alcohol abuse/ dependence and suicide ideation.(17, 66-68) Last but not least, critical consequences of physician ill-health have been reported in terms of patient care. Patients report lower levels of physician satisfaction and trust when treated by professionally unfulfilled or burned out physicians (32). In addition, studies report that burnout symptoms of physicians are associated with a longer recovery time of patients and even with higher standardized patient mortality ratios.(17, 69, 70) Burned out physicians are also at higher risk for medical errors and medical malpractice suits(17, 71, 72).

Some researchers have argued that there is another ongoing crisis healthcare systems are facing: a compassion crisis. Trzeciak, Roberts and Mazarelli define this crisis as "a lack of (or inconsistency in) compassionate care in our health systems".(47) The compassion crisis statement has been supported by empirical evidence, mostly in the US: research found that nearly two-thirds of patients had a consult in which they found compassion from healthcare professionals was lacking(47), that only 0.4% to 0.6% of all surgeon – patients communications contained expressions of compassion(73) and that half of the US patients and physicians believe that their healthcare system does not consistently provide compassionate care(74). There is little (quantitative) research on

compassionate care in the Dutch healthcare setting. A quantitative study on physician empathy using audiotaped consultations found that although non-empathic behaviors were infrequently present throughout the consultations, in more than a quarter of the consultations physicians did fail to pick up on a patient's emotional expressions.(75) Compassion, as previously explained, covers more than merely (non-)verbal expressions of empathy. Qualitative studies indicated that the perceptions of Dutch patients and physicians on compassion differ, and that, according to both patients and clinicians, there is a gap between the needs and wishes and reality with regards to compassionate behavior.(46, 76)

As mentioned, compassionate care is associated with better outcomes for both patients and physicians.(47-49, 77-81) Some research on the consequences of a lack of compassion also exists. For example, the absence of compassion in patient care has been associated with lower quality of care and increased risk of harm to patients through medical errors.(41, 82) Patients who experience less compassion in their doctor consultations have less feelings of responsibility and control over their own health.(83, 84) Moreover, a lack of compassion may result in higher healthcare spendings as physicians not achieving a compassionate connection may be extra reliant on (unnecessary) testing, technologies and referrals to other specialists.(78, 85, 86) Finally, the absence of compassion and its protective power against physician burnout and mental ill-health(47) may have negative long-term cost- and productivity consequences for healthcare systems – of which the mechanisms have been described in the previous paragraph on the well-being crisis.

In sum, the consequences of physician mental ill-health, lack of professional fulfillment and lack of compassion are well-reported and worrisome. There is a need for

a greater understanding on how to promote physician flourishing – referring to their professional fulfillment and their ability to provide compassionate care.

**Cultural challenges to physician flourishing**

The number of factors or trends in contemporary healthcare systems putting pressure on physician flourishing is endless; they range from digitalization of healthcare and population aging to ever increasing workloads, financial and workforce shortages.(14, 17, 18, 28, 29, 87) In this thesis we choose to focus on cultural aspects of the medical profession which can be (at least) equally destructive to both professionals and patients and hard to change. One may argue that the medical professional culture, unlike some more systemic factors in society, is largely in the hands of the profession itself. With the works in this thesis, we therefore hope to inspire and support (medical) leaders and members of the profession by providing them with greater understanding of those cultural challenges and suggest potential roadways to physician flourishing. We will now discuss two dominant, persistent and detrimental cultural challenges to physician flourishing in healthcare today.

1. *Perfectionism and self-criticism*

Recently, scholars have been calling attention to the prevalence of perfectionism among physicians. Social norms and values in the medical profession and the current medical malpractice environment often lead physicians to develop perfectionistic and self-critical mindsets.(14, 88, 89) Perfectionism is a complex and multidimensional construct, affected by both personal and social interaction processes.(90, 91) It can be described as a set of characteristics whereby the perfectionist sets and aims to achieve unrealistic standards, focuses on and overgeneralizes failure, evaluates the self very strictly and perceives

outcomes as either complete successes or complete failures.(91, 92) Researchers suggest that there is a difference between adaptive and maladaptive perfectionists. Adaptive perfectionists are driven by a desire for success and goal attainment, but differ from maladaptive perfectionists in the sense that they are flexible enough to allow for occasional mistakes. Maladaptive perfectionists are not capable of doing so, as they are afraid of failure and feel the urge to cover their imperfections.(92) Although most studies measuring perfectionism have been performed among medical students(92), some research suggests that perfectionism is one of the most important contributors to burnout among faculty.(93, 94) Perfectionistic attitudes do not serve physicians nor their patients. However, 50 years ago individual perfectionism of an authoritarian physician was the profession's most common approach to quality.(58) Today, there is still little room for making mistakes or showing vulnerability amongst colleagues. Often, physicians feel that they need to project that they are on top of everything. They tend to assume the role of a hero, implying that normal human limitations do not apply to them – which is strongly fueled by societal pressure and unrealistic patient expectations.(95) When (near-)mistakes however do occur, this is often accompanied by blame- and shame approaches – in turn stimulating physicians to develop perfectionist and self-critical mindsets.(14, 58, 96)

As perfectionists strive for flawlessness they are usually very critical of themselves and others.(93) Self-criticism is a pattern of responding with negative self-judgment to failure.(96, 97) A self-critical attitude involves dysfunctional believes about the relationships between ambition, achievements, success, admiration from others, happiness and self-esteem. An example of such a belief is that asking for help is equal to admitting weakness.(98) As stressful life events involving failure, criticism and loss are inherent to the nature of a medical career(99), a self-critical attitude within this

environment can be both harmful and counterproductive. Both perfectionism and self-criticism have been found to be predictors of burnout and other mental health-issues.(18, 93, 100) Moreover, self-critical attitudes and perfectionistic attitudes keep physicians from adapting a growth-mindset (e.g. the belief that intellectual ability can be developed)(101) and may even result in inefficiency and missed opportunities, because of for example excessive time spent on medical-technical exceptional patient care.(102) The latter may furthermore lead to a lack of compassion in patient care when it is provided at the cost of humanistic practices.

2. *Deprioritizing self-care*

The second cultural challenge in medicine that we address is the common idea among physicians that self-care is not a necessity. Self-care can be defined as a cadre of activities in the personal and professional realm that promote or maintain well-being.(103) In addition to (normalizing) working excessive hours, there is a conviction in the medical profession that self-care and personal relationships should be deferred as long as needed to fulfill professional duties.(58, 88, 96) Indeed, more than workers in other fields, physicians are likely to defer self-care.(88) Although slightly changing over time, professional life is generally prioritized above private life resulting in a disbalance between the two(58) and unhealthy behaviors are quite common, e.g. not taking time for eating (healthy), exercise or proper sleep.(58, 96) The practice of coming to work while sick, presenteeism, for example, is a considerable problem among residents and medical specialists.(104) This an interesting notion in itself. Physicians promote the importance of prevention, self-care and personal behavior towards patients(58), but the medical professional culture devalues self-care practices, and organizational factors make it hard to even find the time for it.(88) Clearly, taking into account the demanding nature and

cultural context of the profession, medical students, residents and fellows receive inadequate self-care training.(103)

Since deprioritizing self-care appears to be inherent to the medical profession, efforts to promote self-care behaviors should extend beyond the individual level and also consider organizational and cultural context factors.(88) Kuhn and Flanagan (2017) argue that a first step towards promoting self-care in the medical world could be addressing it as a professional imperative.(104) Taking care of oneself is not selfish or merely a commitment to oneself, it is also a commitment to delivering high quality patient care and to ones colleagues, by showing the right example.(104) In the Netherlands, the College of Medical Specialists (CGS) indeed included "taking care of ones work- and private balance" as one of the formalized professional competencies Dutch physicians should be trained in and display in professional practice.(105)

**Cultures of wellness: a theoretical lens**

The Stanford Model of Professional Fulfillment proposes three domains that may affect physicians' professional fulfillment either separately or altogether: efficiency of practice, personal resilience and culture of wellness.(106) In this thesis, we choose to zoom in on the domain of the organizational 'culture of wellness' and use it as a lens to study the topic of physician flourishing. A culture of wellness can be defined as "a set of normative values, attitudes, and behaviors that promote self-care, personal and professional growth, and compassion for colleagues, patients and self". (107) In general, cultures of wellness have been found to be robust determinants of physicians' professional fulfillment and their ability to deliver compassionate patient care.(106, 108, 109) Inherent to a professional culture is that it is built by its members: the medical culture is created, owned, maintained

and modified by the physicians working within it.(106) For these reasons, studying the topic of physician flourishing using the lens of cultures of wellness seems promising.

Menon and Trockel (2019) describe several aspects of medical cultures of wellness. First, psychological safety, described as a collective trust within a group that it is safe to take interpersonal risks(110), is mentioned. Examples of psychological safety in practice are the feeling that one can be honest and transparent about for example personal errors or personal health issues without fear of (social) punishment.(106) Second, the importance of an inclusive work environment including collaborative leadership styles is mentioned.(106) Making equity, diversion and inclusion an organizational imperative reduces the chances on implicit and explicit biases, hostility, harassment and feelings of isolation and loneliness.(34) A third aspect of a culture of wellness is leadership support. This includes efforts to inform, listen to, engage, inspire, develop and recognize physicians within the organization.(106, 111, 112) Fourth, a medical culture of wellness requires alignment between the values of the individual physician and those of the organization and- profession.(106) The fifth aspect of cultures of wellness and according to some the strongest driver of professional fulfillment, is perceived appreciation and gratitude.(106) Value alignment, appreciation and gratitude practices give physicians the feeling that they are able to contribute to something meaningful and larger than themselves.(34) As a sixth aspect, related to an inclusive leadership style, Menon and Trockel mention a fair and equitable work environment, for example in relation to hiring and promotion processes.(106) The seventh element of a culture of wellness is stimulating a healthy work-home integration among physicians.(106) Organizational support for a healthy work-life balance allows for self-care and rejuvenation and stimulates physicians' personal resilience.(34) Next, the eighth aspect Menon and Trockel address is that of effective peer support, either through formalized peer support programs(34, 106) or

more informally. And last, but not least, in a medical culture of wellness there is a strong sense of collegiality which strengthens the bonds physicians have with each other.(106)

Shanafelt (2021) adds two elements to cultures of wellness which both receive increasing attention these days: vulnerability(113) and self-compassion(114). Physicians, collectively, need to acknowledge that no man is perfect and mistakes happen at times. By recognizing this perfectly normal commonality amongst them and by occasionally showing their vulnerability to each other and a future generation of doctors, they will be able to better support each other. This may likely facilitate the much needed shift to less critical and perfectionistic mindsets.(14)

**Research setting**

This thesis studies the topic of flourishing for physicians and medical residents (physicians in training) in the Netherlands. Residency training in the Netherlands takes between three to six years, during which residents rotate in both academic and non-academic hospitals. During their training residents, guided by their (group of) supervisors, take part in daily clinical practice and gradually develop into independent and competent medical specialists. Like in many other healthcare contexts, Dutch training programs are known to be quite competitive and, as mentioned previously, the medical culture sometimes causes residents to consider leaving their training.(61, 115) However, compared to other healthcare contexts, the Dutch context is considered less hierarchical; it is common practice that residents provide feedback to their training, both in the formal (e.g. their formal education moments) and the informal curriculum (e.g. whether they consider their supervisors to be role models).(116) Well-being is more and more on the agenda in post-graduate medical education in the Netherlands. Most training institutions (begin to) have wellbeing policies for residents in place and offer one or more individual

interventions to support residents in staying physically, mentally and emotionally fit, such as coaching, mindfulness-based courses or peer support. In the Amsterdam University Medical Center (AUMC), for example, multidisciplinary post-graduate courses for residents about work-related well-being are available as well as an individual coaching budget for each resident.

After finishing their residency training, physicians are registered as a medical specialist by the Registration Committee for Medical Specialists (RGS).(117) In order to become and stay registered as a medical specialist, physicians must meet several requirements, such as working at least 16 hours per week in their own specialty and reflecting yearly on their own performance (known as the IFMS procedure). Medical specialists must be assessed every five years and report their compliance with these requirements to the RGS.(118, 119) In-hospital medical specialists in the Netherlands provide their services in general hospitals (hospitals that provide all basic patient care), top clinical teaching hospitals (highly specialized referral centers that provide top clinical care), academic hospitals and independent facilities (single-specialty stand-alone centers for specialist care). There are 30 formally acknowledged medical disciplines in the Netherlands.(120) Two studies in this book focus on Dutch cardiologists specifically. Based on internal documents of the Netherlands Society of Cardiology (NVVC), cardiologists are either self-employed (approx. 48%) or employed by hospitals (approx. 52%). Cardiology, as a leading area of medicine, can be an extremely rewarding and at the same time very demanding specialty.(16) The profession of cardiology is known for its competitive culture, stimulating its members to appear impervious to pressure. This, together with perfectionistic mindsets of cardiologists in general, has raised concerns about their well-being.(16, 121, 122)

**Knowledge gaps and research aim**

There are still many gaps in our knowledge with regards to physician flourishing in the context of cultures of wellness. In general, there is a need for more understanding on how elements of cultures of wellness may affect physicians' flourishing, both for faculty and for residents. Additionally, there is not much research on elements of cultures of wellness in the previously described research setting.

We identified four specific knowledge gaps. First, the body of work that includes professional fulfillment *and* negative well-being indicators to study physician well-being, is limited. Especially among Dutch physicians, there are little to no studies that investigate professional fulfillment and its determinants. Second, we need more insight into (Dutch) physicians' self-kind attitudes and the impact thereof on their experienced professional fulfillment. Although much is known about the negative effect of self-criticism(18, 98, 100) and the protective effect of self-kindness(123-127) on stress and burnout, little is known about the effect of physicians' self-kindness on their professional fulfillment. Third, although empirical evidence indeed points towards a universal compassion deficit in healthcare(42, 47, 73, 77, 128, 129), not much is known about the Dutch context specifically. Research on faculty's compassionate behavior from the perspective of the resident is lacking. As residents, compared to patients, encounter their supervisors much more frequently, their perspective may be particularly relevant – especially considering the fact that positive role modelling (i.e. seeing faculty expressing behaviors that one desires to emulate) is the most important strategy to transfer the skill of compassion to future doctors(78, 130, 131). Fourth and final, perceived appreciation, potentially one of the most important aspects of cultures of wellness contributing to physician flourishing(33, 132), remains largely overlooked. It is unclear how appreciation at work manifests in the eyes of residents, as well as how it may impact their levels of professional

fulfillment and compassionate care practices. By addressing these four knowledge gaps, we aim to contribute to a greater understanding of the role that elements of cultures of wellness play in (promoting) Dutch physicians' flourishing, or, their professional fulfillment and compassionate care practices. Therefore, the overarching research question of this thesis is:

*What role do elements of cultures of wellness play in Dutch physicians' professional fulfillment and compassionate care practices?*

To answer this question we first wanted to get a holistic perspective on Dutch physicians' well-being and specifically their levels of professional fulfillment. In **Chapter 2,** in a sample of registered cardiologists, we therefore investigated how Dutch physicians experience their positive and negative work-related well-being and what cultural and other aspects determine these experiences. With the same sample, in **Chapter 3**, we measured cardiologists' levels of self-kindness and explored how these were related to their experienced levels of professional fulfillment. In **Chapter 4** we make the transition to post-graduate medical education. We investigated to what extent residents during their training observe faculty showing compassionate behavior towards patients and families. As we know that role modelling compassion is the most important teaching strategy in transferring the skill of compassion to future doctors, we also explore the relation between faculty's observed compassionate behavior and them being seen as role models. **Chapter 5** subsequently deep dives into the culture of post graduate medical education, by exploring how appreciation at work manifests for residents and how it impacts their professional fulfillment and their ability to provide compassionate care. **Chapter 6** will first answer the main question underlying this thesis and critically reflects on what we

found. We will also formulate practical implications following from our findings, discuss the limitations and provide suggestions for future research.

| Table 1. Overview of studies in this thesis | | | | | | |
|---|---|---|---|---|---|---|
| **Chapter** | **Aim** | **Design** | **Data source** | **Sample** | **Analysis** | **Research paradigm** |
| **2** | To investigate (1) Dutch cardiologists experienced positive and negative work-related well-being and (2) what specific work- and individual aspects determine their work-related well-being. | Multicenter cross-sectional survey study | Surveys | Faculty, cardiologists (n=374) | Frequencies & three multiple regression analyses | Post-positivsm |
| **3** | To explore to what extent a kinder attitude towards the self, i.e. self-kindness, was associated with physicians' professional fulfillment and whether this relationship was mediated by personal resilience and work-home interference. | Multicenter cross-sectional survey study | Surveys | Faculty, cardiologists (n=374) | Parallel mediation analysis | Post-positivism |
| **4** | To explore to what extent residents perceive faculty showing compassionate behavior towards patients, and whether these perceptions are equal for female and male faculty. (2) To investigate the relationship between faculty's compassionate behavior and them 'being seen as a role model', and whether this relationship differs for female and male faculty. | Multicenter cross-sectional survey study | Surveys | Faculty from multiple specialties (n=2399) | Descriptive statistics, independent samples t-test & multivariate general linear model | Post-positivism |

| | | | | | | |
|---|---|---|---|---|---|---|
| **5** | To explore (1) how appreciation at work manifest in the eyes of residents, and (2) how residents perceive appreciation in relation to their professional fulfillment and performance. | Qualitative interview study | Interviews | Residents from multiple specialties | Thematic analysis within the Interpretative Phenomenological Approach | Constructivism |

**REFERENCES**


1. Aristotle. Nicomachean ethics. Kitchener: Batoche Books; 1999.
2. Aristotle. The Eudemian Ethics. Oxford: Oxford University Press; 2011.
3. Ryan RM, Curren RR, Deci EL. What humans need: Flourishing in Aristotelian philosophy and self-determination theory. 2013.
4. Vittersø J. Handbook of eudaimonic well-being: Springer; 2016.
5. Heller AS, van Reekum CM, Schaefer SM, Lapate RC, Radler BT, Ryff CD, Davidson RJ. Sustained Striatal Activity Predicts Eudaimonic Well-Being and Cortisol Output. Psychological Science. 2013;24(11):2191-200.
6. Huta V, Waterman AS. Eudaimonia and Its Distinction from Hedonia: Developing a Classification and Terminology for Understanding Conceptual and Operational Definitions. Journal of Happiness Studies. 2014;15(6):1425-56.
7. Kashdan TB, Biswas-Diener R, King LA. Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. The Journal of positive psychology. 2008;3(4):219-33.
8. Waterman AS. Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. Journal of personality and social psychology. 1993;64(4):678.
9. Ryff CD, Singer BH. Know thyself and become what you are: A eudaimonic approach to psychological well-being. Journal of happiness studies. 2008;9:13-39.
10. Ryan RM, Deci EL. On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. Annual review of psychology. 2001;52(1):141-66.
11. Averill JR, & More, T. A. Handbook of emotions. In: Barrett LF, Lewis M, Haviland-Jones JM, editors. 2nd ed: Guilford Publications; 2016. p. 663 - 76.
12. Telfer E. Happiness. New York: St. Martin's Press; 1980.
13. Wong PT. Positive psychology 2.0: towards a balanced interactive model of the good life. Canadian Psychology/Psychologie Canadienne. 2011;52(2):69.
14. Shanafelt TD. Physician Well-being 2.0: Where Are We and Where Are We Going? Mayo Clinic Proceedings. 2021;96(10):2682-93.
15. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, Mata DA. Prevalence of burnout among physicians: a systematic review. Jama. 2018;320(11):1131-50.
16. Panagioti M, Geraghty K, Johnson J. How to prevent burnout in cardiologists? A review of the current evidence, gaps, and future directions. Trends in cardiovascular medicine. 2018;28(1):1-7.
17. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. Journal of internal medicine. 2018;283(6):516-29.
18. Patel RS, Bachu R, Adikey A, Malik M, Shah M. Factors related to physician burnout and its consequences: a review. Behavioral sciences. 2018;8(11):98.
19. Beacham AO, Brainard A, Janosy N, Reese J. A brief evidence-based intervention to enhance Workplace Well-being and Flourishing in health care professionals: Feasibility and pilot outcomes. Journal of Wellness. 2020;2(1):7.
20. Bazargan-Hejazi S, Shirazi A, Wang A, Shlobin NA, Karunungan K, Shulman J, et al. Contribution of a positive psychology-based conceptual framework in reducing physician burnout and improving well-being: a systematic review. BMC Medical Education. 2021;21(1):593.

21. Larsen D, Chu JT, Yu L, Chang Y, Donelan K, Palamara K. Correlating Burnout and Well-being in a Multisite Study of Internal Medicine Residents and Faculty. J Gen Intern Med. 2021;36(5):1422-6.
22. Seligman M. Flourish: Positive psychology and positive interventions. The Tanner lectures on human values. 2010;31(4):1-56.
23. Seligman ME, Csikszentmihalyi M. Positive psychology: An introduction. Flow and the foundations of positive psychology: Springer; 2014. p. 279-98.
24. Vermette D, Hanson C, Pennarola A, Windish DM. Flourishing Among Internal Medicine Residents: A Cross-Sectional, Multi-institutional Study. Annals of Internal Medicine. 2023;177(1):106-8.
25. Kelly-Hedrick M, Rodriguez MM, Ruble AE, Wright SM, Chisolm MS. Measuring flourishing among internal medicine and psychiatry residents. Journal of graduate medical education. 2020;12(3):312-9.
26. VanderWeele TJ, McNeely E, Koh HK. Reimagining health—flourishing. Jama. 2019;321(17):1667-8.
27. Lebares CC, Greenberg AL, Shui A, Boscardin C, van der Schaaf M. Flourishing as a measure of global well-being in first year residents: a pilot longitudinal cohort study. Journal of Medical Education and Curricular Development. 2021;8:23821205211020758.
28. Mascaro JS, Wallace A, Hyman B, Haack C, Hill CC, Moore MA, et al. Flourishing in Healthcare Trainees: Psychological Well-Being and the Conserved Transcriptional Response to Adversity. International Journal of Environmental Research and Public Health. 2022;19(4):2255.
29. Epstein RM. What's the Opposite of Burnout? : Springer; 2017.
30. Tak HJ, Curlin FA, Yoon JD. Association of intrinsic motivating factors and markers of physician well-being: a national physician survey. J Gen Intern Med. 2017;32(7):739-46.
31. Trockel M, Bohman B, Lesure E, Hamidi MS, Welle D, Roberts L, Shanafelt T. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. Academic Psychiatry. 2018;42(1):11-24.
32. Brown S, Gunderman RB. Viewpoint:: Enhancing the Professional Fulfillment of Physicians. Academic Medicine. 2006;81(6):577-82.
33. Schrijver I, Brady KJ, Trockel M. An exploration of key issues and potential solutions that impact physician wellbeing and professional fulfillment at an academic center. PeerJ. 2016;4:e1783.
34. Olson K, Marchalik D, Farley H, Dean SM, Lawrence EC, Hamidi MS, et al. Organizational strategies to reduce physician burnout and improve professional fulfillment. Current problems in pediatric and adolescent health care. 2019;49(12):100664.
35. Baathe F, Rosta J, Bringedal B, Rø KI. How do doctors experience the interactions among professional fulfilment, organisational factors and quality of patient care? A qualitative study in a Norwegian hospital. BMJ open. 2019;9(5):e026971.
36. Jyothindran R, d'Etienne JP, Marcum K, Tijerina A, Graca C, Knowles H, et al. Fulfillment, burnout and resilience in emergency medicine—Correlations and effects on patient and provider outcomes. PloS one. 2020;15(10):e0240934.
37. Ratcliffe TA, Jasti H, Ortiz J, Curren C, Onumah C, Ripp J, Pincavage AT. Finding Meaning: Internal Medicine Clerkship Director Burnout and Professional Fulfillment. The American journal of medicine. 2022;135(5):654-60. e3.

38. Higgins MC, Siddiqui AA, Kosowsky T, Unan L, Mete M, Rowe S, Marchalik D. Burnout, Professional Fulfillment, Intention to Leave, and Sleep-Related Impairment among Radiology Trainees across the United States (US): A Multisite Epidemiologic Study. Academic Radiology. 2022;29:S118-S25.
39. Menon NK, Shanafelt TD, Sinsky CA, Linzer M, Carlasare L, Brady KJS, et al. Association of Physician Burnout With Suicidal Ideation and Medical Errors. JAMA Network Open. 2020;3(12):e2028780-e.
40. Mendelsohn D. Self in medicine: Determinants of physician well-being and future directions in improving wellness. Medical Education. 2022;56(1):48-55.
41. Trzeciak S, Mazzarelli A, Booker C. Compassionomics: The revolutionary scientific evidence that caring makes a difference: Studer Group Pensacola, FL; 2019.
42. Chochinov HM. Dignity and the essence of medicine: the A, B, C, and D of dignity conserving care. BMJ. 2007;335(7612):184-7.
43. Pavlova A, Wang CX, Boggiss AL, O'Callaghan A, Consedine NS. Predictors of physician compassion, empathy, and related constructs: a systematic review. J Gen Intern Med. 2022:1-12.
44. Lombarts M. Physicians' professional performance: between time and technology: 2010Uitgevers; 2019.
45. Sinclair S, Beamer K, Hack TF, McClement S, Raffin Bouchal S, Chochinov HM, Hagen NA. Sympathy, empathy, and compassion: A grounded theory study of palliative care patients' understandings, experiences, and preferences. Palliative medicine. 2017;31(5):437-47.
46. Debets MPM, Jansen, I., Diepeveen, M., Bogerd, R., Molewijk, B.A.C., Widdershoven, G.A.M., Lombarts, M.J.M.H. Compassionate care through the eyes of patients and physicians: an interview study. PLOS ONE 2024(Under review).
47. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: Hypothesis and experimental approach. Medical Hypotheses. 2017;107:92-7.
48. Pereira L, Figueiredo-Braga M, Carvalho IP. Preoperative anxiety in ambulatory surgery: The impact of an empathic patient-centered approach on psychological and clinical outcomes. Patient Educ Couns. 2016;99(5):733-8.
49. Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. Academic Medicine. 2011;86(3):359-64.
50. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. British journal of general practice. 2013;63(606):e76-e84.
51. Klimecki O, Singer T. Empathy and compassion. Current Biology. 2014;24:R875-R8.
52. Gleichgerrcht E, Decety J. Empathy in clinical practice: how individual dispositions, gender, and experience moderate empathic concern, burnout, and emotional distress in physicians. PloS one. 2013;8(4):e61526.
53. Lamothe M, Boujut E, Zenasni F, Sultan S. To be or not to be empathic: The combined role of empathic concern and perspective taking in understanding burnout in general practice. BMC Family Practice. 2014;15(1).
54. Engen HG, Singer T. Compassion-based emotion regulation up-regulates experienced positive affect and associated neural networks. Social Cognitive and Affective Neuroscience. 2015;10(9):1291-301.
55. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. The lancet. 2009;374(9702):1714-21.

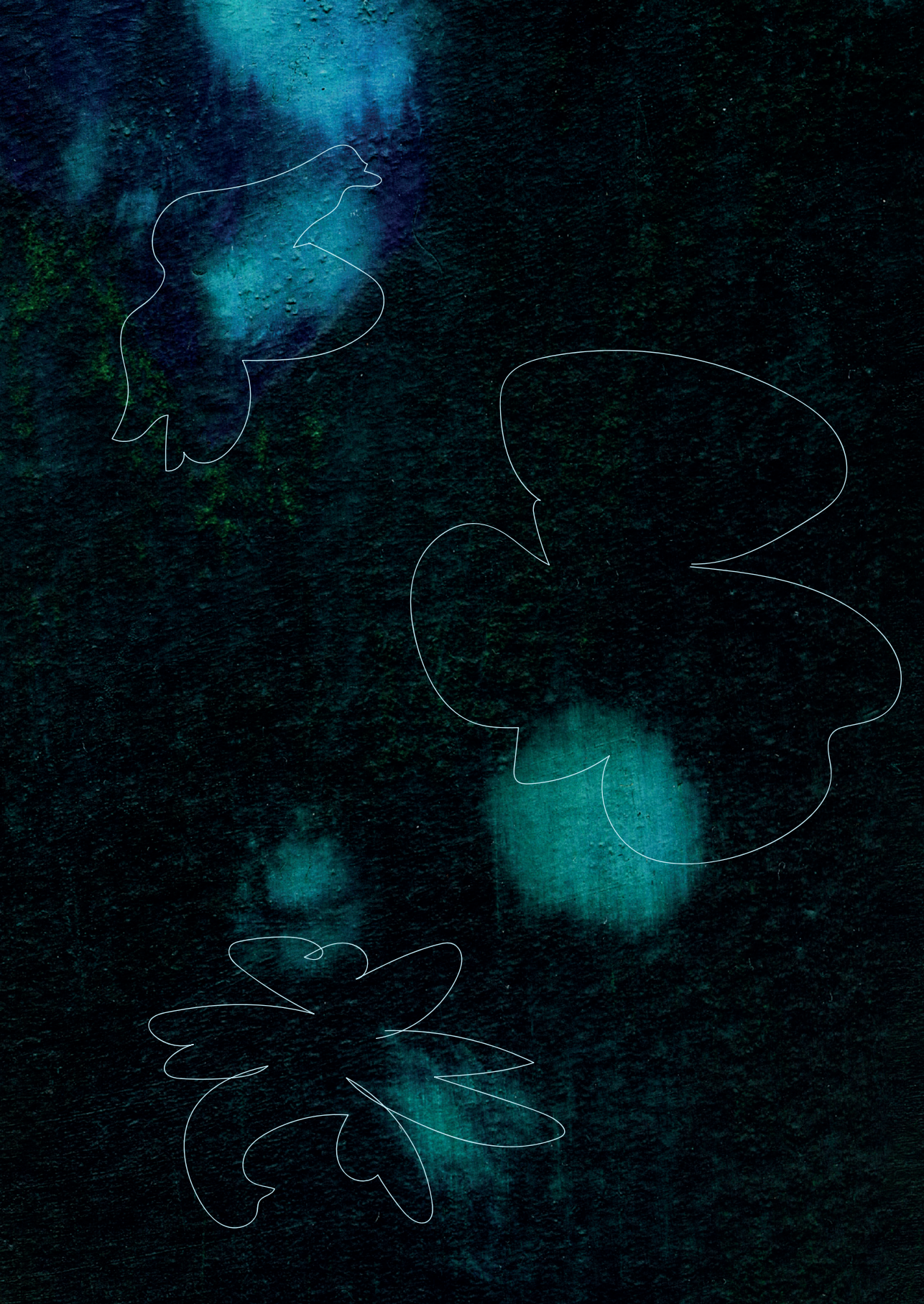
56. West CP, Dyrbye LN, Sinsky C, Trockel M, Tutty M, Nedelec L, et al. Resilience and Burnout Among Physicians and the General US Working Population. JAMA Network Open. 2020;3(7):e209385-e.
57. Marshall AL, Dyrbye LN, Shanafelt TD, Sinsky CA, Satele D, Trockel M, et al. Disparities in Burnout and Satisfaction With Work-Life Integration in U.S. Physicians by Gender and Practice Setting. Acad Med. 2020;95(9):1435-43.
58. Shanafelt TD, Schein E, Minor LB, Trockel M, Schein P, Kirch D. Healing the Professional Culture of Medicine. Mayo Clinic Proceedings. 2019;94(8):1556-66.
59. West CP, Dyrbye LN, Erwin PJ, Shanafelt TD. Interventions to prevent and reduce physician burnout: a systematic review and meta-analysis. The lancet. 2016;388(10057):2272-81.
60. Rodrigues H, Cobucci R, Oliveira A, Cabral JV, Medeiros L, Gurgel K, et al. Burnout syndrome among medical residents: A systematic review and meta-analysis. PloS one. 2018;13(11):e0206840.
61. Korsten L, Verbeek, B., Ploeg, E. van der, Kok, L., Bos, M., Girbes, A. . Nationale a(n)ios-e n q u e ̂te 2022. Gezond en veilig werken. . Utrecht: De Jonge Specialist; 2022.
62. Domagała A, Bała MM, Pen˜a-Sa´nchez JN, Storman D, S' wierz MJ, Kaczmarczyk M, Storman M. Satisfaction of physicians working in hospitals within the European Union: state of the evidence based on systematic review. European journal of public health. 2019;29(2):232-41.
63. Hodkinson A, Zhou A, Johnson J, Geraghty K, Riley R, Zhou A, et al. Associations of physician burnout with career engagement and quality of patient care: systematic review and meta-analysis. bmj. 2022;378.
64. Drenth JPH. Stoppen met de opleiding. Ned Tijdschr Geneeskd. 2014;158(B1031).
65. Jonge medisch specialisten die niet aan de bak komen: verspilling van talent e´n belastinggeld. de Volkskrant. 2021.
66. Shanafelt TD, Balch CM, Dyrbye L, Bechamps G, Russell T, Satele D, et al. Special report: suicidal ideation among American surgeons. Archives of surgery. 2011;146(1):54-62.
67. Oreskovich MR, Kaups KL, Balch CM, Hanks JB, Satele D, Sloan J, et al. Prevalence of alcohol use disorders among American surgeons. Archives of surgery. 2012;147(2):168-74.
68. Van der Heijden F, Dillingh G, Bakker A, Prins J. Suicidal thoughts among medical residents with burnout. Archives of suicide research. 2008;12(4):344-6.
69. Welp A, Meier LL, Manser T. Emotional exhaustion and workload predict clinician-rated and objective patient safety. Frontiers in psychology. 2015;5:111843.
70. Halbesleben JR, Rathert C. Linking physician burnout and patient outcomes: exploring the dyadic relationship between physicians and patients. Health care management review. 2008;33(1):29-39.
71. Shanafelt TD, Balch CM, Bechamps G, Russell T, Dyrbye L, Satele D, et al. Burnout and medical errors among American surgeons. Annals of surgery. 2010;251(6):995-1000.
72. Balch CM, Oreskovich MR, Dyrbye LN, Colaiano JM, Satele DV, Sloan JA, Shanafelt TD. Personal consequences of malpractice lawsuits on American surgeons. Journal of the American College of Surgeons. 2011;213(5):657-67.
73. Levinson W, Chaumeton N. Communication between surgeons and patients in routine office visits. Surgery. 1999;125(2):127-34.
74. Lown BA, Rosen J, Marttila J. An agenda for improving compassionate care: a survey shows about half of patients say such care is missing. Health Affairs. 2011;30(9):1772-8.

75. Van Vliet LM, Francke AL, Meijers MC, Westendorp J, Hoffstädt H, Evers AW, et al. The use of expectancy and empathy when communicating with patients with advanced breast cancer; an observational study of clinician–patient consultations. Frontiers in psychiatry. 2019;10:464.
76. Derksen F, Olde Hartman T, Bensing J, Lagro-Janssen A. Empathy in general practice—the gap between wishes and reality: comparing the views of patients and physicians. Family Practice. 2018;35(2):203-8.
77. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. BMC Palliative Care. 2022;21(1):80.
78. Sinclair S, Norris JM, McConnell SJ, Chochinov HM, Hack TF, Hagen NA, et al. Compassion: a scoping review of the healthcare literature. BMC palliative care. 2016;15:6-.
79. Goetz JL, Keltner D, Simon-Thomas E. Compassion: an evolutionary analysis and empirical review. Psychological bulletin. 2010;136(3):351-74.
80. Gaufberg E, Hodges B. Humanism, compassion and the call to caring. Wiley Online Library; 2016. p. 264-6.
81. Bendapudi NM, Berry LL, Frey KA, Parish JT, Rayburn WL, editors. Patients' perspectives on ideal physician behaviors. Mayo Clinic Proceedings; 2006: Elsevier.
82. West CP, Huschka MM, Novotny PJ, Sloan JA, Kolars JC, Habermann TM, Shanafelt TD. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. Jama. 2006;296(9):1071-8.
83. Lloyd M, Carson A. Making compassion count: Equal recognition and authentic involvement in mental health care. International Journal of Consumer Studies. 2011;35(6):616-21.
84. Van der Cingel M. Compassion in care: A qualitative study of older people with a chronic disease and nurses. Nursing ethics. 2011;18(5):672-85.
85. Bertakis KD, Azari R. Patient-centered care is associated with decreased health care utilization. The Journal of the American Board of Family Medicine. 2011;24(3):229-39.
86. Epstein RM, Franks P, Shields CG, Meldrum SC, Miller KN, Campbell TL, Fiscella K. Patient-centered communication and diagnostic testing. The Annals of Family Medicine. 2005;3(5):415-21.
87. Sanchez LD, Wolfe RE. Physician well-being. Emergency Medicine Clinics. 2020;38(2):297-310.
88. Trockel M, Sinsky C, West CP, Dyrbye LN, Tutty M, Carlasare L, et al., editors. Self-valuation challenges in the culture and practice of medicine and physician well-being. Mayo Clinic Proceedings; 2021: Elsevier.
89. Trockel MT, Hamidi MS, Menon NK, Rowe SG, Dudley JC, Stewart MT, et al., editors. Self-valuation: Attending to the most important instrument in the practice of medicine. Mayo Clinic Proceedings; 2019: Elsevier.
90. Tan JST. Hiding behind the “perfect” mask: a phenomenological study of Filipino university students’ lived experiences of perfectionism. International Journal of Qualitative Studies on Health and Well-being. 2022;17(1):2062819.
91. PL H. Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. J Pers Soc Psychol. 1990;60:456-70.
92. Thomas M, Bigatti S. Perfectionism, impostor phenomenon, and mental health in medicine: a literature review. International journal of medical education. 2020;11:201.
93. Martin SR, Fortier MA, Heyming TW, Ahn K, Nichols W, Golden C, et al. Perfectionism as a predictor of physician burnout. BMC Health Services Research. 2022;22:1-7.

94. Kleinhendler-Lustig D, Hamdan S, Mendlovic J, Gvion Y. Burnout, depression, and suicidal ideation among physicians before and during COVID-19 and the contribution of perfectionism to physicians' suicidal risk. Frontiers in psychiatry. 2023;14:1211180.
95. Perez B, Knych SA, Weaver SJ, Liberman A, Abel EM, Oetjen D, Wan TT. Understanding the barriers to physician error reporting and disclosure: a systemic approach to a systemic problem. Journal of patient safety. 2014;10(1):45-51.
96. Trockel M. Calling, compassionate self, and cultural norms in medicine. The Art and Science of Physician Wellbeing: A Handbook for Physicians and Trainees. 2019:3-17.
97. Gilbert P, Clarke M, Hempel S, Miles JN, Irons C. Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. British Journal of Clinical Psychology. 2004;43(1):31-50.
98. Vaglum P, Falkum E. Self-criticism, dependency and depressive symptoms in a nationwide sample of Norwegian physicians. Journal of affective disorders. 1999;52(1-3):153-9.
99. Sampath H, Das D, Soohinda G, Dutta S. Is Excessive Self-Criticism and Inadequate Self-Compassion Hurting the Well-Being of Future Doctors? Depression. 2019;5:4.30.
100. Montero-Marí´n J, Gaete J, Demarzo M, Rodero B, Lopez LCS, Garcí´a-Campayo J. Self-criticism: a measure of uncompassionate behaviors toward the self, based on the negative components of the self-compassion scale. Frontiers in Psychology. 2016;7:1281.
101. Yeager DS, Dweck CS. What can be learned from growth mindset controversies? American psychologist. 2020;75(9):1269.
102. Johnson KM, Slavin SJ, Takahashi TA. Excellent vs excessive: helping trainees balance performance and perfectionism. Journal of Graduate Medical Education. 2023;15(4):424-7.
103. Sanchez-Reilly S, Morrison LJ, Carey E, Bernacki R, O'Neill L, Kapo J, et al. Caring for oneself to care for others: physicians and their self-care. J Support Oncol. 2013;11(2):75-81.
104. Kuhn CM, Flanagan EM. Self-care as a professional imperative: physician burnout, depression, and suicide. Canadian Journal of Anesthesia. 2017;64(2):158.
105. (CGS) RGS. Kaderbesluit CGS inw. juli 2024. 2019.
106. Menon NK, Trockel M. Creating a Culture of Wellness. The Art and Science of Physician Wellbeing: Springer; 2019. p. 19-32.
107. Bohman B, Dyrbye L, Sinsky CA, Linzer M, Olson K, Babbott S, et al. Physician well-being: the reciprocity of practice efficiency, culture of wellness, and personal resilience. NEJM Catalyst. 2017;3(4).
108. Bingemann TA, Laubach S. Physician well-being in allergy and immunology: Creating a culture of wellness. Annals of Allergy, Asthma & Immunology. 2021;126(3):219-27.
109. Cochrane BS, Ritchie D, Lockhard D, Picciano G, King JA, Nelson B. A culture of compassion: How timeless principles of kindness and empathy become powerful tools for confronting today's most pressing healthcare challenges. Healthc Manage Forum. 2019;32(3):120-7.
110. Edmondson A. Psychological safety and learning behavior in work teams. Administrative science quarterly. 1999;44(2):350-83.
111. Shanafelt TD, Gorringe G, Menaker R, Storz KA, Reeves D, Buskirk SJ, et al., editors. Impact of organizational leadership on physician burnout and satisfaction. Mayo Clinic Proceedings; 2015: Elsevier.

112. Swensen S, Kabcenell A, Shanafelt T. Physician-organization collaboration reduces physician burnout and promotes engagement: the Mayo Clinic experience. Journal of Healthcare Management. 2016;61(2):105-27.
113. Brown CB, LMSW B. The power of vulnerability. Sounds True Louisville, CO; 2012.
114. Neff K. Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. Self and identity. 2003;2(2):85-101.
115. Teunissen PW. Unravelling learning by doing. A study of workplace learning in postgraduate medical education [dissertation]. Amsterdam, Netherlands: VU University Amsterdam: s.n.; 2009.
116. Association RDM. Stimulans voor interne kwaliteitsverbetering van de geneeskundige vervolgopleidingen (Scherpbier 2.0). 2015.
117. Koninklijke Nederlandse Maatschappij tot bevordering der Geneeskunst. Over de RGS. [Available from: https://www.knmg.nl/ik-ben-arts/rgs/rgs/over-de-rgs.
118. (CGS) RGS. Beleidsregels RGS en nadere richtlijnen erkenningen. 2023.
119. Bindels E, Boerebach B, Scheepers R, Nooteboom A, Scherpbier A, Heeneman S, Lombarts K. Designing a system for performance appraisal: balancing physicians' accountability and professional development. BMC Health Services Research. 2021;21:1-12.
120. Federatie Medisch Specialisten. Opbouw van de opleiding. [Available from: https://demedischspecialist.nl/medische-vervolgopleidingen/opbouw-van-de-opleiding.
121. Patel RK, Sweeney MD, Baker CSR, Greenberg N, Piper SE, Shergill SS, et al. If not now, when? Enhancing cardiologists' psychological well-being as a COVID-19 gain. Heart. 2021;107(7):593-5.
122. Mehta Laxmi S, Lewis Sandra J, Duvernoy Claire S, Rzeszut Anne K, Walsh Mary N, Harrington Robert A, et al. Burnout and Career Satisfaction Among U.S. Cardiologists. Journal of the American College of Cardiology. 2019;73(25):3345-8.
123. Dev V, Fernando AT, Consedine NS. Self-compassion as a stress moderator: A cross-sectional study of 1700 doctors, nurses, and medical students. Mindfulness. 2020:1-12.
124. Raab K. Mindfulness, self-compassion, and empathy among health care professionals: a review of the literature. Journal of health care chaplaincy. 2014;20(3):95-108.
125. Durkin M, Beaumont E, Hollins Martin CJ, Carson J. A pilot study exploring the relationship between self-compassion, self-judgement, self-kindness, compassion, professional quality of life and wellbeing among UK community nurses. Nurse Education Today. 2016;46:109-14.
126. Solms L, Van Vianen A, Koen J, Theeboom T, De Pagter AP, De Hoog M. Turning the tide: a quasi-experimental study on a coaching intervention to reduce burn-out symptoms and foster personal resources among medical residents and specialists in the Netherlands. BMJ open. 2021;11(1):e041708.
127. Sinclair S, Kondejewski J, Raffin-Bouchal S, King-Shier KM, Singh P. Can self-compassion promote healthcare provider well-being and compassionate care to others? Results of a systematic review. Applied Psychology: Health and Well-Being. 2017;9(2):168-206.
128. Dignity Health Survey Finds Majority of Americans Rate Kindness as Top Factor in Quality Health Care. Patients willing to pay more and travel further for kinder treatment; Philadelphia receives top grade as kindest city for health care. San Fransisco: Dignity Health 2013.

129. Zulman DM, Haverfield MC, Shaw JG, Brown-Johnson CG, Schwartz R, Tierney AA, et al. Practices to Foster Physician Presence and Connection With Patients in the Clinical Encounter. JAMA. 2020;323(1):70-81.
130. Wear D, Zarconi J. Can compassion be taught? Let's ask our students. J Gen Intern Med. 2008;23:948-53.
131. Co^te´ L, Laughrea P-A. Preceptors' Understanding and Use of Role Modeling to Develop the CanMEDS Competencies in Residents. Academic Medicine. 2014;89(6):934-9.
132. Nadkarni A, Harry E, Rozenblum R, Kimberly HH, Schissel SL, DeOliveira MC, et al. Understanding perceived appreciation to create a culture of wellness. Academic Psychiatry. 2022;46(2):228-32.



# Chapter 2

## Work-Related well-being among Dutch cardiologists: A national survey

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*Current problems in cardiology. 2023;48(4):101538.*

**ABSTRACT**

**Aims**

This is the first study to provide a holistic examination of cardiologists' well-being, investigating positive and negative dimensions, and its determinants.

**Methods**

We conducted a national, multicenter, self-administered web-based questionnaire. We used frequencies to depict scores on three well-being indicators (professional fulfillment, work exhaustion and interpersonal disengagement) and performed three multiple regression analyses to elucidate their determinants.

**Results**

Cardiologists' mean scores (scale 1 to 5) were 3.85 (SD = 0.62) for professional fulfillment, 2.25 (SD = 0.97) for work exhaustion and 2.04 (SD = 0.80) for interpersonal disengagement. Workload, work-home interference and team atmosphere predicted the negative dimensions of well-being. Autonomy predicted cardiologists' professional fulfillment. Physician-patient interactions, person-job fit and individual resilience affected both dimensions.

**Conclusion**

Dutch cardiologists score relatively high on professional fulfillment and average on work exhaustion and interpersonal disengagement. In order to foster cardiologists' well-being it is critical to increase energy providing work- and individual aspect.

## INTRODUCTION

Physician well-being is critical for physicians, healthcare systems and patients. High levels of well-being are found to increase job satisfaction and workplace productivity, and also improve the quality and safety of patient care. (1-7) Unfortunately, the medical profession is facing an actual well-being crisis. Alarming percentages of burnout, mental ill-health and even suicides are being reported across specialties worldwide. (2) Cardiology is no exception; as a leading area of medicine, working in the field of cardiology can be extremely rewarding and at the same time very demanding and strenuous – potentially having detrimental consequences for mental health, resulting in cardiologists withdrawing from the profession, workforce shortages and further rising healthcare costs. (8-11)

Only a handful of studies investigated the well-being of cardiologists specifically. (9-11) These studies primarily focused solely on the negative dimension of work-related well-being: burnout. Results show that the burnout rates amongst cardiologists are significant and have been reported up to 50% of the US cardiologists in 2017.(9, 11-14) Potential causes are, amongst others, excessive workloads, loss of autonomy, loss of connectedness with patients, and compensation models linked to volume load rather than to quality of care. (9) In addition, cardiologists are reported to experience difficulties in managing work-home balance, especially in the light of their generally perfectionistic attitudes. (9,11) Although these studies are informative, physician well-being encompasses more than just "not being burned out". As a matter of fact, a more comprehensive understanding should also include positive aspects of being well personally and professionally. (2, 15)

Professional fulfillment can be seen as a positive dimension of work-related well-being. (15) It includes a larger palette of intrinsic rewards that cardiologists might experience from doing their job, such as work engagement, self-worth, self-efficacy, and happiness. (15) Through experiencing these and other intrinsic rewards, professionally fulfilled cardiologists work with joy and meaningfulness, are less likely to leave the profession, and indeed deliver better measurable patient care. (16-18) Thus, it is critical to hold on to a holistic perspective on physician well-being and look beyond merely the absence of distress.

In order to study the current status quo of well-being of its members, the Netherlands Society of Cardiology ordered a national survey into cardiologists' well-being and its determinants. The specific aims of this study were to investigate 1) Dutch cardiologists experienced positive and negative work-related well-being and 2) What specific work- and individual aspects determine their work-related well-being.

## METHODS

### Study design and population

This study into the occupational well-being of Dutch cardiologists was commissioned by the Netherlands Society of Cardiology (NVVC). In 2020, the Professional Performance & Compassionate Care research group conducted a cross-sectional survey study amongst all cardiologists who were registered as NVVC members. Cardiologists in the Netherlands provide their services in general hospitals (hospitals that provide all basic patient care), top clinical teaching hospitals (highly specialized referral centers that provide top clinical care), academic hospitals and independent outpatient care facilities (single-specialty

stand-alone centers for specialist care). Based on internal documents of the NVVC, they are either self-employed (approx. 48%) or employed by hospitals (approx. 52%). In 2021, approximately 72% of all cardiologists in the Netherlands were male and their average age was 48 years.

**Ethical approval**

The institutional ethical review board of the Amsterdam UMC of the University of Amsterdam provided a waiver declaring the Medical Research Involving Human Subjects Act (WMO) did not apply to the current study (reference number W20_324 # 20.323).

**Questionnaire development**

In designing the questionnaire, we built on 2 models: the Stanford Model of Professional Fulfillment and the Job-Demands and Resources (JD-R) model (20) (Figure 1). The latter identifies job resources of energy (JR) and energy-consuming determinants (JD) that affect work-related well-being, and the Stanford model suggests to categorize these work-related aspects as related to 1) work structure and efficiency of practice, 2) the organizational culture and the work environment, and 3) personal skills, behaviors and attitudes that promote individual resilience. It is theorized that aspects in all three domains may affect physician well-being. (19) Figure 1 depicts per domain all the potential determinants included in the current study. Most included were considered theoretically relevant (i.e.: psychological safety, individual resilience); after discussion with the Quality Committee of the NVVC a few items (i.e.: working hours per week, burden of shifts) were constructed by the authors because they were relevant for the Dutch

context specifically. As control variables, the authors included sex, first registration year and type of hospital (academic/ nonacademic) in the questionnaire. Lastly, since this this study was conducted in September 2020, 10 questions were included to inquire whether, and if yes how, the COVID-19 pandemic had impacted different aspects of the work and work experience.



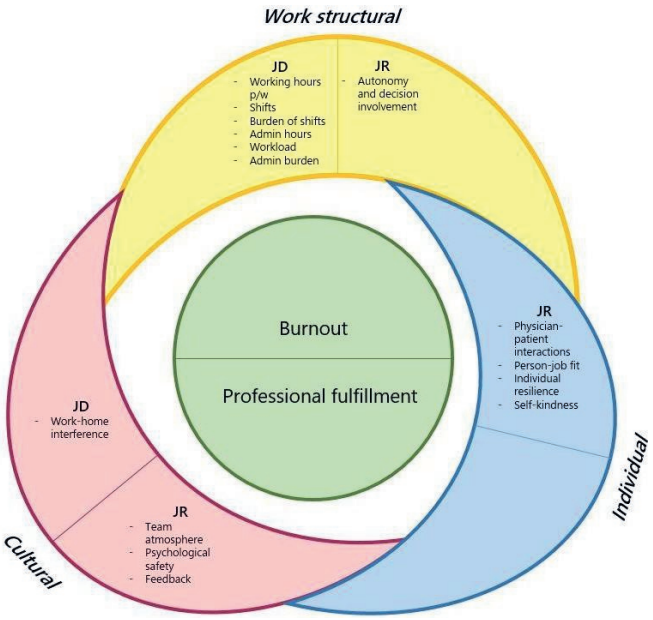



*Figure 1. Conceptual model of cardiologists' work-related well-being and the possible modifying energy consuming job demands (JD) and energy providing resources (JR), divided over the work structural, cultural and individual domain. Not depicted but included in the model are the covarying factors sex, years of experience as a cardiologist and type of institution.*

**Measures**

We measured cardiologists work-related well-being using the Professional Fulfillment Index (PFI). (15) The previously validated PFI consists of 16 items categorized in 3 domains, professional fulfillment (6 items), work-exhaustion (4 items) and interpersonal disengagement (6 items). The first is the positive well-being indicator, the latter 2 domains are the negative wellbeing domains, also considered burnout symptoms. All items are measured on a 5-point Likert scale.

We measured determinants of well-being in three domains. The *work structure domain* consisted of the following sub-constructs: acutal working hours per week (1 item), weekend-, evening- and night shifts per month in total (2 items), hours spent on administrative tasks per week (1 item), experienced burden of shifts (1 item), experienced workload (1 item), experienced administrative burden (1 item), autonomy and decision involvement (5 items). The first three scales were answered with an open box and the other 4 were scored on a 5 point-Likert scale.

The *cultural domain* included 4 sub-constructs: work-home interference (9 items), experienced team atmosphere (5 items), experienced psychological safety (7 items) and feedback (4 items). All items were scored on a 5-point Likert scale, except for those assessing work-home interference which were measured on a 4-point Likert scale.

The *individual domain* consisted of: physician-patient interactions (4 items), person-job fit (4 items), individual resilience (6 items) and self-kindness (5 items). All items were scored on a 5-point Likert scale.

Table 1 summarizes all the measures (subconstructs) used, the number of items per subconstruct, the answer scales, their place of origin (reference) and the calculated

reliability score (Cronbach's alpha). A combination of open text boxes, fixed boxes with multiple answer options and Likert-scales was used to measure the various items.

**Table 1. Details of measures used in the questionnaire**

| Domain | Sub-construct | No. of items | Example item | Answer option(s) | Reference** | Crohnbach's alpha |
|---|---|---|---|---|---|---|
| **Occupational well-being** | Professional fulfillment | 6 | *"My work is meaningful to me."* | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *(Trockel et al., 2018)* | 0.88 |
| | Work exhaustion | 3 (originally 4) | *"During the past two weeks I have felt emotionally exhausted at work."*<br><br>*The authors left out the item: "During the past two weeks I have felt physically exhausted at work."** | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Trockel et al. (2018)* | 0.87 |
| | Interpersonal disengagement | 6 | *"During the past two weeks my work has contributed to me feeling less empathetic with my patients."* | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *(Trockel et al., 2018)* | 0.92 |
| **Work structure** | (Actual) working hours per week | 1 | *"On average, how many hours do you actually work per week?"* | Open box | N/A | N/A |
| | Weekend-, evening- and night-shifts per month | 2 | *"On average, how many weekend-shifts do you work per month?"* | Open box | N/A | N/A |
| | Hours spent on administrative tasks p/w | 1 | *"How many hours per week do you spend on administrative tasks?"* | Open box | N/A | N/A |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Experienced burden of shifts | 1 | *"In general, how do you experience the burden of shifts at work?"* | 5-point Likert scale (1 = Not at all heavy, 5 = Very heavy) | N/A | N/A |
| | Experienced workload | 1 | *"My workload is too high."* | 5-point Likert scale (1 = Never, 5 = Always) | N/A | N/A |
| | Experienced administrative burden | 1 | *"My administrative burden is too high."* | 5-point Likert scale (1 = Never, 5 = Always) | N/A | N/A |
| | Autonomy and decision involvement | 5 | *"I am allowed to decide myself how to perform my work."* | 5-point Likert scale (1 = Never, 5 = Always) | *Schaufeli (2017).* | 0.82 |
| **Cultural** | Work-home interference | 9 | *"How often does it happen that you are irritable at home because your work is demanding?"* | 4-point Likert scale (1 = Never, 4 = Always) | *Marais et al. (2009)* | 0.87 |
| | Experienced team atmosphere | 5 (originally 4) | *"People support one another in this unit."*<br><br>*"The atmosphere in my unit is good." (Item added by authors)** | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Smits et al. (2008)* | 0.89 |
| | Experienced psychological safety | 7 | *"Members of this team are able to bring up problems and tough issues."* | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Edmondson (1999)* | 0.79 |
| | Feedback | 4 | *"I often receive positive feedback from my fellow cardiologists". (Items were adjusted for our study population)** | 5-point Likert scale<br><br>(1 = Totally disagree, 5 = Totally agree) | *Lombarts et al. (2010)* | 0.73 |
| **Individual** | Physician-patient interactions | 4 | *"The gratitude displayed by my patients keeps me going."* | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Williams et al. (1999).* | 0.62 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Person-job fit | 4 (originally 3) | *"My total compensation package is fair."*<br><br>*"My work matches my competencies and what gives me energy." (Item added by authors)** | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Williams et al. (1999)* | 0.73 |
| | Individual resilience | 6 | *"I tend to bounce back quickly after hard times."* | 5-point Likert scale (1 = Totally disagree, 5 = Totally agree) | *Smith et al. (2008)* | 0.86 |
| | Self-kindness | 5 | *"I try to be loving towards myself when I am feeling emotional pain."* | 5-point Likert scale (1 = Never, 5 = Always) | *Neff (2016)* | 0.82 |
| **Covariates** | Sex | 1 | *"What is your sex?"* | Male/ female/other | N/A | N/A |
| | Years of experience as a cardiologist | 1 | *"In what year were you first registered as a medical specialist?"* | Open box | N/A | N/A |
| | Type of institution (transformed into dummy academic/ non-academic) | 1 | *"In what type of institution are you working?"* | General hospital, top clinical hospital, university hospital, independent outpatient care facility | N/A | N/A |

** All added/ removed/ adjusted items were the result of thorough discussion between the research team and the NVVC.*

***N/A in this column means that the item(s) were created by the authors themselves.*

**Data collection**

Late September 2020, a little over half a year into the COVID pandemic, in total 1081 NVVC registered cardiologists were individually invited per email by the principal researcher (RB) to participate in a web-based questionnaire, using the Castor EDC program. The NVVC provided the email addresses. Digital informed consent was obtained and participants' anonymity and confidentiality were safeguarded. Data collection lasted till December 2020 and up till 4 reminders were sent during that period. After completion of the data collection, data were extracted from Castor EDC and stored on a secure drive for analysis.

**Statistical analyses**

Data from participants with more missing than two thirds of the survey item responses were excluded from further analysis (n=8), leaving 374 cases available for analysis. The data were screened for extreme or unrealistic data using the SPSS functions 'Sort ascending' and 'Sort descending'. No extreme or unrealistic scores were found in the data.

First, we estimated the descriptive statistics (proportions) in order to understand the characteristics of our study sample using frequencies. Second, we calculated the reliability coefficients of all included scales in our survey using Cronbach's alpha. The alpha's were found to be good to high varying between 0.73 and 0.92, with the exception of 4-item subscale 'Physician-patient interactions' which had a Cronbach's alpha of 0.62 (see Table 1). After internal discussion, this variable remained in the sample due to its relevance. For multiple-item variables, scale scores were computed by averaging the individual items.

For the primary research question on the status quo of Dutch cardiologists' perceived positive and negative work-related well-being (defined as professional fulfillment, work exhaustion, interpersonal disengagement), we calculated the mean, minimum and maximum scores on all job-demands and resources and the 3 subscales of the Professional Fulfillment Index (PFI) using descriptive statistics.

Subsequently, we used Pearson's Correlations for calculating the associations among the variables and a Variance Inflation Factor (VIF) to check for multicollinearity. Recommended VIF cut-off scores for problematical levels of multicollinearity may vary, but have been set at 2.5 at the lowest. (20, 21) We used a Variance Inflation Factor (VIF)-cut off score of 2.5 which was not exceeded, with an exception of psychological safety (VIF = 2.536). Psychological safety showed a correlation with team atmosphere of r = 0.731. Since the VIF-cut off score was only just exceeded and both factors were considered relevant for the second research question, the investigators decided to keep both variables for analysis.

Lastly, 3 unadjusted and 3 adjusted multiple regression analyses, using the covariates listed in the questionnaire development section, were performed to answer the second part of our research question: What specific work- and individual aspects determine cardiologists' work-related well-being? The various determinants were included as independent variables and respectively professional fulfillment, work exhaustion and interpersonal disengagement as the dependent variable. Rather than using $\alpha = 0.05$, we interpreted results with a Bonferroni corrected adjustment of $\alpha = 0.017$ to account for performing 3 multiple regression analyses in the same sample. All analyses were performed using the SPSS Statistics (version 26; IBM, Armonk, New York).

## RESULTS

In total, 382 (response rate 34.6%, which is in line with response rates found in similar published works on physician well-being, also during COVID) (11,22) cardiologists entered the survey, of which 374 were available for analysis. Most respondents were male (*n* = 273, 73.0%), between 36 and 45 years old (*n* = 145, 38.8%) and worked in a general hospital (*n* = 154, 42.2%). Table 2 reports the demographic characteristics of the respondents in this study – showing that our sample is representative for the population with regards to sex and age.



**Table 2. Demographics characteristics of the participants**

| Demographic characteristics | N (374) | Frequency (%) |
|---|---|---|
| **Sex** | | |
| Male | 273 | 73.0 |
| Female | 101 | 27.0 |
| **Age (years)** | | |
| < 36 | 15 | 4.0 |
| 36-45 | 145 | 38.8 |
| 46-55 | 112 | 29.9 |
| 56-65 | 95 | 25.4 |
| > 65 | 7 | 1.9 |
| **First registration (year)** | | |
| 1981-1990 | 19 | 5.1 |
| 1991-2000 | 64 | 17.1 |
| 2001-2010 | 139 | 37.2 |
| 2011-2021 | 152 | 62.8 |
| **Type of institute** | | |
| General hospital | 154 | 41.2 |
| Top clinical hospital | 129 | 34.5 |
| Academic hospital | 62 | 16.6 |
| Independent outpatient care facility | 20 | 5.5 |
| Missing | 9 | 2.4 |

Table 3 reports the outcomes of the 3 subscales of the Professional Fulfillment Index (PFI) and the work- and individual aspects per domain. The reported PFI scores were 3.85 (SD = 0.62) for professional fulfillment, 2.25 (SD = 0.97) for work exhaustion and 2.04 (SD = 0.80) for interpersonal disengagement, all measured on a 5-point Likert scale. Regarding *work structure* aspects Dutch cardiologists worked on average 50.25 hours per week of which they spent 7.10 hours on administrative tasks. The experienced burden of shifts (M = 3.06 out of 5, SD = 0.89) and the experienced workload (M = 2.75 out of 5, SD = 0.92) were lower than the experienced administrative burden (M = 3.38 out of 5, SD = 1.06). 'Autonomy and decision involvement' was rated with a mean score of 2.80 (SD = 0.75) on a 5-point Likert scale. With regard to *cultural aspects*, the experienced team atmosphere was given the highest score (M = 3.75, SD = 0.72) and feedback the lowest (M = 3.07, SD = 0.59). Work-home interference scored a 2.21 (SD=0.47) on a 4-point Likert scale. For *individual aspects*, the physician-patient interactions rated highest (M = 3.71 out of 5, SD = 0.55) and self-kindness lowest (M = 2.67 out of 4, SD = 0.68).

**Table 3. Mean scores, standard deviations, minimum and maximum scores for the various job demands and resources and the three subscales of the Professional Fulfillment Index (PFI).**

| | Mean (SD) | Minimum (Min) | Maximum (Max) |
|---|---|---|---|
| **Occupational well-being** | | | |
| Professional fulfillment (1-5) | 3.85 (0.62) | 1.33 | 5.00 |
| Work exhaustion (1-5) | 2.25 (0.97) | 1.00 | 5.00 |
| Interpersonal disengagement (1-5) | 2.04 (0.80) | 1.00 | 4.83 |
| **Work structure aspects** | | | |
| (Actual) working hours (hours per week) | 50.25 (10.14) | 9.00 | 90 |
| Weekend-, evening- and night-shifts (shifts per month) | 5.79 (4.51) | 0.00 | 28.00 |
| Experienced burden of shifts (1-5) | 3.06 (0.89) | 1.00 | 5.00 |
| Hours spent on administrative tasks (hours per week) | 7.10 (4.77) | 0.00 | 36.00 |
| Experienced workload (1-5) | 2.75 (0.92) | 1.00 | 5.00 |

| | | | |
|---|---|---|---|
| Experienced administrative burden (1-5) | 3.38 (1.06) | 1.00 | 5.00 |
| Autonomy and decision involvement (1-5) | 2.80 (0.75) | 1.00 | 5.00 |
| **Cultural aspects** | | | |
| Work-home interference (1-4) | 2.21 (0.47) | 1.00 | 4.00* |
| Experienced team atmosphere (1-5) | 3.75 (0.71) | 1.20 | 5.00 |
| Experienced psychological safety (1-5) | 3.71 (0.60) | 1.29 | 5.00 |
| Feedback (1-5) | 3.07 (0.59) | 1.25 | 5.00 |
| **Individual aspects** | | | |
| Physician-patient interactions (1-5) | 3.71 (0.55) | 1.75 | 5.00 |
| Person-job fit (1-5) | 3.39 (0.73) | 1.00 | 5.00 |
| Individual resilience (1-5) | 3.46 (0.66) | 1.33 | 5.00 |
| Self-kindness (1-5) | 2.76 (0.68) | 1.20 | 5.00 |

**Work-home interference was the only (ordinal) variable measured on a 4-point Likert scale.*



Table 4 reports the outcomes of the multiple linear regression analyses (both adjusted and unadjusted) of all work and individual aspects with professional fulfillment, work exhaustion and interpersonal disengagement as the dependent variables. We report the coefficients of the adjusted models in text.

*Professional fulfillment*

'Autonomy and decision involvement' was the only work structure aspect that showed a significant positive association with professional fulfillment (b = 0.160, 95% CI, 0.083 to 0.238, p = 0.000). No cultural aspects were found to significantly predict Dutch cardiologists' professional fulfillment. As for the individual aspects, we found significant positive associations with professional fulfillment for physician-patient interactions (b = -.376, 95% CI, 0.293 to 0.460, p = 0.000), person-job fit (b = 0.159, 95% CI, 0.086 to 0.231, p =0.000) and individual resilience (b = 0.125, 95% CI, 0.045 to 0.205, p <0.01).

*Work exhaustion*

For work structure aspects we found a significant positive association between experienced workload and work exhaustion (b = 0.188, 95% CI, 0.077 to 0.299, p = 0.001). Within the cultural domain, work-home interference was the only aspect related to work exhaustion (b = 0.470, 95% CI, 0.251 to 0.690, p = 0.000). As for the individual aspects, physician-patient interactions (b = -0.309, CI 95% -0.445 to -0.173, p = 0.000), person-job fit (b = -0.169, 95% CI -0.286 to -0.051, p <0.01), and individual resilience (b = -0.263, 95% CI, -0.393 to -0.133, p = 0.000) were found to predict work exhaustion.

*Interpersonal disengagement*

We found no significant associations between work structure aspects and interpersonal disengagement. As for the cultural aspects, we found a significant positive association with interpersonal disengagement for work-home interference (b = 0.520, 95% CI, 0.336 to 0.704, p = 0.000) and team atmosphere (b = -0.218, 95% CI, -0.351 to -0.084, p = 0.001). Physician-patient interactions (b = -0.317, 95% CI, -0.431 to -0.203, p = 0.000) and individual resilience (b = -0.202, 95% CI, -0.312 to -0.093, p = 0.000) were the two individual aspects related negatively to interpersonal disengagement. Table 4 also reports which coefficients would have been significant if we had interpreted our results with an alpha of 0.05 instead of with a Bonferroni adjusted alpha of 0.017 (see † $p \leq 0.05$). With respect to our COVID control questions, we assess the findings are at the most slightly impacted by the pandemic (Supplemental File I).

| Table 4. Unadjusted and adjusted associations of job demands and resources with professional fulfillment, work exhaustion and interpersonal disengagement. | | | | | | |
|---|---|---|---|---|---|---|
| | **Unadjusted model for professional fulfillment** | **Adjusted model for professional fulfillment[a]** | **Unadjusted model for work exhaustion** | **Adjusted model for work exhaustion[a]** | **Unadjusted model for interpersonal disengagement** | **Adjusted model for interpersonal disengagement[a]** |
| | Unstandardized regression coefficient (95% CI)/ Standardized coefficient Beta | Unstandardized regression coefficient (95% CI)/ Standardized coefficient Beta | Unstandardized regression coefficient B (95% CI)/ Standardized coefficient Beta | Unstandardized regression coefficient (96% CI)/ Standardized coefficient Beta | Unstandardized regression coefficient (95% CI)/ Standardized coefficient Beta | Unstandardized regression coefficient (95% CI)/ Standardized coefficient Beta |
| **Work structure** | | | | | | |
| (Actual) working hours per week | 0.001 (-0.004 – 0.006)/ 0.015 | 0.000 (-0.005 – 0.005)/ 0.000 | -0.010 (-0.018 - -0.002)*/ -0.103 | -0.009 (-0.017 - 0.000)/ -0.091 | -0.006 (-0.013 – 0.001)/ -0.079 | -0.006 (-0.013 – 0.002)/ -0.072 |
| Weekend-, evening- and night-shifts per month | -0.003 (-0.014 – 0.007)/ -0.025 | -0.005 (-0.015 – 0.006)/ -0.035 | 0.007 (-0.010 – 0.024)/ 0.032 | 0.008 (-0.010 – 0.026)/ 0.037 | 0.013 (-0.001 – 0.027)/ 0.074 | 0.014 (-0.001 – 0.029)/ 0.080 |
| Experienced burden of shifts | 0.003 (-0.057 – 0.064)/ 0.005 | 0.017 (-0.045 – 0.079)/ 0.024 | 0.111 (0.015 – 0.208)/ 0.101 | 0.105 (0.004 – 0.206)/ 0.096 | 0.058 (-0.023 – 0.138)/ 0.064 | 0.053 (-0.032 – 0.137)/ 0.059 |
| Hours spent on administrative tasks p/week | 0.003 (-0.007 – 0.013)/ 0.022 | 0.000 (-0.010 – 0.010)/ 0.000 | -0,000 (-0.016 – 0.017)/ -0.000 | -0.000 (-0.017 – 0.017)/ -0.000 | -0.001 (-0.013 – 0.015)/ 0.005 | 0.002 (-0.013 – 0.016)/ 0.011 |
| Experienced workload | 0.025 (-0.043 – 0.093) / 0.037 | 0.004 (-0.064 – 0.072)/ 0.006 | 0.174 (0.066 – 0.282)**/ 0.165 | 0,188 (0.077 – 0.299)** / 0.178 | 0.034 (-0.056 – 0.125)/ 0.040 | 0.054 (-0.039 – 0.147)/ 0.063 |
| Experienced administrative burden | -0.077 (-0.130 - -0.023)**/ -0.131 | -0.062 (-0.116 - -0.009)/ -0.109 | - 0.000 (-0.028 – 0.087)/ 0.000 | -0.001 (-0.089 – 0.087)/ -0.001 | 0.003 (-0.068 – 0.074) / 0.004 | -0.005 (-0.079 – 0.068)/ -0.007 |
| Autonomy and decision involvement | 0.172 (0.096 – 0.249)***/ 0.208 | 0.160 (0.083 – 0.238)***/ 0.196 | -0.013 (-0.135 – 0.109)/ -0.010 | 0.024 (-0.102 – 0.150)/ 0.018 | 0.038 (-0.064 – 0.140)/ 0.036 | 0.051 (-0.055 – 0.157)/ 0.048 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cultural** | | | | | | |
| Work-home interference | -0.123 (-0.257 – 0.011)/ -0.094 | -0.117 (-0.252 – 0.017)/ -0.092 | 0.485 (0.271 – 0.699)***/ 0.236 | 0.470 (0.251 – 0.690)***/ 0.229 | 0.526 (0.347 – 0.705)***/ 0.312 | 0.520 (0.336 – 0.704)***/ 0.310 |
| Experienced team atmosphere | 0.124 (0.026 – 0.221)*/ 0.140 | 0.109 (0.012 – 0.207)/ 0.126 | -0.194 (-0.349 - -0.039)*/ -0.141 | -0.184 (-0.343 - -0.025)/ -0.132 | -0.228 (-0.357 - -0.098)***/ -0.202 | -0.218 (-0.351 - -0.084)***/ -0.192 |
| Experienced psychological safety | 0.147 (0.027 – 0.266)*/ 0.143 | 0.145 (0.026 – 0.263)*/ 0.143 | -0.085 (-0.276 – 0.106)/ -0.053 | -0.081 (-0.274 – 0.112)/ -0.050 | -0.060 (-0.220 – 0.099)/ -0.045 | -0.062 (-0.224 – 0.100)/ -0.047 |
| Feedback | -0.013 (-0.097 – 0.072)/ -0.012 | -0.014 (-0.099 – 0.070)/ -0.014 | -0.015 (-0.150 – 0.120)/ -0.009 | -0.029 (-0.166 – 0.109)/ -0.018 | -0.041 (-0.153 – 0.072)/ -0.030 | -0.043 (-0.158 – 0.073)/ -0.032 |
| **Individual** | | | | | | |
| Physician-patient interactions | 0.368 (0.283 – 0.452)***/ 0.325 | 0.376 (0.293 – 0.460)***/ 0.342 | -0.304 (-0.439 - -0.169)***/ -0.171 | -0.309 (-0.445 - -0.173)***/ -0.176 | -0.312 (-0.424 - -0.199)***/ -0.214 | -0.317 (-0.431 - -0.203)***/ -0.220 |
| Person-job fit | 0.159 (0.086 – 0.231)***/ 0.188 | 0.159 (0.086 – 0.231)***/ 0.192 | -0.170 (-0.285 - -0.055)**/ -0.129 | -0.169 (-0.286 - -0.051)**/ -0.127 | -0.139 (-0.235 - -0.043)*/ -0.128 | -0.132 (-0.230 - -0.033)/ -0.121 |
| IIndividual resilience | 0.108 (0.029 – 0.188)**/ 0.116 | 0.125 (0.045 – 0.205)**/ 0.136 | -0.245 (-0.372 - -0.119)***/ -0.168 | -0.263 (-0.393 - -0.133)***/ -0.179 | -0.200 (-0.305 - -0.094)***/ -0.167 | -0.202 (-0.312 - -0.093)***/ -0.168 |
| Self-kindness | -0.013 (-0.087 – 0.061)/ -0.014 | -0.021 (-0.095 – 0.052)/ -0.024 | -0.155 (-0.273 - -0.038)/ -0.108 | -0.158 (-0.277 - -0.039)*/ -0.110 | -0.088 (-0.186 – 0.010)/ -0.074 | -0.084 (-0.185 – 0.016)/ -0.072 |

*N* = 371. [a]Adjusted for sex, years registered as a cardiologist and type of hospital (academic vs. nonacademic)

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

## DISCUSSION

### Main findings



This study showed that Dutch cardiologists score 3.85 out of 5 on professional fulfillment, 2.25 out of 5 on work exhaustion and 2.04 out of 5 interpersonal disengagement. Cardiologists with satisfying patient interactions, a good person-job fit and high levels of personal resilience reported higher levels of professional fulfillment and at the same time lower levels of work exhaustion and interpersonal disengagement. Autonomy and involvement in overall managerial decision-making was associated with professional fulfillment. Experienced workload, work-home interference and (negative) team atmosphere were related to burn-out symptoms.

### Explanation of findings

This is 1 of the first studies to examine cardiologists' work-related well-being looking beyond the traditional burnout related dimensions to also include the positive dimension of professional fulfillment. What stands out is the reported relatively high levels of professional fulfillment experienced by Dutch cardiologists, compared to those of physicians in general as presented by Trockel and colleagues. (15) This may point to the highly rewarding and meaningful nature of the specialty, as cardiologists often operate on the verge of life and death, and have an important role in guiding patients who suffer from life threatening illnesses. (9)

Indeed, by far the greatest predictor for cardiologists' professional fulfillment (see Table 4) was their interaction with patients. Although this may not be new (23), the importance of enabling cardiologists to spend sufficient meaningful time with patients

cannot be stressed enough. Satisfying physician-patient interactions result in feelings of happiness, connectedness and being able to contribute which increases both cardiologists' well-being and, ultimately, results in better clinical outcomes for patients. (17, 24, 25) For cardiologists and their healthcare institutions, for specialty societies such as the NVVC and ones alike in other European healthcare systems and for regulating bodies, this study provides valuable insight when facing the challenge of designing policies or undertaking actions to boost cardiologists' well-being. Initiatives neglecting professional fulfillment and focusing solely on extrinsic motivational factors, ie financial incentives, may not result in the same high levels of professional fulfillment and thus performance. Research has shown that in the long run extrinsic motivators may undermine professionals' intrinsic drives and so may even be detrimental to professionals and patient care quality. (17)

With regards to the work- and individual aspects affecting cardiologists' professional fulfillment, our findings show that 'autonomy and decision involvement' was the only *work-structure related* factor that affected cardiologists' feelings of fulfillment. We found that the cardiologists that had more opportunities to participate in decision-making processes and could self-determine on how and when to do specific tasks, reported higher levels of professional fulfillment. In contrast to previous research (26), our study did not find that a diminished sense of autonomy increases the risk of burnout. We have no clear explanation for this unexpected finding, which demands further investigations. We can only speculate that the baseline level of autonomy was sufficient enough to maintain health at work. Not surprising was the found positive relation between autonomy and professional fulfillment, which may be explained by the fact that higher levels of autonomy create the opportunity for physicians to dedicate their time to what they find to be the most meaningful aspects of their job. (18) Being able to partly

customize one's job according to individual preferences stimulates intrinsic motivation – an important element of professional fulfillment. (15, 27)

For Dutch cardiologists, work-home interference was the most important predictor for experiencing burnout symptoms (see Table 4). In general, physicians are found to struggle with work-home balance and it is often mentioned as a major source of distress and a driver for burnout. (28-30) Dyrbye et al., for example, reported on the general medical U.S. workforce that physicians who had recently experienced a work-home conflict were more likely to suffer from burnout symptoms compared to those who had not (47.1% vs. 26.6%). (28) The relation between work-home interference and burnout, however, is complex and may be affected by many other factors such as age, working hours per week, relationship status or gender. (31) For the latter, the literature reports inconsistent findings. (9, 14, 30, 32, 33) A recent study amongst female doctors in Australia and New-Zealand found that women in cardiology were less likely to agree that they led a balanced life compared to other female physicians. (34) In our study, work-home interference affected all cardiologists and put them at greater risk of experiencing burnout symptoms. This finding resonates with many other studies (30, 33, 35), all underpinning that being a doctor and 'being on all the time' is experienced by many as burdensome. Finding ways to maintain or restore a proper work-home balance amongst all cardiologists, thus, may be a meaningful inference of our study.

This study suggests that 3 included aspects, amongst them physician-patient interactions and personal resilience, may boost cardiologists' well-being and simultaneously prevent them from suffering from burnout symptoms. This is an interesting finding in itself, as it underpins that professional fulfillment is not the opposite of being burned-out; that is, professional fulfillment and being burnout are not the 2

extremes of 1 construct. Rather, fulfillment adds a dimension to the construct of work-related well-being. (15) In other words, a professionally fulfilled cardiologist may, at the same time, still be suffering from burnout symptoms. These aspects that both stimulate professional fulfillment and protect for burnout thus have a two-way impact on cardiologists' work-related well-being.

In a recent study, Scheepers et al. (2020) found that physicians who regularly experience patients' gratitude and perceive their patient contact as positive were less likely to get exhausted, despite common exposure to excessive bureaucracy. (24) It does make sense that it is less likely for doctors to feel callous towards colleagues or patients and become cynical, when they regularly experience positive patient-interactions, gratefulness and a sense of being able to contribute to a greater cause. Research on compassionate care has reported salutary effects on its practitioners; physicians who consistently practice with compassion turn out to be more resilient and less burned out. (36) In contrast to the idea that human connection in healthcare settings is or eventually will be emotionally taxing, this study adds to the rising evidence that connecting with patients may counteract burnout. (36) Additionally and in line with previous research, this study shows that resilience moderates the negative effects of distress and that resilient physicians thus have a greater ability to "bounce back" following adverse events. (19, 37-39) Enhancing cardiologists' resilience decreases their chances of burnout and creates space for them to enjoy the positive intrinsic rewards that arise from doing their work. Despite its positive impact, Panagioti et al. stress that the concept of resilience should not be misused to blame clinicians for not being strong enough to cope with pressure and to take away healthcare organizations' responsibility for fostering the well-being of their clinicians. (9)

All in all, this study suggests that there is room to further strengthen cardiologists' work-related well-being. While work-home interference and experienced workload were found to be important demanding aspects that jeopardize cardiologists' well-being, in line with recent research (18, 40), we found that promoting cardiologists' well-being can most effectively be achieved by investing in increasing (work-related) sources of energy. Indeed, some energizing resources were found to positively relate to physicians' experienced professional fulfillment *and* to protect them from work-exhaustion and interpersonal disengagement.



**Strengths and limitations**

This study was set up as the first Dutch nationwide survey among cardiologists, thereby including cardiologists from all types of institutions (both academic and non-academic), thus strengthening the validity and generalizability of our findings. However, a few limitations need to be taken into account. The response rate of this study was 34.6 %. Although a higher response rate is preferable, response rates of approximately 35% are considered high in studies on occupational well-being of physicians, especially those conducted during the COVID pandemic. (11, 22) For example, national survey studies performed by Shanafelt and colleagues, leading experts in the field of physician well-being, often report response rates below 30% (35, 39, 41). Also, it is reassuring to find our study's sample to be representative, since its demographics resemble those of the population of all Dutch cardiologists as reported in internal documents of the NVVC. Second, we cannot guarantee that our results have not been impacted by the COVID-19 pandemic. However, given the results of our additional control questions (Supplemental File I), we assess the overall findings are at the most slightly impacted. Research on the

impact of the pandemic on physician well-being internationally shows contradictory results (22, 42, 43). Finally, as always, due to the cross-sectional nature of this study, causality cannot be determined. However, we find our findings to be in line with previous longitudinal research showing that work- and individual aspects (either energy demanding or providing) predict occupational well-being. (44, 45)

**Implications for practice and research**

Based on this study, the most significant well-being promoting resources for Dutch cardiologists can be found in the individual realm and in building a work environment where well-being is not just given lip service but taken seriously by the department and organization. Clearly, changing the work culture is extremely challenging, requiring leadership, role models, and commitment from all staff. (46, 47) This may explain why most organizations choose to first address inhibiting work structures and inefficient practices (47), although these too are not always easily changed.

More specifically, considering this study's findings, we suggest a two-track approach for fostering Dutch cardiologists' well-being. First, organizational efforts and support could be aimed at promoting a healthy work-life balance amongst cardiologists; eg normalizing "striving to be home for dinner" and allowing them control over their work schedules. (30)

Second, cardiologists would further benefit from spending more dedicated time with their patients. This study is yet another 1 to underscore the negative impact of the limited time physicians have with their patients. Successfully addressing this structural issue will likely require system changes at a national level; cardiologists and organizations

should however continue to think of local answers. Research provides some possible answers; eg employing scribes (non-lincensed team members specifically trained to document physician-patient encounters) or pre-visit planning may help making patient visits more focused on the patient rather than administrative tasks. These efforts may contribute to more fulfilled cardiologists. (48)



**Conclusions**

Dutch cardiologists report relatively high levels of professional fulfillment and average levels of burnout symptoms compared to previous research. Although excessive workloads have been found to jeopardize cardiologists' work-related well-being, our study findings show that it is critical to invest in resources of energy. Promoting the well-being of cardiologists seems most effective by boosting, for example, their professional autonomy and ensuring satisfying physician-patient interactions. We suggest investing in creating a culture of wellness, in institutions and the medical profession, which fosters a healthy work-life balance and promotes personal resilience – ultimately benefiting the quality of patient care. This can only be a joint effort of leaders within the profession, role models in healthcare organizations, and commitment of every individual cardiologist.

` **REFERENCES**

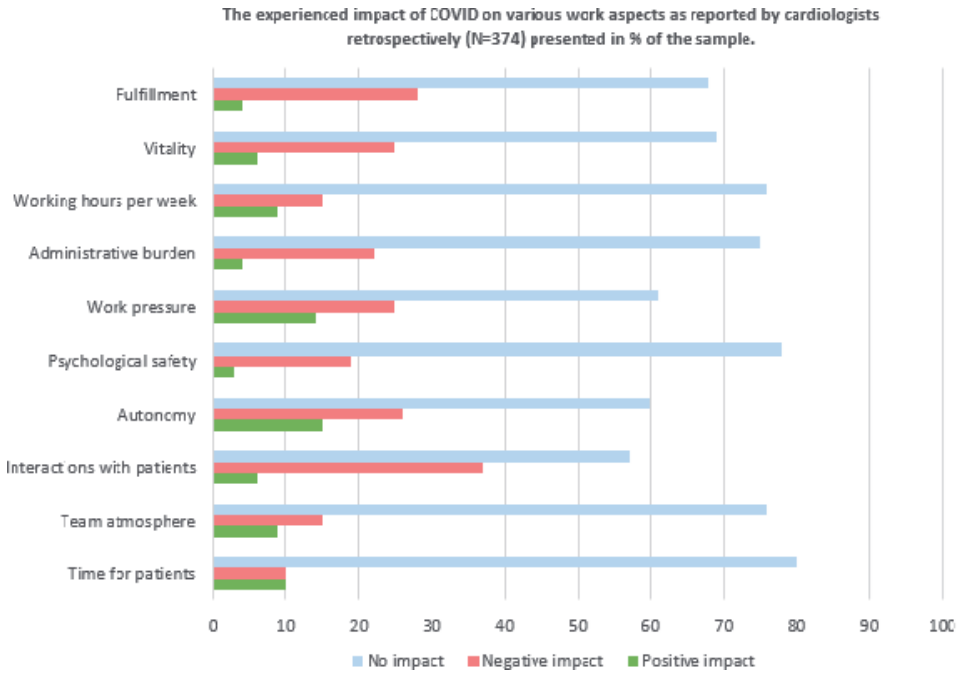

1. Scheurer D, McKean S, Miller J, Wetterneck T. US physician satisfaction: a systematic review. *J Hosp Med* 4:560-568, 2009.
2. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator *Lancet* 374:1714-1721, 2009.
3. Friedberg MW, Chen PG, Van Busum KR, et al. Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. *Rand Health Q* 3:1-10, 2014.
4. Firth-Cozens J, Greenhalgh J. Doctors' perceptions of the links between stress and lowered clinical care. *Social Sci Med* 44:1017-1022, 1997.
5. Phillips RL, Green LA. Does career dissatisfaction affect the ability of family physicians to deliver high-quality patient care. *Prim Care* 51:223-228, 2002.
6. Haas JS, Cook EF, Puopolo AL, Burstin HR, Cleary PD, Brennan TA. Is the professional satisfaction of general internists associated with patient satisfaction? *J Gen Intern Med* 15:122-128, 2000.
7. West CP, Huschka MM, Novotny PJ, et al. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. *Jama* 296:1071-1078, 2006.
8. Williams ES, Konrad TR, Scheckler WE, et al. Understanding physicians' intentions to withdraw from practice: the role of job satisfaction, job stress, mental and physical health. *Health Care Manage Rev* 35:105-115, 2010.
9. Panagioti M, Geraghty K, Johnson J. How to prevent burnout in cardiologists? A review of the current evidence, gaps, and future directions. *Trends Cardiovasc Med* 28:1-7, 2018.
10. Dewa CS, Loong D, Bonato S, Thanh NX, Jacobs P. How does burnout affect physician productivity? A systematic literature review. *BMC Healt Serv Res* 14:1-10, 2014.
11. Mehta Laxmi S, Lewis Sandra J, Duvernoy Claire S, et al. Burnout and Career Satisfaction Among U.S. Cardiologists. *J Am Coll Cardiol* 73:3345-3348, 2019.
12. Joshi SS, Stankovic I, Demirkiran A, et al. EACVI survey on burnout amongst cardiac imaging specialists during the 2019 coronavirus disease pandemic. *Eur Heart J Cardiovasc Imaging* 23:441-446, 2022.
13. Ahmed A, Suliman A, Mohemmed T, Elsayed A, Abdelbagi A, Osman S. Burnout amongst cardiology fellows and internal medicine residents in tertiary cardiac centres. *Eur Heart J Acute Cardiovasc Care* 11:zuac041. 003, 2022.
14. Pechkam C. Medscape Cardiologist Lifestyle Report: race and ethnicity, bias and burnout. 2017.
15. Trockel M, Bohman B, Lesure E, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. *Acad Psychiatry* 42:11-24, 2018.
16. Brown S, Gunderman RB. Viewpoint:: Enhancing the Professional Fulfillment of Physicians. *Acad Med* 81:577-582, 2006.
17. Schrijver I, Brady KJ, Trockel M. An exploration of key issues and potential solutions that impact physician wellbeing and professional fulfillment at an academic center. *PeerJ* 4:e1783, 2016.

18. Olson K, Marchalik D, Farley H, et al. Organizational strategies to reduce physician burnout and improve professional fulfillment. *Curr Probl Pediatr Adolesc Health Care* 49:100664, 2019.
19. Stewart MT, Reed S, Reese J, Galligan MM, Mahan JD. Conceptual models for understanding physician burnout, professional fulfillment, and well-being. *Curr Probl Pediatr Adolesc Health Care* 49:100658, 2019.
20. Miles J, Shevlin M. Applying regression and correlation: A guide for students and researchers. London: Sage; 2001.
21. Allison PD. Multiple regression: A primer. Thousans Oaks, CA: Pine Forge Press; 1999.
22. O'Brien JM, Goncin U, Ngo R, Hedlin P, Chakravarti A. Professional fulfillment, burnout, and wellness of anesthesiologists during the COVID-19 pandemic. *Can J Anaesth* 68:734-736, 2001.
23. Lu DW, Lee J, Alvarez A, et al. Drivers of professional fulfillment and burnout among emergency medicine faculty: A national wellness survey by the Society for Academic Emergency Medicine. *Acad Emerg Med* 29: 987-998, 2022.
24. Scheepers R, Silkens M, van den Berg J, Lombarts K. Associations between job demands, job resources and patient-related burnout among physicians: results from a multicentre observational study. *BMJ open* 10:e038466, 2020.
25. Shanafelt TD. Enhancing meaning in work: a prescription for preventing physician burnout and promoting patient-centered care. *Jama* 302:1338-1340, 2009.
26. Freeborn DK. Satisfaction, commitment, and psychological well-being among HMO physicians. *West J Med* 174:13-18, 2001.
27. Shanafelt T, Swensen S. Leadership and physician burnout: using the annual review to reduce burnout and promote engagement. *Am J Med* 32:563-565, 2017.
28. Dyrbye LN, Sotile W, Boone S, et al. A survey of U.S. physicians and their partners regarding the impact of work-home conflict. *J Gen Intern Med* 29:155-161, 2014.
29. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. *J Intern Med* 283:516-529, 2018.
30. Rialon KL, Mueller C, Ottosen M, et al. Drivers of distress and well-being amongst pediatric surgeons. *J Pediatr Surg* 56:841-848, 2021.
31. Marshall AL, Dyrbye LN, Shanafelt TD, et al. Disparities in Burnout and Satisfaction With Work-Life Integration in U.S. Physicians by Gender and Practice Setting. *Acad Med* 95:1435-1443, 2020.
32. Tawfik DS, Shanafelt TD, Dyrbye LN, et al. Personal and Professional Factors Associated With Work-Life Integration Among US Physicians. *JAMA Netw Open* 4:e2111575, 2021.
33. Keeton K, Fenner DE, Johnson TR, Hayward RA. Predictors of physician career satisfaction, work–life balance, and burnout. *Obstet Gyneacol* 109:949-955, 2007.
34. Castles AV, Burgess S, Robledo K, et al. Work-life balance: a comparison of women in cardiology and other specialties. *Open Heart* 8:e001678, 2021.
35. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin Proc* 90:1600-1613, 2015.
36. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: Hypothesis and experimental approach. *Med Hypotheses* 107:92-97, 2017.
37. Wagnild GM, Young HM. Development and psychometric evaluation of the Resilience Scale. *J Nurs Manag* 1: 987-998, 1993.

38. Taku K. Relationships among perceived psychological growth, resilience and burnout in physicians. *Pers Individ Differ* 59:120-123, 2014.
39. West CP, Dyrbye LN, Sinsky C, et al. Resilience and Burnout Among Physicians and the General US Working Population. *JAMA Netw Open* 3:e209385-e209385, 2020.
40. Crowe RP, Fernandez AR, Pepe PE, et al. The association of job demands and resources with burnout among emergency medical services professionals. *JACEP Open* 1:6-16, 2020.
41. Shanafelt TD, Boone S, Tan L, et al. Burnout and Satisfaction With Work-Life Balance Among US Physicians Relative to the General US Population. *Arch Intern Med* 172:1377-1385, 2012.
42. Baro Vila RC, Burgos LM, Sigal A, Costabel JP, Alves de Lima A. Burnout Syndrome in Cardiology Residents. Impact of the COVID-19 Pandemic on Burnout Syndrome in Cardiology Residents. *Curr Probl Cardiol* 47:100873, 2022.
43. Amanullah S, Ramesh Shankar R. The impact of COVID-19 on physician burnout globally: a review. *Healthcare* 8:421, 2020.
44. Wang Y, Huang J, You X. Personal resources influence job demands, resources, and burnout: a one-year, three-wave longitudinal study. *Soc Behav Pers* 44:247-258, 2016.
45. Hakanen JJ, Schaufeli WB, Ahola K. The Job Demands-Resources model: A three-year cross-lagged study of burnout, depression, commitment, and work engagement. *Work Stress* 22:224-241, 2008
46. Edmondson EK, Kumar AA, Smith SM. Creating a culture of wellness in residency. *Acad Med* 93:966-968, 2018.
47. Shanafelt TD, Schein E, Minor LB, Trockel M, Schein P, Kirch D. Healing the Professional Culture of Medicine. *Mayo Clin Proc* 94:1556-1566, 2019.
48. Tawfik DS, Profit J, Webber S, Shanafelt TD. Organizational factors affecting physician well-being. *Current Treat Options Pediatr* 5:11-25, 2019.
49. Schaufeli WB. Applying the job demands-resources model. *Organ Dyn* 2:120-132, 2017.
50. Marais C, Mostert K, Geurts S, Taris T. The Psychometric Properties of a Translated Version of the Survey Work-Home Interaction — Nijmegen (SWING) Instrument. *S Afr J Psychol* 2009;39:202-219.
51. Smits M, Christiaans-Dingelhoff I, Wagner C, van der Wal G, Groenewegen PP. The psychometric properties of the'Hospital Survey on Patient Safety Culture'in Dutch hospitals. *BMC Health Serv Res* 8:1-9, 2008.
52. Edmondson A. Psychological safety and learning behavior in work teams. *Adm Sci Q* 44:350-383, 1999.
53. Lombarts MJ, Arah OA, Busch OR, Heineman MJ. [Using the SETQ system to evaluate and improve teaching qualities of clinical teachers]. *Ned Tijdschr Geneeskd* 154:A1222, 2010.
54. Williams ES, Konrad TR, Linzer M, et al. Refining the Measurement of Physician Job Satisfaction: Results from the Physician Worklife Survey. *Med Care* 37:1140-1154, 1997.
55. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med* 15:194-200, 2008.
56. Neff KD. The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness* 7:264-274, 2016.

57. Van den Broeck A, Vansteenkiste M, De Witte H, Soenens B, Lens W. Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the Work-related Basic Need Satisfaction scale. *J Occup Organ Psychol* 83:981-1002, 2010.

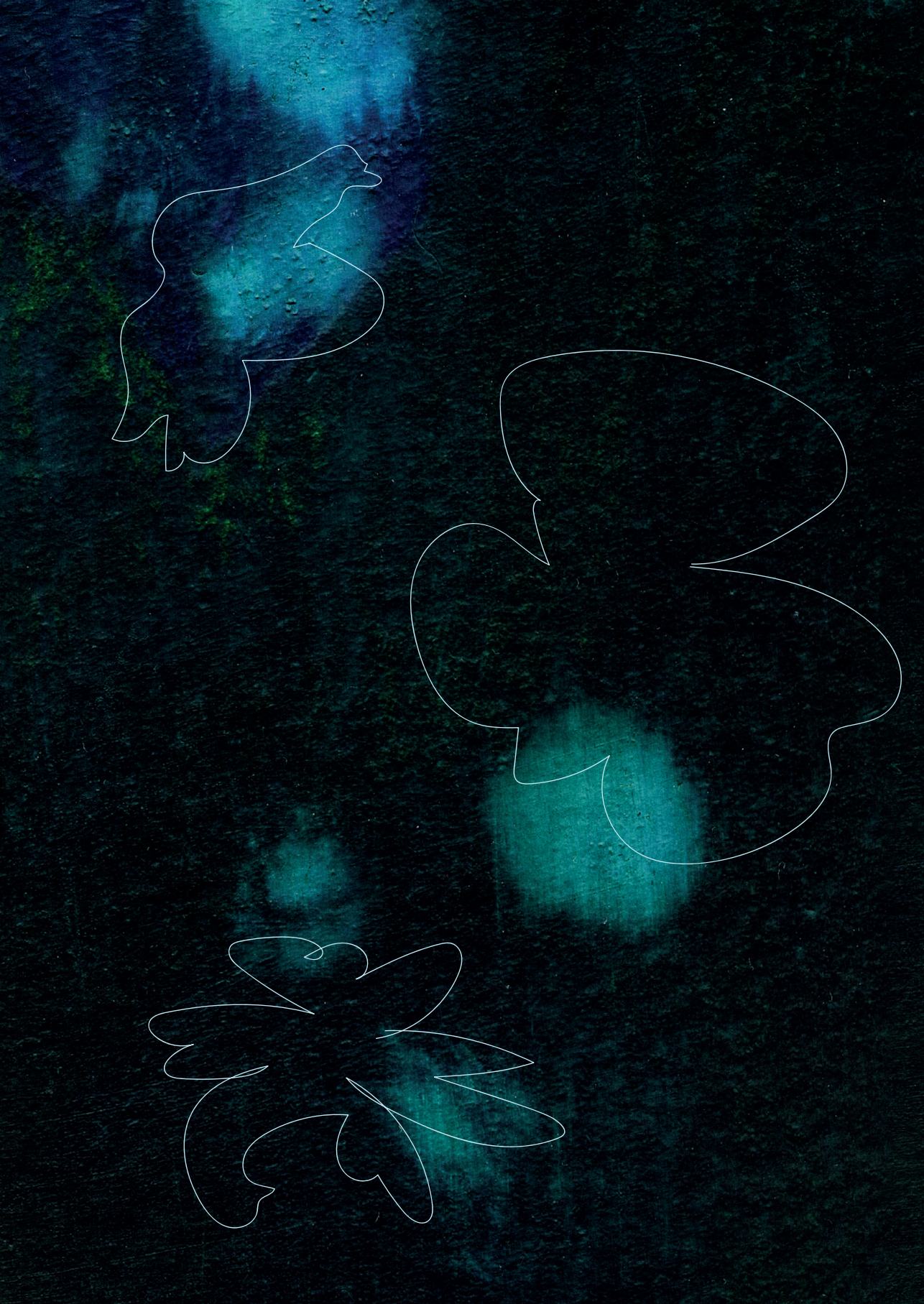
## APPENDIX I


The experienced impact of COVID on various work aspects as reported by cardiologists retrospectively (N=374) presented in % of the sample.
Fulfillment
Vitality
Working hours per week
Administrative burden
Work pressure
Psychological safety
Autonomy
Interactions with patients
Team atmosphere
Time for patients
0
10
20
30
40
50
60
70
80
90
100
No impact
Negative impact
Positive impact

## APPENDIX II

| Definitions and origin of most important constructs in alphabetic order. | | |
|---|---|---|
| **Construct** | **Definition** | **Reference** |
| **Autonomy and decision involvement** | Experiencing a sense of volition and psychological freedom with regards to the work and being able to participate in decision making processes. | *Van den Broeck et al., 2010* |
| **Depersonalisation** | The development of callous or even dehumanized perception of others. | *Trockel et al., 2018*<br>*Maslach & Jackson, 1981* |
| **Individual resilience** | The ability to bounce back or recover from stress. | *Smith et al., 2008* |
| **Person-job fit** | Feeling well and fairly compensated" and feeling that the work matches one's competencies and what gives the individual energy. | *Williams et al., 1999* |
| **Physician-patient interactions** | The level of satisfaction with regards to an individual's relationship with patients. | *Williams et al.,1999* |
| **Professional fulfillment** | The degree of intrinsic positive reward the individual derives from his or her work including happiness, meaningfulness, contribution, self-worth, satisfaction and feeling in control when dealing with difficult problems at work. | *Trockel et al., 2018* |
| **Psychological safety** | An individual belief that the team is safe for interpersonal risk taking. | *Edmondson, 1999* |
| **Self-kindness** | Being gentle, supportive and understanding toward oneself, rather than harshly judging oneself for personal shortcomings. | *Neff, 2016* |
| **Work exhaustion** | The state where as emotional resources are depleted, workers feel they are no longer able to give themselves at a psychological level. | *Trockel et al., 2018*<br>*Maslach & Jackson, 1981* |
| **Work-home interference** | When negative load reactions built up at work hamper functioning at home. | *Marais et al., 2009* |

*N.B. Where the referenced article did not provide a strict definition of the construct, the research team created a definition based on the contents of the referenced article.*



# Chapter 3

## The relationship between physicians' self-kindness and professional fulfillment and the mediating role of personal resilience and work-home interference: A cross-sectional study

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**ABSTRACT**

**Background**

Professional fulfillment is crucial for physicians' well-being and optimal patient care. Highly demanding work environments, perfectionism and self-critical attitudes jeopardize physicians' professional fulfillment.

**Objective**

To explore to what extent a kinder attitude towards the self, i.e. self-kindness, was associated with physicians' professional fulfillment and whether this relationship was mediated by personal resilience and work-home interference.

**Methods**

In 2020, cardiologists (*n*=374) in the Netherlands participated in a web-based survey. Self-kindness was measured by the self-kindness subscale of the Self-Compassion Scale, personal resilience by the Brief Resilience Scale, work-home interference by the negative Work-Home Interference subscale of the Survey Work-Home Interaction – Nijmegen, and professional fulfillment by the corresponding subscale of the Professional Fulfillment Index. Using Hayes' SPSS macro PROCESS v3.5, the authors tested the parallel mediation model.

**Results**

Self-kindness was not directly associated with professional fulfillment (direct effect = .042, *p* = .36, 95% CI: -0.048, 0.132). Self-kindness was indirectly related to professional fulfillment through individual resilience (indirect effect = .049, 95% CI: .020, 0.086) and work-home interference (indirect effect = .057, 95% CI: .023, 096).



**Conclusions**

This study suggests that improving physicians' self-kindness may enhance professional fulfillment through personal resilience and work-home interference. Our findings may stimulate and remind physicians to be kind towards themselves as it may benefit them and their patients.

## INTRODUCTION

Professionally fulfilled physicians derive intrinsic positive rewards from their work, such as professional satisfaction, self-efficacy and happiness. As they work with joy and experience meaningfulness, they are less prone to burnout and leaving the profession than unfulfilled physicians. Patients of professionally fulfilled physicians report higher levels of satisfaction, whereas low professional fulfillment is associated with an increased chance on medical errors.(1-5) Unfortunately, physicians' professional fulfillment is under pressure due to demanding work environments and unhealthy norms in the medical professional culture.(1, 6, 7) While improving physicians' work environments has been high on the agenda of healthcare organizations and professional bodies, work pressures remain high.(8) Unhealthy norms like working late, deprioritizing self-care and shaming approaches after (near-)mistakes neither are supportive for physicians' professional fulfillment.(6, 7, 9) On top of that, in striving to deliver high-quality patient care physicians often develop perfectionistic mindsets, a self-critical attitude and low self-tolerance.(6, 7, 9, 10) Both perfectionism and self-criticism have been associated with burnout in physicians.(11-13) A kinder attitude towards the self, i.e. self-kindness, has been found to buffer against stress and burnout.(14-18)

Self-kindness refers to being gentle, supportive and understanding towards the self, instead of being harsh and self-critical.(19) Research has shown that it can be trained in healthcare professionals.(9, 18) While ample evidence shows that self-kindness is associated with reduced burnout in physicians(14-17), coming from a positive psychology perspective(20), we argue that physician well-being encompasses more than the absence of burnout. It is also worthwhile to explore whether kinder self-attitudes are to increase positive well-being indicators such as professional fulfillment, given its

presumed benefits for physicians and their patients. However, the relationship between self-kindness and professional fulfillment thus far remains largely underexplored. Previous research has shown how physicians' self-critical and perfectionistic attitudes may harm their professional fulfillment (6, 7), but research on how opposite self-attitudes, such as self-kindness, may actually benefit it, is scarce. Empirical research on self-kindness as a potential predictor for professional fulfillment will add to the body of literature on physician well-being from a more positive angle.



Indications for a direct relationship between self-kindness and professional fulfillment are studies showing that self-kindness stimulates intrinsic motivation, goal-setting behaviors and feelings of happiness and connectedness(21-23), all core characteristics of professional fulfillment.(24) For indirect relationships, the current literature suggests two worthwhile constructs to explore. First, researchers have found positive relationships between self-kindness and personal resilience – the ability to bounce back.(25, 26) Second, self-kindness positively affects self-care and behavior that stimulates well-being.(27-30) Self-kindness seems beneficial for physicians as they often struggle with managing their work-home balance.(31) While both being crucial for maintaining and enhancing the quality of patient care(5, 32, 33), higher levels of personal resilience and fewer work-home interferences have also been found to positively associate with work engagement and job satisfaction amongst physicians.(34-38) Professional fulfillment is an indicator of occupational well-being, like work engagement and job satisfaction, but differs from these constructs by also including a sense of meaningfulness and personal growth.(24) Based on the evidence aforementioned, we hypothesize that i) self-kindness is directly related to professional fulfillment, as well as ii) indirectly, through personal resilience and work-home interference

This study focuses on cardiologists, as the profession of cardiology is known for its competitive culture stimulating its members to appear impervious to pressure- raising worries about their occupational well-being.(39, 40) This study aims to contribute to the literature and practice by addressing the following research questions: To what extent 1) is cardiologists' self-kindness related to their professional fulfillment? and 2) is this relationship mediated by personal resilience and work-home interference? The outcomes of this study provide more insight into cardiologists' attitudes towards the self and how they relate to their occupational well-being. Taking into account the aforementioned detrimental aspects of medicine's professional culture, a better understanding of the role and impact of self-kind attitudes may offer a first step in finding ways to redefine and improve practice. (6, 7). The results of this study may inform new approaches to enhance physicians' professional fulfillment and, subsequently, patient care. In the next section we discuss our research methods, followed by the presentation of our results, a discussion of our findings and a conclusion.

## METHODS

### Study design, population and setting

This cross-sectional survey study was conducted in 2020 amongst all registered cardiologists who were a member of the Netherlands Society of Cardiology (NVVC) and were working in the Netherlands. In the Netherlands in 2021 approximately 48% of the cardiologists was self-employed and 52% was employed by hospitals- they deliver their medical services within general hospitals, top clinical hospitals, university hospitals and independent treatment centers (unpublished information of the NVVC). In 2021, the average age of cardiologists in the Netherlands was 48 years and approximately 72% of

all cardiologists were male. As a profession, cardiology is known to be demanding and strenuous.(39, 41)

**Measures**

We used validated measures for all included variables and, when needed, four researchers independently translated English measurements to Dutch using the forward-backward translation method.(42) We measured self-kindness using the 5-item self-kindness domain of the self-compassion scale (SCS) developed by Kristin Neff.(19) This domain measures "how often people respond to feelings of inadequacy or suffering" with self-kindness versus with self-judgment.(19) Examples of self-kindness items are "I try to be loving toward myself when I'm feeling emotional pain" and "I'm tolerant of my own flaws and inadequacies." Respondents provided their answers on a 5-point Likert scale from 'almost never' to 'almost always'.(19) The reliability coefficient using Cronbach's alpha for this scale was 0.82 in our sample.

We measured personal resilience using the 6-item Brief Resilience Scale (BRS) developed by Smith and colleagues.(43) Respondents provided their answers on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree.' Three items are positively worded, i.e., "I tend to bounce back quickly after hard times", while the other 3 items are negatively worded, as in "It is hard for me to snap back when something bad happens".(43) The reliability coefficient using Cronbach's alpha for this scale was 0.86 in our sample.

We assessed work-home interference using the 9-item sub-scale negative Work-Home Interference (WHI) from the Survey Work-Home Interaction – Nijmegen (SWING),

which measures the level at which someone's work negatively influences someone's functioning at home.(44) Items are scored on a 4-point Likert scale 'how often' scale ranging from '(practically) never' to '(practically) always.' Examples of negative WHI items are "How often do you not fully enjoy the company of your spouse/ family/ friends because you worry about your work?" and "How often do your work obligations make it difficult for you to feel relaxed at home?"(44) The reliability coefficient using Cronbach's alpha for this scale was 0.88 in our sample.

We measured professional fulfillment using the 6-item professional fulfillment scale from the Professional Fulfillment Index (PFI) developed by Trockel et al.(24) The scale measures the intrinsic positive rewards an individual receives from doing her or his work, including items about meaningfulness, contribution, happiness, satisfaction, self-worth and feeling in control when dealing with problems. Items are scored on a 5-point Likert scale with options ranging from 'totally disagree' to 'totally agree'.(24) Usually, the PFI measures professional fulfilment on a scale from 0 to 4. In order to guarantee consistency between the scales of the four main variables we measured professional fulfillment on a scale from 1 to 5, as used for the other scales. Example items of the professional fulfillment scale are: "My work is satisfying to me" and "I'm contributing professionally (e.g. patient care, teaching, research and leadership) in ways that I value most."(24) The reliability coefficient using Cronbach's alpha for this scale was 0.88 in our sample.

**Data collection**

This study was part of a larger data collection about the occupational well-being of Dutch cardiologists, commissioned by the Netherlands Society of Cardiology (NVVC). On

September 28, 2020, on behalf of the NVVC, the researcher (RB) invited all cardiologists practicing in the Netherlands and registered as an NVVC member, individually per email to participate in an online questionnaire, using Castor EDC. Participation was voluntary. Digital informed consent was obtained and participants' anonymity and confidentiality were safeguarded. Apart from occupational well-being related items, the questionnaire also included questions on respondents' demographics, i.e. sex (male/ female), age (years), years of experience as a cardiologist (year of first registration) and type of institution where the medical specialist was working (general hospital, top clinical hospital, university hospital, independent sector treatment center). These four demographics are able to provide a basic description of our sample and were considered most relevant in explaining physicians' occupational wellbeing by the researchers. Additionally, the NVVC deemed them potentially relevant for defining new, tailored wellbeing policies or interventions. The survey took place from September 28 till December 6, 2020; up till four reminders were sent during the survey period. We have included an appendix with the survey items relevant for the current study as S1 Table.



**Statistical analyses**

We included cardiologists who reported scores on (the separate items of) all main variables: (1) self-kindness, (2) personal resilience, (3) work-home interference and (4) professional fulfillment. Data were screened for extreme or unrealistic scores using the SPSS functions 'Sort ascending' and 'Sort descending'. No extreme or unrealistic scores were found in the data, leaving 374 cases for analysis.We rightly expected that our data collection would result in a sample that exceeds the general rule of thumb for minimum sample sizes in regression analyses (of which our parallel mediation model consists).(45,

46). )Therefore, we would have sufficient power to detect significant associations between the variables under study and we did not perform an a priori power analysis. With the cleaned data, scale scores for the variables were computed by averaging the individual items. Next, we used descriptive statistics to describe our sample characteristics and main variables.

To answer our research question "to what extent is physicians' self-kindness related to their professional fulfillment, and is this relationship mediated by personal resilience and work-home interference?", we performed a parallel mediation analysis with Hayes' SPSS macro PROCESS v3.5.(47) Hayes' macro for SPSS is a widely used tool to test parallel mediation models.(48) The procedure makes use of bootstrapping technique to determine the indirect effects. Compared to the Sobel test, which is an alternative way for determining the effects of mediating variables, bootstrapping requires fewer assumptions such as no need for normality in the distributions of the variables, provides a higher study power and lowers the risk of falsely rejecting the null hypothesis.(48)

We checked the statistical assumptions for parallel mediation of linearity, homoscedasticity and normality of estimation error by plotting the standardized residuals of all separate regressions building the parallel mediation model.(47) We found no worrying violations of the statistical assumptions. Additionally, we used Pearson's Correlations for calculating the associations among the main variables to check for multicollinearity. We then tested our parallel mediation model with self-kindness as the independent variable, personal resilience and work-home interference as mediators and professional fulfillment as the dependent variable. Preliminary univariate analyses (T-tests and ANOVA's) found no statistically significant relationship of any of the demographic variables with professional fulfillment. In line with other well-being

research(49-51), however, sex and years of registration were included as covariates. Because of the multicollinearity of age and years of registration ($r = -.824$, $p < 0.001$)(52), we opted to use the latter in the analysis as it was considered more clinically relevant; the year in which an individual first registered as a medical specialist better reflects their experience as a practicing physician than their age does. We generated a confidence interval (95% CI) from 10000 resamples to examine the significance of our indirect effects. The number of 10000 resamples is recommended by Hayes.(47) All analyses were performed using the SPSS Statistics (version 26; IBM, Armonk, New York).



**Ethical approval**

The institutional ethical review board of the Amsterdam UMC (METC) of the University of Amsterdam provided a waiver declaring the Medical Research Involving Human Subjects Act (WMO) did not apply to the current study (reference number W20_324 # 20.323). Written informed consent was obtained in the online survey. Participants were only allowed to continue the survey when they entered 'Yes' for "I agree to participate in this study". Information about the research was sent to the participants via email previously and again provided at the beginning of the survey.

**RESULTS**

Table 1 reports the demographic characteristics of the respondents in this study. In total, 374 (response rate of 34.6%) Dutch cardiologists completed the questionnaire. Most respondents were male (*n* = 273, 73.0%), and the most frequently rated age category and hospital type were 36-45 years old (*n* = 145, 38.8%) and general hospital (*n* = 154,

42.2%). The results are not too deviant from the average age of cardiologists in the Netherlands (almost 70% of our sample was between 36 and 55 years old) and the percentage of male cardiologists (72.0%); for type of hospital and years of experience no population numbers were available. Eight cases were excluded due to incomplete scores on the main variables.

**Table 1. Sample characteristics of 374 registered cardiologists in the Netherlands in 2021**

| **Demographic characteristics** | **N (374)** | **Frequency (%)** |
|---|---|---|
| **Sex** | | |
| Male | 273 | 73.0 |
| Female | 101 | 27.0 |
| **Age (years)** | | |
| < 36 | 15 | 4.0 |
| 36-45 | 145 | 38.8 |
| 46-55 | 112 | 29.9 |
| 56-65 | 95 | 25.4 |
| > 65 | 7 | 1.9 |
| **First registration (year)** | | |
| 1981-1990 | 19 | 5.1 |
| 1991-2000 | 64 | 17.1 |
| 2001-2010 | 139 | 37.2 |
| 2011-2021 | 152 | 62.8 |
| **Type of institute** | | |
| General hospital | 154 | 41.2 |
| Tertiary referral hospital | 129 | 34.5 |
| University hospital | 62 | 16.6 |
| Independent sector treatment center | 20 | 5.5 |
| Missings | 9 | 2.4 |

Table 2 reports the mean scores and standard deviations of the four main variables and the cross-variables' associations. On a 5-point Likert scale respondents' mean scores were 2.76 (SD = 0.7) for self-kindness, 3.85 (SD = 0.6) for professional fulfillment and 3.46 (SD = 0.5) for personal resilience. For work-home interference, respondents reported an average mean score of 2.23 (SD = 0.5) on a 4-point Likert scale.



**Table 2. Means, Standard Deviations and Pearson Correlations for Self-kindness, Professional fulfillment, Personal resilience and Work-home interference**

| Variables (scale) | Mean | SD | 1 | 2 | 3 |
|---|---|---|---|---|---|
| **1. Self-kindness (1-5)** | 2.76 | 0.68 | | | |
| **2. Professional fulfilment (1-5)** | 3.85 | 0.62 | 0.17** | | |
| **3. Personal resilience (1-5)** | 3.46 | 0.67 | 0.24** | 0.32** | |
| **4. Work-home interference (1-4)** | 2.23 | 0.51 | -0.26** | -0.35** | -0.37** |

** ($p < 0.01$), $n = 374$.

Fig 1 shows the unstandardized regression coefficients of the parallel mediation model. The results show a significant indirect effect of self-kindness on professional fulfillment through both personal resilience (indirect effect (a1b1) = .049, 95% CI: .020, .086) and work-home interference (indirect effect (a2b2) = .057, 95% CI: .023, .096). The combined indirect effect of personal resilience and work-home interference was also significant (indirect effect (total) = .106, 95% CI .061, .156). No significant direct effect of self-kindness on professional fulfillment was found (direct effect (c') = .042, $p$ = .36, 95% CI: -0.048, 0.132). A negligible but significant positive effect was found for first registration year on work-home interference ($b$ = .008, $p$ = .007, 95% CI: 0.002 – 0.014).

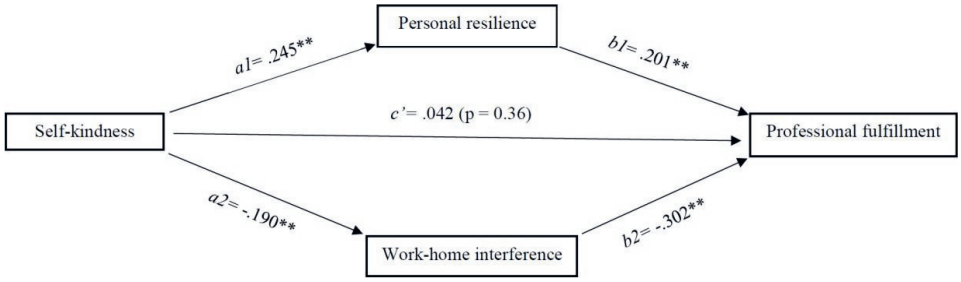



*Figure 1. Conceptual model. The model depicts the relationship between self-kindness and professional fulfillment, mediated by personal resilience and work-home interference, found amongst cardiologists in the Netherlands (n = 374) in 2020. The model was adjusted for sex and years of registration. **(p < 0.01).*

## DISCUSSION

### Main findings

This study explored the relationship between self-kindness and professional fulfillment amongst cardiologists and whether this relationship was mediated by personal resilience and work-home interference. In contrast to our first hypothesis, the results did not show a direct relationship between self-kindness and professional fulfillment. However, as hypothesized, this study showed that cardiologists who were more self-kind reported higher levels of personal resilience and less work-home interference, which in turn benefited their professional fulfillment.

**Explanation of findings**

The average professional fulfillment score of Dutch cardiologists (M = 3.85) is relatively high, compared to those of physicians in general which (converted to our measurement scale) have been reported between 3.25 and 3.50 (24, 53). One explanation for this finding may lie in the highly rewarding and meaningful nature of the specialty – cardiologists are frequently present at important moments in patients' lives which may be a stimulator for their feelings of intrinsic rewards and motivation.(1, 39, 54) Factors that have been found to positively affect the professional fulfillment of Dutch cardiologists are indeed satisfying physician-patient interactions, but also autonomy, personal resilience, satisfaction with compensation levels and the degree to which the job matches an individual's energy resources.(54) This study adds to that by showing how self-kindness indirectly affects cardiologists' professional fulfillment. Previous research has shown that patients of professionally fulfilled physicians are more satisfied(1) and that self-kindness has been found to be a prerequisite for compassionate care (18, 55). Therefore, enhancing cardiologists' self-kindness may benefit patients in multiple ways.

Dutch cardiologists reported an average self-kindness score of 2.76 on a 5-point Likert scale. While there is little comparable evidence on physicians' self-kindness specifically, some studies do report physicians' self-compassion scores, which include the subscales of self-kindness, mindfulness and common humanity.(14, 56) Physicians in Canada and New Zealand report mean self-compassion scores of 3.4 and 3.2. According to Neff, leading expert on self-compassion, people scoring between 2.5 and 3.5 on the self-compassion scale can be considered moderately self-compassionate.(57) Generally, individuals score lowest on the self-kindness subscale of the self-compassion scale.(58) Dutch cardiologists' can be considered moderately self-compassionate, assuming that the

scores on the other subscales are slightly higher than 2.74. Still, there is substantial room for improvement.

According to Shanafelt et al.(7), medicine's professional culture lacks self-compassion and creates perfectionistic and self-critical individuals who normalize deferring self-care and personal relationships. Researchers argue that physicians report lower levels of self-compassion than other healthcare professionals, e.g. nurses, due to the way self-compassion is seen and valued within their profession.(14) As the profession of cardiology is known to be competitive, its members often develop perfectionist mindsets(39, 40) and frequently face critical or confronting situations(39), the found moderate score on self-kindness amongst Dutch cardiologists indicates that they, and their patients, could indeed benefit from being more tolerant towards their own flaws and imperfections.

In contrast to our literature-based expectations, we did not find a direct relationship between cardiologists' self-kindness and professional fulfillment.(21-23) We can think of one theoretical and one methodological potential explanation for the absence of a direct relationship. From a theoretical viewpoint, we regarded self-kindness as the opposite of self-criticism, which is known to potentially harm physicians' professional fulfillment.(11-13) Consequently, we inferred that self-kindness would benefit professional fulfillment. The findings do not confirm this assumption and might imply that self-kindness is not the opposite of self-criticism, or at least does not have the opposite effect on physicians' professional fulfillment. A plausible methodological explanation is that self-kindness relates to specific aspects of the multifactorial professional fulfillment construct only. Being self-kind might not provide meaning in work – a distinctive element of professional fulfillment.(24) Additional analysis of our data seems to support this idea,

as self-kindness showed small correlations with all professional fulfillment items except for 'My work is meaningful to me.' Others have found that self-kindness may positively affect certain aspects of professional fulfillment, e.g. feelings of happiness(21-23), and that it may serve as a buffer and burnout(14-16)- the other dimension measured by Trockel et al.'s Professional Fulfillment Index (PFI).(24)



In line with our expectations, this study furthermore shows that self-kindness may indirectly enhance professional fulfillment through personal resilience and work-home interference. Self-kindness may benefit physicians' resilience when they are facing problems or when they are guiding ill patients, implying that it takes less time for them to recover from adverse experiences or confronting situations. Resilient physicians may find more time and space to enjoy positive feelings and opportunities at work, important indicators of professional fulfillment.(24) Research on physician resilience often stresses the influence of genetics, personality traits and an individual's (professional) environment on one's resilience(59, 60) – at times neglecting the possibility that trainable skills or attitudes may also boost individuals' resilience. Our results add to the body of literature(61-63) which demonstrates that trainable skills, such as self-kindness, may also enhance physician resilience. The finding that work-home interference mediates the relationship between self-kindness and professional fulfillment suggests that self-kind physicians improve their professional fulfillment by better managing their work-home balance. Previous research already showed that fewer work-home interferences positively associate with job satisfaction.(36) Our study supports the body of knowledge showing that self-kindness is associated with self-care skills(27-30), as is seems that better self-care skills could indeed result in more effectively reducing work's negative impact on physicians' personal spheres.

**Strengths and limitations**

The strength of this study is that it was set up as a national survey on behalf of the Netherlands Society of Cardiology, thereby inviting all cardiologists registered as a member of the professional body. However, when interpreting the results of this study, two limitations should be considered. First, due to its cross-sectional nature we cannot determine causality. Second, this study may be biased by its relatively low response rate of 34.6%. Nevertheless, response rates of approximately 35% are not uncommon for research into well-being and professional fulfillment amongst medical specialists, especially not during the COVID-pandemic.(64, 65) Further, we do feel reassured by the fact that this study's sample demographic characteristics resemble those of the population of all Dutch cardiologist as reported in unpublished documents of the NVVC.

**Implications for practice and research**

Research has shown that self-kindness is a trainable skill, for example, through regular self-kindness exercises. Often self-kindness is embedded as one of the three components of self-compassion, next to common humanity and mindfulness, in self-compassion training programs like Neff et al.'s Mindful Self-Compassion Program.(9, 66) The effectiveness of such programs for physicians' occupational well-being has been demonstrated.(15, 67) This study points to aspects that may be enhanced by the self-kindness elements of these training programs specifically: personal resilience, work-home balance and indirectly physicians' professional fulfillment. Physicians and healthcare organizations responsible for the well-being of the medical workforce may include such programs in their well-being enhancing strategies. More so, the results of

this study seem to suggest that physicians operating in demanding work environments with a focus on efficiency, productivity and competitiveness(6, 7) may comfortably be more self-kind instead of being harsh and judgmental towards themselves. Doing so will likely benefit their own well-being and thereby ultimately optimize the quality of patient care.

As this study focused on one component of self-compassion, self-kindness, future research may also include the other two subscales of self-compassion – mindfulness and common humanity – to explore their (combined) effect on professional fulfillment. Also it would be worthwhile to explore whether other work-related aspects or physicians' individual characteristics may mediate the relationship between self-kindness and professional fulfillment. Finally, future research could be aimed at investigating which, if any, self-attitudes may directly enhance physicians' professional fulfillment.



**Conclusions**

This was the first study, to our knowledge, to empirically examine the relationship between physicians' self-kindness and professional fulfillment. The results of this study indicate that Dutch cardiologists report relatively high professional fulfillment levels and are moderately self-kind. Cardiologists who perceived themselves as more self-kind did not report higher levels of professional fulfillment. However, they reported higher levels of resilience and a better work-home balance, which positively contributed to their professional fulfillment. This study may stimulate and remind physicians to be kind towards themselves as it may benefit them and their patients.

**REFERENCES**


1. Brown S, Gunderman RB. Viewpoint:: Enhancing the Professional Fulfillment of Physicians. Academic Medicine. 2006;81(6):577-82.
2. Schrijver I, Brady KJ, Trockel M. An exploration of key issues and potential solutions that impact physician wellbeing and professional fulfillment at an academic center. PeerJ. 2016;4:e1783.
3. Baathe F, Rosta J, Bringedal B, Rø KI. How do doctors experience the interactions among professional fulfilment, organisational factors and quality of patient care? A qualitative study in a Norwegian hospital. BMJ open. 2019;9(5):e026971.
4. Olson K, Marchalik D, Farley H, Dean SM, Lawrence EC, Hamidi MS, et al. Organizational strategies to reduce physician burnout and improve professional fulfillment. Current problems in pediatric and adolescent health care. 2019;49(12):100664.
5. Jyothindran R, d'Etienne JP, Marcum K, Tijerina A, Graca C, Knowles H, et al. Fulfillment, burnout and resilience in emergency medicine—Correlations and effects on patient and provider outcomes. PloS one. 2020;15(10):e0240934.
6. Trockel M, Sinsky C, West CP, Dyrbye LN, Tutty M, Carlasare L, et al., editors. Self-valuation challenges in the culture and practice of medicine and physician well-being. Mayo Clinic Proceedings; 2021: Elsevier.
7. Shanafelt TD, Schein E, Minor LB, Trockel M, Schein P, Kirch D. Healing the Professional Culture of Medicine. Mayo Clinic Proceedings. 2019;94(8):1556-66.
8. Shanafelt TD, Dyrbye LN, West CP. Addressing Physician Burnout: The Way Forward. JAMA. 2017;317(9):901-2.
9. Trockel MT, Hamidi MS, Menon NK, Rowe SG, Dudley JC, Stewart MT, et al., editors. Self-valuation: Attending to the most important instrument in the practice of medicine. Mayo Clinic Proceedings; 2019: Elsevier.
10. Gabbard GO, Gresch EE. The Role of Compulsiveness in the Normal Physician. Journal of Occupational and Environmental Medicine. 1986;28(3):247.
11. Patel RS, Bachu R, Adikey A, Malik M, Shah M. Factors related to physician burnout and its consequences: a review. Behavioral sciences. 2018;8(11):98.
12. Vaglum P, Falkum E. Self-criticism, dependency and depressive symptoms in a nationwide sample of Norwegian physicians. Journal of affective disorders. 1999;52(1-3):153-9.
13. Montero-Marín J, Gaete J, Demarzo M, Rodero B, Lopez LCS, García-Campayo J. Self-criticism: a measure of uncompassionate behaviors toward the self, based on the negative components of the self-compassion scale. Frontiers in Psychology. 2016;7:1281.
14. Dev V, Fernando AT, Consedine NS. Self-compassion as a stress moderator: A cross-sectional study of 1700 doctors, nurses, and medical students. Mindfulness. 2020:1-12.
15. Raab K. Mindfulness, self-compassion, and empathy among health care professionals: a review of the literature. Journal of health care chaplaincy. 2014;20(3):95-108.
16. Durkin M, Beaumont E, Hollins Martin CJ, Carson J. A pilot study exploring the relationship between self-compassion, self-judgement, self-kindness, compassion, professional quality of life and wellbeing among UK community nurses. Nurse Education Today. 2016;46:109-14.
17. Solms L, Van Vianen A, Koen J, Theeboom T, De Pagter AP, De Hoog M. Turning the tide: a quasi-experimental study on a coaching intervention to reduce burn-out symptoms

and foster personal resources among medical residents and specialists in the Netherlands. BMJ open. 2021;11(1):e041708.
18. Sinclair S, Kondejewski J, Raffin-Bouchal S, King-Shier KM, Singh P. Can self-compassion promote healthcare provider well-being and compassionate care to others? Results of a systematic review. Applied Psychology: Health and Well-Being. 2017;9(2):168-206.
19. Neff KD. The self-compassion scale is a valid and theoretically coherent measure of self-compassion. Mindfulness. 2016;7(1):264-74.
20. Seligman ME, Csikszentmihalyi M. Positive psychology: An introduction. Flow and the foundations of positive psychology: Springer; 2014. p. 279-98.
21. Neff K. Self-Compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. Self & Identity. 2003;2(2):85.
22. Berry KA, Kowalski KC, Ferguson LJ, McHugh TLF. An empirical phenomenology of young adult women exercisers' body self-compassion. Qualitative research in sport and exercise. 2010;2(3):293-312.
23. Breines J, Toole A, Tu C, Chen S. Self-compassion, body image, and self-reported disordered eating. Self and Identity. 2014;13(4):432-48.
24. Trockel M, Bohman B, Lesure E, Hamidi MS, Welle D, Roberts L, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. Academic Psychiatry. 2018;42(1):11-24.
25. Karasek R. Healthy work. Stress, productivity, and the reconstruction of working life. 1990.
26. Jacobson PD, Pomfret SD. ERISA litigation and physician autonomy. Jama. 2000;283(7):921-6.
27. Neff K, Leary S-CIM, Hoyle R. Individual Differences in Social Behavior (pp. 561-573). New York: Guilford Press.
28. Smith JL. Self-compassion and resilience in senior living residents. Seniors Housing and Care Journal. 2015;23(1):17-31.
29. Menon NK, Trockel MT, Shanafelt TD, editors. Developing a portfolio to support physicians' efforts to promote well-being: one piece of the puzzle. Mayo Clinic Proceedings; 2019: Mayo Foundation for Medical Education and Research.
30. Nicklin JM, Seguin K, Flaherty S. Positive work-life outcomes: Exploring selfcompassion and balance. European Journal of Applied Positive Psychology. 2019;3(6):1-13.
31. Dyrbye LN, Sotile W, Boone S, West CP, Tan L, Satele D, et al. A survey of U.S. physicians and their partners regarding the impact of work-home conflict. J Gen Intern Med. 2014;29(1):155-61.
32. Epstein RM, Krasner MS. Physician resilience: what it means, why it matters, and how to promote it. Academic Medicine. 2013;88(3):301-3.
33. Dyrbye LN, Freischlag J, Kaups KL, Oreskovich MR, Satele DV, Hanks JB, et al. Work-Home Conflicts Have a Substantial Impact on Career Decisions That Affect the Adequacy of the Surgical Workforce. Archives of Surgery. 2012;147(10):933-9.
34. Bakker AB, Schaufeli WB, Leiter MP, Taris TW. Work engagement: An emerging concept in occupational health psychology. Work & stress. 2008;22(3):187-200.
35. Mache S, Vitzthum K, Klapp BF, Danzer G. Surgeons' work engagement: Influencing factors and relations to job and life satisfaction. The surgeon. 2014;12(4):181-90.

36. Dousin O, Collins N, Kaur Kler B. Work-life balance, employee job performance and satisfaction among doctors and nurses in Malaysia. Int J Hum Resour Stud. 2019;9:306-19.
37. Keeton K, Fenner DE, Johnson TR, Hayward RA. Predictors of physician career satisfaction, work–life balance, and burnout. Obstetrics & Gynecology. 2007;109(4):949-55.
38. Malik MI, Saleem F, Ahmad M. Work-life balance and job satisfaction among doctors in Pakistan. South Asian Journal of Management. 2010;17(2):112.
39. Panagioti M, Geraghty K, Johnson J. How to prevent burnout in cardiologists? A review of the current evidence, gaps, and future directions. Trends in cardiovascular medicine. 2018;28(1):1-7.
40. Patel RK, Sweeney MD, Baker CSR, Greenberg N, Piper SE, Shergill SS, et al. If not now, when? Enhancing cardiologists' psychological well-being as a COVID-19 gain. Heart. 2021;107(7):593-5.
41. Michel JB, Sangha DM, Erwin JP. Burnout Among Cardiologists. The American Journal of Cardiology. 2017;119(6):938-40.
42. Lee WL, Chinna K, Lim Abdullah K, Zainal Abidin I. The forward-backward and dual-panel translation methods are comparable in producing semantic equivalent versions of a heart quality of life questionnaire. International journal of nursing practice. 2019;25(1):e12715.
43. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. International journal of behavioral medicine. 2008;15(3):194-200.
44. Marais C, Mostert K, Geurts S, Taris T. The Psychometric Properties of a Translated Version of the Survey Work-Home Interaction — Nijmegen (SWING) Instrument. South African Journal of Psychology. 2009;39(2):202-19.
45. Green SB. How many subjects does it take to do a regression analysis. Multivariate behavioral research. 1991;26(3):499-510.
46. VanVoorhis CW, Morgan BL. Understanding power and rules of thumb for determining sample sizes. Tutorials in quantitative methods for psychology. 2007;3(2):43-50.
47. Hayes AF. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach: Guilford publications; 2017.
48. Abu-Bader S, Jones TV. Statistical mediation analysis using the sobel test and hayes SPSS process macro. International Journal of Quantitative and Qualitative Research Methods. 2021.
49. Dyrbye LN, West CP, Satele D, Boone S, Tan L, Sloan J, et al. Burnout Among U.S. Medical Students, Residents, and Early Career Physicians Relative to the General U.S. Population. Academic Medicine. 2014;89(3).
50. Dyrbye LN, Varkey P, Boone SL, Satele DV, Sloan JA, Shanafelt TD, editors. Physician satisfaction and burnout at different career stages. Mayo Clinic Proceedings; 2013: Elsevier.
51. Shanafelt TD, Gradishar WJ, Kosty M, Satele D, Chew H, Horn L, et al. Burnout and career satisfaction among US oncologists. Journal of Clinical Oncology. 2014;32(7):678.
52. Kim JH. Multicollinearity and misleading statistical results. kja. 2019;72(6):558-69.
53. Shanafelt TD, Wang H, Leonard M, Hawn M, McKenna Q, Majzun R, et al. Assessment of the association of leadership behaviors of supervising physicians with

personal-organizational values alignment among staff physicians. JAMA Network Open. 2021;4(2):e2035622-e.
54. Bogerd R, Silkens MEWM, Keuken DG, Hassink RJ, Henriques JPS, Lombarts KMJMH. Work-Related Well-Being Among Dutch Cardiologists – A National Survey. Current Problems in Cardiology. 2023;48(4):101538.
55. Serçe Yüksel Ö, Partlak Günüşen N, Çelik Ince S, Zeybekçi S. Experiences of oncology nurses regarding self-compassion and compassionate care: A qualitative study. International Nursing Review. 2022;69(4):432-41.
56. Babenko O, Mosewich AD, Lee A, Koppula S. Association of physicians' self-compassion with work engagement, exhaustion, and professional life satisfaction. Medical Sciences. 2019;7(2):29.
57. Neff K. Test how self-compassionate you are. Self-compassion.org. [Available from: https://self-compassion.org/self-compassion-test/.
58. Neff KD, Whittaker TA, Karl A. Examining the factor structure of the Self-Compassion Scale in four distinct populations: Is the use of a total scale score justified? Journal of Personality Assessment. 2017;99(6):596-607.
59. Eley DS, Cloninger CR, Walters L, Laurence C, Synnott R, Wilkinson D. The relationship between resilience and personality traits in doctors: implications for enhancing well being. PeerJ. 2013;1:e216.
60. Feder A, Nestler EJ, Charney DS. Psychobiology and molecular genetics of resilience. Nature Reviews Neuroscience. 2009;10(6):446-57.
61. Kemper KJ, Mo X, Khayat R. Are mindfulness and self-compassion associated with sleep and resilience in health professionals? The Journal of Alternative and Complementary Medicine. 2015;21(8):496-503.
62. Mehta DH, Perez GK, Traeger L, Park ER, Goldman RE, Haime V, et al. Building Resiliency in a Palliative Care Team: A Pilot Study. Journal of Pain and Symptom Management. 2016;51(3):604-8.
63. Moorfield C, Cope V. Interventions to increase resilience in physicians: A structured literature review. EXPLORE. 2020;16(2):103-9.
64. O'Brien JM, Goncin U, Ngo R, Hedlin P, Chakravarti A. Professional fulfillment, burnout, and wellness of anesthesiologists during the COVID-19 pandemic. Canadian journal of anaesthesia = Journal canadien d'anesthesie. 2021;68(5):734-6.
65. Mehta Laxmi S, Lewis Sandra J, Duvernoy Claire S, Rzeszut Anne K, Walsh Mary N, Harrington Robert A, et al. Burnout and Career Satisfaction Among U.S. Cardiologists. Journal of the American College of Cardiology. 2019;73(25):3345-8.
66. Mills J, Chapman M. Compassion and self-compassion in medicine: Self-care for the caregiver. The Australasian Medical Journal. 2016;9(5):87-91.
67. Zessin U, Dickhäuser O, Garbade S. The relationship between self-compassion and well-being: A meta-analysis. Applied Psychology: Health and Well-Being. 2015;7(3):340-64.

## APPENDIX I

**NVVC Survey on Cardiologists' Occupational Well-being***

*[Translated from Dutch to English]*

**Sociodemographic characteristics[1]**

---

.1| I agree to participate in this research.

- Yes

---

.2| Date of consent.

- "Dropdown with dates"

---

.3| What is your sex?

- Male
- Female
- Other

---

.4| What is your age?

- Younger than 36 years old
- 36 – 45 years old
- 46 – 55 years old
- 56 – 65 years old
- > 65 years old

---

.5| What type of hospital are you currently working in**?**

- Independent sector treatment center
- General hospital
- Top clinical hospital
- University hospital

[1] Respondents could only select one answer option per sociodemographic item.

**Self-kindness**

.1| I try to be loving towards myself when I'm feeling emotional pain.

.2| When I'm going through a very hard time, I give myself the caring and tenderness I need.

.3| I'm kind to myself when I'm experiencing suffering.

.4| I'm tolerant of my own flaws and inadequacies.

.5| I try to be understanding and patient towards those aspects of my personality I don't like.

*This subscale was answered on a 5-point Likert scale:* Never; Sometimes; Regularly; Often; Always

**Individual resilience**

.1| I tend to bounce back quickly after hard times.

.2| I have a hard time making it through stressful events.

.3| It does not take me long to recover from a stressful event.

.4| It is hard for me to snap back when something bad happens.

.5| I usually come through difficult times with little trouble.

.6| I tend to take a long time to get over set-backs in my life.

*This subscale was answered on a 5-point Likert scale:* Totally disagree; Disagree; Neutral; Agree; Totally agree

**Work-home interference**

*How often does it happen that…*

.1| You have trouble combining your work and private life?[2]

.2| You do not have the energy to engage in leisure activities with your spouse/family/friends because of your job?

.3| You are irritable at home because your work is demanding?

.4| You find it difficult to fulfil your domestic obligations because you are constantly thinking about your work?

.5| You have to cancel appointments with your spouse/family/friends due to work-related commitments?

.6| Your work schedule makes it difficult for you to fulfil your domestic obligations?

.7| You have to work so hard that you do not have time for any of your hobbies?

.8| Your work takes up time that you would have liked to spend with your spouse/family/friends?

.9| Your work obligations make it difficult for you to feel relaxed at home?

*This subscale was answered on a 4-point Likert scale:* Never; Sometimes; Often; Always

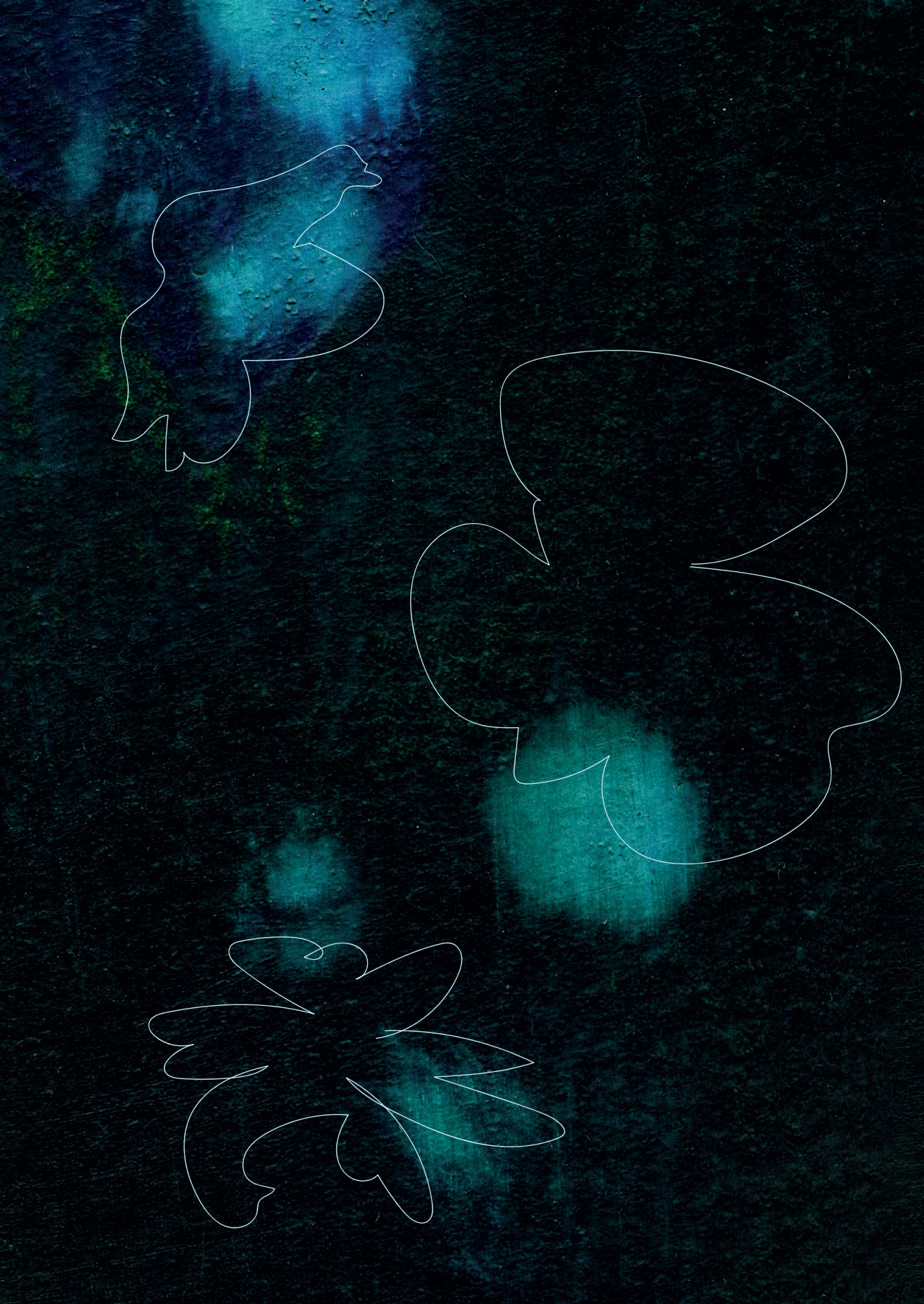
[2] This first item differs from the first item in the official negative Work-Home Interference subscale of the Survey Work-Home Interaction – Nijmegen: "You do not fully enjoy the company of your spouse/family/friends because you worry about your work?". The authors decided to change this item after thorough discussions with the Netherlands Society of Cardiology, because all felt that the "new" item covers more than the official item and would offer a more realistic picture of the (potential) work-home interferences Dutch cardiologists experience.

**Professional fulfillment**

| |
|---|
| .1\| I feel happy at work. |
| .2\| I feel worthwhile at work. |
| .3\| My work is satisfying to me. |
| .4\| I feel in control when dealing with difficult problems at work. |
| .5\| My work is meaningful to me. |
| .6\| I'm contributing professionally (e.g. patient care, teaching, research, and leadership) in the ways I value most. |

*This subscale was answered on a 5-point Likert scale:* Totally disagree; Disagree; Neutral; Agree; Totally agree

***This study was part of a larger project about Dutch cardiologists' occupational well-being. This appendix only shows the survey items/ variables relevant for our study. For an outline of the full survey including all items/ variables please contact the authors.***



# Chapter 4

## Compassionate behavior of clinical faculty: associations with role modelling and gender specific differences

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**ABSTRACT**

**Introduction**

For future doctors, learning compassion skills is heavily dependent on female and male faculty's role modelling in practice, more insight into the relation between faculty's compassionate behavior, faculty gender and role modelling is needed.

**Methods**

In this cross-sectional survey, we analyzed 12416 resident evaluations of 2399 faculty members across 22 Dutch hospitals. The predictor variables were observed compassionate behavior, faculty gender (reference category: female), and an interaction term between those two. Our outcome variables were person, teacher and physician role model. All variables, except for faculty gender, were scored on a 7-point Likert scale ranging from 1 "totally disagree" to 7 "totally agree".

**Results**

Female faculty scored slightly but significantly higher (M = 6.2, SD = 0.7) than male faculty (M = 5.9, SD = 0.6) on observed compassionate behavior. Observed compassionate behavior was significantly positively associated with being seen as a role model teacher (b = 0.695; 95% CI = 0.623 – 0.767), physician (b = 0.657; 95% CI = 0.598 – 0.716) and person (b = 0.714; 95% CI = 0.653 – 0.775). Male gender showed significant negative associations

with role model teacher (b = -0.847; 95% CI = -1.431 - -0.262), physician (b = -0.630, 95% CI = -1.111 - -0.149) and person (b = -0.601, 95% CI = -1.099 - -0.103). The interaction term showed positive significant associations with role model teacher (b = 0.157, 95% CI = 0.061 – 0.767), physician (b = 0.116, 95% CI = 0.037 – 0.194) and person (b = 0.102, 95% CI = 0.021 – 0.183).

**Discussion**

Dutch residents, in general, observed their faculty to be compassionate towards patients and families and faculty's observed compassionate behavior is related to being seen as a role model. However, male faculty benefit more from demonstrating compassion, as it has a greater positive influence on their perceived role model status compared to female faculty.

## INTRODUCTION

In current times where healthcare systems are facing huge patient demands and workforce shortages at the same time, patients frequently experience a lack of compassionate behavior from their healthcare professionals(1-4). This is worrisome, as compassion is a crucial element of high quality patient care. Patients who experience their care as compassionate are less anxious, have lower stress and pain levels, and even report quicker wound healing and other favorable clinical outcomes.(5-7) Perhaps even more disturbing, the absence of compassion in patient care has been associated with an increased risk of medical errors and physician burnout(7-9) and higher healthcare spendings in the long run(7, 10).

Faculty may express compassionate behavior through both small and grand gestures in medical practice. Small gestures include for example putting a hand on a patient's shoulder or verbally expressing one's understanding of the patient's feelings, whereas visiting the patient more often than usual is an example of a grander gesture.(11, 12) Caring for patients with compassion is not self-evident. Some faculty show more compassion than others.(13-15) Research suggests that there are individual attributes, experiences and characteristics that can be associated with the variation in clinicians' expressions of compassionate behavior towards patients.(15-17) Gender may be such a characteristic. Although female faculty are often expected to be more compassionate conforming to socially and historically defined gender roles(18, 19), research on the difference in compassionate behavior between male and female faculty is not unanimous. A 2022 systematic review by Pavlova and colleagues(17) found a comparable number of studies favoring female faculty and studies showing no effect for gender on compassionate behavior (respectively 20 versus 18 studies); only three studies found

male faculty to be more compassionate.(17) Two-thirds of the studies included in the review used quantitative methods, but of those, almost all were self-report studies. There is little to no quantitative research on faculty's compassionate behavior as observed by residents. As the transfer of compassion skills to future doctors is heavily dependent on faculty's (positive) role modelling in practice (16, 20-22), getting a grip on whether and to what extent residents actually observe female and male faculty's compassionate behavior in practice is essential.

Role modelling is the overarching activity that includes everything faculty do in their being and acting as professionals.(23, 24) For residents a role model is a supervisor whose skills and behaviors they desire to emulate(25) which, in addition to formal curricula, makes role modeling a powerful strategy to instill essential professional competencies in young doctors.(26) Medical education research commonly distinguishes three role model typologies: teacher, physician and person role models.(23, 24) Teacher role model qualities include for example a student-centered approach and effective communication and feedback. A physician role model is admired for their medical knowledge and skills, sound clinical reasoning and clear communication with patients and staff. Person role models know how to maintain effective interpersonal relationships, are enthusiastic and promote healing through qualities such as compassion, honesty and integrity.(24) Residents mentioned compassion as an important attribute for clinical and person models, but not for the teacher role specifically.(24, 27) Additionally, previous work found male role models to be generally described as more admirable and more likely to be admired for their personalities than for their professionalism.(28) Research on the relation between compassion and role modeling is scarce, outdated and shows contradictory results(13, 20, 29, 30) and the effect of gender on this relationship has not been studied yet. Given that role modelling is crucial for transferring compassion

skills(16, 20-22), that some faculty fail to role model compassion in practice(13, 14) and that it is largely a matter of chance which role models residents encounter during their training(31), more insight in the effect of faculty gender on the relation is needed.

This study aims to answer the following research questions: 1) To what extent do residents observe faculty showing compassionate behavior towards patients, and are these perceptions equal for female and male faculty? and 2) To what extent do faculty's observed compassionate behavior towards patients and faculty gender predict them 'being seen as a role model' by residents, and does this differ for female and male faculty?

## METHODS

### Study design and setting

In the Netherlands, the eight academic medical centers provide residency training in collaboration with multiple affiliated teaching hospitals. Within these hospitals, residency training is the joint responsibility of the teaching faculty group led by a program director. The duration of residency training varies between specialties (three to six years).(32) As the quality of medical workplace training ultimately determines the quality of patient care[21], regular evaluation of faculty's teaching qualities by their residents is incorporated in medical training quality and improvement cycles.

In the Netherlands, the *System for Evaluation of Teaching Qualities* (SETQ) is a widely used and well researched teaching evaluation tool.(33-35) With the latest validated 31 item questionnaire, residents evaluate their faculty's qualities within six teaching domains: learning climate, professional attitude towards residents, learner centeredness, evaluation of residents, feedback to residents and professional practice management. Apart from these teaching domains, the SETQ includes two separate items

in which residents score faculty on: “adhering to professional practice standards” and “demonstrating compassion toward patients and their families”.(33) For a full overview of the SETQ questionnaire see supplement I ‘SETQ Questionnaire’.

**Study participants and data collection**

To address our study aims, we gathered empirical data between August 2020 and March 2023. Data were collected using the SETQ questionnaire, via the online Perito Professional Performance platform.(36) Residents from programs of various specialties were included. We decided to also include ‘junior doctors not in residency training’[1] and fellows. The former because, although they are not enrolled in postgraduate training, they have similar tasks to residents and the latter because they are still in training albeit as medical specialists. From now on, when we talk about residents we mean all of those included.



In the email invitation for the web-based SETQ questionnaire residents were told to evaluate only those faculty members whom they regularly work together with and they feel they can evaluate accurately. The email furthermore informed residents about the formative purpose and use of the evaluations, as well as the purpose of research, and stressed that participation was anonymous and voluntary.

[1] In the Netherlands, medicine graduates often begin their careers as "junior doctors not in training." In this role, they perform many of the same tasks as residents but are not enrolled in a formal specialty training program. This period allows them to gain valuable clinical experience and build a professional network, which can help them to secure a spot in residency training later on.

**Measures**

Our outcome variables were the three types of role-modelling, measured by the items "During my residency training, this attending supervisor generally 1) is a role model to me as a teacher/ supervisor, 2) is a role model to me as a physician, 3) is a role model to me as a person". The main predictor in our study was 'observed compassionate behavior towards patients'. This variable was measured using the item "During my residency training, this attending supervisor generally demonstrates compassion towards patients and their families". Our second predictor variable was gender (male/ female). Both our main predictor, observed compassionate behavior towards patients, as well as all three role-modelling items were scored on a 7-point Likert scale: 1= "totally disagree", 2= "disagree", 3= "somewhat disagree", 4= "neutral", 5= "somewhat agree", 6= "agree", 7= "totally agree" or "not applicable".(37)

**Statistical analyses**

Since faculty were evaluated by multiple residents, we aggregated and analyzed our data on the level of the faculty member. Before aggregation, we removed 239 duplicate cases referring to residents who evaluated the same faculty member twice or more at one moment in time. We only included faculty whose SETQ scores were based on at least 3 unique resident evaluations to assure the reliability of the included scores.(34)[2] Furthermore, when faculty had participated in multiple evaluation cycles (e.g. in 2021 and in 2023), we only included the scores of their most recent evaluation cycle. Finally, for the variable faculty gender answering options were male, female, and 'other'. While

[2] In a previous confirmatory factor analysis study of the SETQ, generalizability analysis showed that only two or three evaluations per supervisor was enough for high reliability levels: *"The generalizability analysis, that was conducted to reveal if the trainee evaluations, aggregated on supervisor level, had high α levels even if just a few trainees completed an evaluation for a specific supervisor, revealed that if only two or three trainees completed an evaluation, α > .89 for all subscales."*

suboptimal from a research perspective, evaluations used in medical training quality and improvement cycles often offer limited gender options to protect privacy. In our study, the 'other' option was set to missing because the category was relatively small (8.4%) and could encompass multiple meanings (e.g. a gender other than male or female or the wish not to give away their gender).

The first aim of this study was to explore to what extent residents perceive faculty to behave compassionately towards their patients and to shed light on any gender-related differences between faculty. To this end we employed descriptive statistics and conducted an independent samples t-test, using faculty gender as our grouping variable.



Our second goal was to investigate to what extent faculty's compassionate behavior towards patients predicts them being seen as a role model and whether and how this differs for female and male faculty. For this purpose, we built a multivariate general linear model (GLM). All assumptions for a multivariate GLM were met.[3] Within our model we used multiple outcome variables (the three types of role models) simultaneously with the same set of predictors (observed compassionate behavior towards patients and faculty gender (reference category = female)). We also entered an interaction term (observed compassionate behavior*faculty gender) in the model, as a third predictor. As the nature of our study is fairly explorative, a significance level of $\alpha < 0.05$ will be used to interpret the various effects found. As a sensitivity analysis, we additionally explored whether there were any differences in the scores given by male versus female residents on all our predictor and outcome variables. We also checked whether the scores of female

[3] Although the assumption of the outcome variables being continuous was not strictly met in our model, it is quite common in the field of medical education to use a Multivariate GLM with Likert scale variables as outcome measures. In this context, these variables are typically interpreted as continuous scores.

residents were different for male and female faculty and vice versa. All analyses were performed using SPSS Statistics V.28.

### Ethical approval

The institutional ethical review board of the Amsterdam UMC of the University of Amsterdam provided a waiver declaring the Medical Research Involving Human Subjects Act (WMO) did not apply to the current study (reference number 2023.0844). This study complies with the EU GDPR guidelines.

## RESULTS

In total, 2399 faculty members representing 155 departments in 22 hospitals were scored based on 12416 resident evaluations, of mostly female residents (64.0%) Most faculty were male (51.1%), non-surgical specialists (38.8%) and worked in a university hospital (55.4%) The median number of resident evaluations per supervisor was 4. (See Table 1 for participant characteristics).

**Table 1. Characteristics of study participants.**

| Demographic characteristics | N | Frequency (%) |
|---|---|---|
| **Number of residents participated** | 2425 | |
| **Gender (residents)** | | |
| Male | 783 | 32.3% |
| Female | 1390 | 57.3% |
| Missing | 252 | 10.4% |
| **Number of resident evaluations** | 12416 | |
| **Number of faculty evaluated** | 2399 | |

| | | |
|---|---|---|
| **Medium number of evaluations per faculty** | 4 | |
| **Gender (faculty)** | | |
| Male | 1124 | 51.1% |
| Female | 1077 | 44.9% |
| Missing | 198 | 8.3% |
| **Type of institute (faculty)** | | |
| University hospital | 1326 | 55.3% |
| General hospital | 285 | 11.9% |
| Independent treatment center | 21 | 0.9% |
| Mental healthcare center | 21 | 0.9% |
| Tertiary referral hospital | 671 | 28% |
| Missings | 75 | 3.1% |
| **Specialty category (faculty)[a]** | | |
| Non-surgical | 932 | 38.8% |
| Surgical | 753 | 31.4% |
| Supportive | 395 | 16.5% |
| Non-medical | 152 | 6.3% |
| Missings | 167 | 7.0% |

[a] For a detailed description of the specialty categories see Supplement III 'Categorization of specialty programs'.

On all included variables supervisors scored above a mean of 5.6 on a 7-point Likert scale. Female (F) faculty scored slightly but significantly higher than male (M) faculty on observed compassionate behavior towards patients (F = 6.2 (SD = 0.6) versus M = 5.9 (SD = 0.7)) and on all types of role modelling (teacher: F = 5.8 (SD = 0.8) versus M = 5.7 (SD = 0.9), physician: F = 6.0 (SD = 0.7) versus M = 5.9 (SD = 0.8) and person: F = 5.8 (SD = 0.7) versus M = 5.6 (SD = 0.8)). The highest score found is female faculty's mean score on observed compassionate behavior (6.2, SD = 0.6) and the lowest is male faculty's mean score on person role model (5.6, SD =0.8). (See Table 2 for mean and median scores and p values for the independent samples t-test). Based on visual inspection of our data,

resident gender did not seem to affect these scores. (See supplement II 'Sensitivity analyses resident gender'.)

**Table 2. Mean and median scores of resident ratings of observed compassionate behavior and role-modelling and t-test p value (α<0.05).**

| Main variables | All faculty | | Female faculty | | Male faculty | | |
|---|---|---|---|---|---|---|---|
| | Mean (sd) | Median (25-75 percentile) | Mean (sd) | Median (25-75 percentile) | Mean (sd) | Median (25-75 percentile) | Independent t-test |
| **Observed compassionate behavior** | 6.1 (0.6) | 6.2 (5.7-6.5) | 6.2 (0.6) | 6.3 (6.0-6.7) | 5.9 (0.7) | 6.0 (5.6-6.4) | t = -9.6, p< 0.001 |
| **Teacher role model** | 5.7 (0.9) | 5.9 (5.3-6.3) | 5.8 (0.8) | 6.0 (5.3-6.3) | 5.7 (0.9) | 5.8 (5.3-6.3) | t = -2.5, p = 0.013 |
| **Physician role model** | 5.9 (0.7) | 6.0 (5.6-6.4) | 6.0 (0.7) | 6.0 (5.7-6.5) | 5.9 (0.8) | 6.0 (5.5-6.3) | t = -3.4, p < 0.001 |
| **Person role model** | 5.7 (0.8) | 5.8 (5.3-6.3) | 5.8 (0.7) | 6.0 (5.4-6.3) | 5.6 (0.8) | 5.8 (5.3-6.3) | t = -5.4, p < 0.001 |

We found significant positive associations between observed compassionate behavior from faculty towards patients and them being seen as a role model teacher (b = 0.695; 95% CI = 0.623 – 0.767), physician (b = 0.657; 95% CI = 0.598 – 0.716) and person (b = 0.714; 95% CI = 0.653 – 0.775). Our second predictor variable, faculty gender (reference category = female) was significantly associated with all three role model types: teacher (b = -0.847; 95% CI = -1.431 - -0.262), physician (b = -0.630, 95% CI = -1.111 - -0.149) and person (b = -0.601, 95% CI = -1.099 - -0.103). Finally, the interaction term between observed compassionate behavior and faculty gender showed small but significant associations with the teacher (b = 0.157, 95% CI = 0.061 – 0.767), the physician (b = 0.116, 95% CI = 0.037 – 0.194) and the person role model (b = 0.102, 95% CI = 0.021 – 0.183). (Table 3). Visual inspection of descriptive analyses revealed no indication of an effect of resident gender (see supplement II 'Sensitivity analyses resident gender').
For a more detailed summary of the results of our multivariate GLM see supplement IIII 'Mutivariate GLM summary'.

| Table 3. Unadjusted multivariate general linear model (GLM) predicting faculty being seen as a role model by residents according to their gender and their observed compassionate behavior towards patients and families. | | | | |
|---|---|---|---|---|
| | **B (SE)** | **95% CI** | | ***p*** |
| **Observed compassionate behavior** | | *LL* | *UL* | |
| Observed compassionate behavior on teacher role model | 0.695 (0.037) | 0.623 | 0.767 | <0.001 |
| Observed compassionate behavior on physician role model | 0.657 (0.030) | 0.598 | 0.716 | <0.001 |
| Observed compassionate behavior on person role model | 0.714 (0.031) | 0.653 | 0.775 | <0.001 |
| **Faculty gender[a]** | | | | |
| Faculty gender on teacher role model | -0.847 (0.298) | -1.431 | -0.262 | 0.005 |
| Faculty gender on physician role model | -0.630 (0.245) | -1.111 | -0.149 | 0.010 |
| Faculty gender on person role model | -0.601(0.254) | -1.099 | -0.103 | 0.018 |
| **Observed compassionate behavior*Faculty gender** | | | | |
| Interaction on teacher role model | 0.157 (0.049) | 0.061 | 0.767 | 0.001 |
| Interaction on physician role model | 0.116 (0.040) | 0.037 | 0.194 | 0.004 |
| Interaction on person role model | 0.102 (0.041) | 0.021 | 0.183 | 0.014 |

**[a] The reference category for this variable was female.**



## DISCUSSION

### Main findings

This study quantitively explored how residents perceive their faculty's compassionate behaviors towards patients, and whether these observed behaviors were associated with being better role models. This is especially important as role modelling is an important strategy to transfer compassion related skills towards residents. We found that Dutch residents, in general, observed their faculty to be compassionate towards patients (mean = 6.1 on a 7- point scale; SD = 0.6), and that female (F) faculty performed slightly but significantly better than their male (M) peers (F = 6.2 (SD = 0.7) versus M = 5.9 (SD = 0.6)).

Although these differences may not be immediately apparent in practice, the results of this study are consistent in showing female faculty outperforming their male peers on all variables included, with the larges difference between males and females found observed compassionate behavior. Additionally, residents perceived the more compassionate supervisors as better role model teachers, role model physicians and role model persons. The interaction effect between observed compassionate behavior and faculty gender indicated that when male faculty showed compassion, this reflected on them being seen as a role model more positively than when female faculty demonstrated compassion. As far as this study was able to detect, resident gender did not affect these results.

**Explanation of findings**

The mean score of 6.1 for faculty's observed compassionate behaviors as measured in this study suggests that residents in general perceive faculty to show compassion towards patients and families. This score is comparable to previously reported findings on compassionate behaviors in the context of evaluating faculty's clinical – instead of teaching – performance.(38) When asked about faculty's patient-centeredness competencies, which included the item "Shows compassion to patients", residents rated their faculty with an average of 4.43 on a 5-point Likert scale. (38) Peer faculty and other healthcare professionals rated faculty's compassionate behavior slightly higher than residents did and provided scores between 4.45 and 4.55 on a 5-point Likert scale.(38)

The average role modelling scores found in our study ranged from 5.7 (person and teacher) to 5.9 (physician). These scores are comparable to the findings in a 2012 SETQ study, which showed similar results on all three types of role modelling - the physician role model type also slightly outscoring the others.(23)

The most recent SETQ study, which was performed among US surgeons, also reported scores comparable to our findings, although the highest scores were found both on the physician and the teacher role model type.(39) Notably, the many SETQ studies performed amongst different specialties, in various healthcare settings and contexts around the world, show that overall, teaching faculty score well above a 3.5 on a 5-point Likert scale, and well above a 5.0 when a 7-point scale is used on all items and teaching domains.(33, 37, 39-41)

The found relationship between compassionate behavior and role modelling in this study underscores previous qualitative findings that compassionate behavior, according to residents, is an important attribute of being seen as a role model.(24, 27) As residents also observe their faculty's expressions of compassionate care in practice, together these findings endorse the notion that role modelling might indeed be a powerful strategy to transfer compassionate care skills to residents.(42) Previous research, however, showed that residents' perceptions and ideas about what compassionate care entails may differ from patients' experiences with and expectations of compassionate care. Based on interviews with residents and patients, Debets et al. (2024) reported that *"residents often perceived that assessing patients' compassion needs comes down to the adage 'do unto others as you would have them do unto you'",* whereas patients were rather being asked about their specific needs.(12) From this viewpoint, it is possible that the main (if not only) strategy to convey compassionate care skills to the next generation of physicians, overlooks crucial elements of compassionate care. Consequently, explicitly educating practicing faculty, residents and medical students about the fundamentals of compassion becomes a necessary additional step. This may be something to address in medical curriculum reform processes as there is strong evidence about the beneficial effects of compassion for both patients and physicians.(3, 5, 7, 16, 43-45)

Based on this quantitative study, it is unclear what behavioral differences in compassionate behavior exactly were observed by residents. Other studies have highlighted gender-specific practices suggesting that female physicians display for example more patient-centered empathetic communication and better psychosocial counselling.(18, 46-48) These practices resonate with historically female-coded qualities, such as nurturing, expressiveness and relationship building, all of which make up for compassionate behaviors.(18, 19, 49) Notably, in a previous SETQ study we also found higher ratings for female physicians in the more communicative teaching domains of giving residents feedback and displaying professional attitudes to residents.(50) Some might argue that given historical assumptions in the medical field and Western society about female physicians being expected to show compassion towards patients, more so than male peers, the variations we discovered in our study might actually be more pronounced in reality. Thus, though residents might already anticipate compassion from their female supervisors, our findings still show a notable difference favoring women.

Lastly, in the interaction between observed compassionate behavior and gender we found that showing compassion reflects more positively on male supervisors than on female supervisors, i.e. males expressing compassion are rewarded by being seen as role models more than their female peers displaying compassion. Although the found effect was small and therefore perhaps of limited relevance in practice, this finding aligns with the general idea that male physicians are more admired for showing humanistic behaviors because showing these behaviors goes against previously mentioned gendered expectations(18, 28). In previous studies, using patient evaluations, patient-centered behavior in male physicians was associated with higher levels of greater overall performance than in female physicians(47, 51).

**Implications for clinical education, research and policy**

Our study findings show that residents do observe faculty's compassionate behavior towards patients in practice and that this observed behavior is indeed associated with being a better role model. The found association suggests that using role modelling as a teaching strategy for compassion, and maybe broader humanistic skills, might indeed be effective. As the effect of observed compassionate behavior is stronger for male physicians, and they are thus 'rewarded' more for being compassionate towards patients than their female peers, this study contributes to the growing understanding that the medical profession is not gender-neutral.(18, 19, 52, 53). On the whole, this study shows that compassion is being seen and appreciated by residents and could therefore increase knowledge among faculty about the impact of their behaviors towards patients and families.



Which role models residents encounter during their medical training is largely a matter of chance: faculty may vary in how they express compassion towards patients and families(54, 55) and experiences with negative role models lacking humanistic behaviors have been reported.(13, 14, 31, 56) Variation in staff groups, e.g. with regards to gender, may therefore be a practical and potentially beneficial strategy for transferring a range of compassion skills to future doctors. In addition, future research could be aimed at revealing and understanding differences in expressing compassionate behavior between (female and male) faculty in a qualitative way, for example by analyzing the narrative feedback in teaching qualities assessments(57) or by using observational methods. These insights can be used to inform teacher training courses as well as courses on compassion in the (post-graduate) medical curriculum. Lastly, in line with previous empathy

research(58), it may be interesting to explore whether there are differences in (observed) compassionate behavior across faculty members from various medical specialties.

**Strengths and limitations**

This study's multicenter approach, which included both academic and non-academic teaching hospitals, ensures our sample's validity of Dutch clinical teaching faculty. The minimum number of 3 and median number of 4 resident evaluations per faculty guarantee the reliability of teaching faculty scores.(59) Also, we included approximately one third of all Dutch medical residents with a gender division resembling the one in the population.(60) This strengthens us in our conviction that the scores provided are representative for how Dutch residents perceive their supervisors. When interpreting the findings of our study, one should keep in mind the cross sectional nature of this study. Based on previous research(20), we hypothesized that showing compassion towards patients was associated with being seen as a role model in the eyes of residents. The associations found in this study, however, may as well reflect a reverse relationship between these variables. Furthermore, the data of this study were partly gathered during the COVID pandemic, which may have slightly colored our findings. Lastly, although we are familiar with the possibility of a halo effect in survey studies into people's characteristics(61), previous research secures us that residents do differentiate between faculty's (positive) qualities using the SETQ questionnaire.(37, 62)

## Conclusions

This study explored the relationship between faculty's observed compassionate behavior towards patients and them being seen as role models by residents. The findings of this study indicate that Dutch residents, in general, observed their faculty to be compassionate towards patients and families and that expressing compassion is indeed related to being seen as a role model. The positive effect of observed compassionate behavior on being seen as a role model was stronger for male faculty than for female faculty. This suggests that although showing compassion towards patients reflects positively on all faculty in terms of role modelling, residents admire male faculty more for showing compassionate behaviors than female faculty. As far as this study was able to detect, resident gender did not affect our findings. The results of our study may bring more awareness amongst teaching faculty of the importance of showing compassion to patients in training residents to become compassionate care givers. Although role modelling compassionate behaviors can be an effective teaching strategy, the importance and power of compassion should also be made part of the formal medical curriculum.

**REFERENCES**


1. Dignity Health Survey Finds Majority of Americans Rate Kindness as Top Factor in Quality Health Care. Patients willing to pay more and travel further for kinder treatment; Philadelphia receives top grade as kindest city for health care. (13 November 2013). https://www. dignityhealth.org/about-us/press-center/press-releases/majority-of-americans-rate-kindness (assessed 24 February 2025)
2. Levinson W, Chaumeton N. Communication between surgeons and patients in routine office visits. Surgery. 1999;125(2):127-34. https://doi.org/10.1016/S0039-6060(99)70255-2
3. Malenfant S, Jaggi P, Hayden KA, Sinclair S. Compassion in healthcare: an updated scoping review of the literature. BMC Palliat. Care.2022;21(1):80. https://doi.org/10.1186/s12904-022-00942-3
4. Zulman DM, Haverfield MC, Shaw JG, Brown-Johnson CG, Schwartz R, Tierney AA, et al. Practices to Foster Physician Presence and Connection With Patients in the Clinical Encounter. JAMA. 2020;323(1):70-81. https://doi.org/10.1001/jama.2019.19003
5. Pereira L, Figueiredo-Braga M, Carvalho IP. Preoperative anxiety in ambulatory surgery: The impact of an empathic patient-centered approach on psychological and clinical outcomes. Patient Educ Couns. 2016;99(5):733-8. https://doi.org/10.1016/j.pec.2015.11.016
6. Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. Acad. Med. 2011;86(3):359-64. https://doi.org/ 10.1097/ACM.0b013e3182086fe1
7. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: Hypothesis and experimental approach. Med. Hypotheses. 2017;107:92-7. https://doi.org/10.1016/j.mehy.2017.08.015
8. Trzeciak S, Mazzarelli A, Booker C. Compassionomics: The revolutionary scientific evidence that caring makes a difference. Pensacola, FL: Studer Group; 2019.
9. West CP, Huschka MM, Novotny PJ, Sloan JA, Kolars JC, Habermann TM, Shanafelt TD. Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. JAMA. 2006;296(9):1071-8. https://doi.org/ doi:10.1001/jama.296.9.1071
10. Bertakis KD, Azari R. Patient-centered care is associated with decreased health care utilization. JABFM. 2011;24(3):229-39. https://doi.org/10.3122/jabfm.2011.03.100170
11. Chochinov HM. Dignity and the essence of medicine: the A, B, C, and D of dignity conserving care. BMJ. 2007;335(7612):184-7. https://doi.org/10.1136/bmj.39244.650926.47
12. Debets MPM, Jansen, I., Diepeveen, M., Bogerd, R., Molewijk, B.A.C., Widdershoven, G.A.M., Lombarts, M.J.M.H. Compassionate care through the eyes of patients and physicians: an interview study. PLoS One. 2024;19(7): e0305007. https://doi.org/10.1371/journal.pone.0305007
13. Beaudoin C, Maheux B, Cote L, Des Marchais JE, Jean P, Berkson L. Clinical teachers as humanistic caregivers and educators: perceptions of senior clerks and second-year residents. Cmaj. 1998;159(7):765-9.
14. Benbassat J, Baumal R. What is empathy, and how can it be promoted during clinical clerkships? Acad. Med. 2004;79(9):832-9.

15. Carmel S, Glick SM. Compassionate-empathic physicians: personality traits and social-organizational factors that enhance or inhibit this behavior pattern. Soc Sci Med.1996;43(8):1253-61. https://doi.org/10.1016/0277-9536(95)00445-9
16. Sinclair S, Norris JM, McConnell SJ, Chochinov HM, Hack TF, Hagen NA, et al. Compassion: a scoping review of the healthcare literature. BMC Palliat Care. 2016;15:6-22. https://doi.org/10.1186/s12904-016-0080-0
17. Pavlova A, Wang CX, Boggiss AL, O'Callaghan A, Consedine NS. Predictors of physician compassion, empathy, and related constructs: a systematic review. J Gen Intern Med. 2022;1-12. https://doi.org/ 10.1007/s11606-021-07055-2
18. Lombarts KM, Verghese A. Medicine is not gender-neutral—She is male. N Engl J Med. 2022;386:1284-7. https://doi.org/ 10.1056/NEJMms2116556.
19. Sheffield V, Hartley S, Stansfield RB, Mack M, Blackburn S, Vaughn VM, et al. Gendered Expectations: the Impact of Gender, Evaluation Language, and Clinical Setting on Resident Trainee Assessment of Faculty Performance. J Gen Intern Med. 2022;37(4):714-22. https://doi.org/ 10.1007/s11606-021-07093-w
20. Wear D, Zarconi J. Can compassion be taught? Let's ask our students. J Gen Intern Med. 2008;23:948-53. https://doi.org/ 10.1007/s11606-007-0501-0
21. Côté L, Laughrea P-A. Preceptors' Understanding and Use of Role Modeling to Develop the CanMEDS Competencies in Residents. Acad. Med. 2014;89(6):934-9. https://doi.org/ 10.1097/ACM.0000000000000246
22. Wilcox MV, Orlando MS, Rand CS, Record J, Christmas C, Ziegelstein RC, Hanyok LA. Medical students' perceptions of the patient-centredness of the learning environment. Perspect. Med. Educ. 2017;6:44-50. https://doi.org/ 10.1007/s40037-016-0317-x
23. Boerebach BCM, Lombarts KMJMH, Keijzer C, Heineman MJ, Arah OA. The Teacher, the Physician and the Person: How Faculty's Teaching Performance Influences Their Role Modelling. PLoS One. 2012;7(3):e32089. https://doi.org/10.1371/journal.pone.0032089
24. Cruess SR, Cruess RL, Steinert Y. Role modelling—making the most of a powerful teaching strategy. Bmj. 2008;336(7646):718-21. https://doi.org/10.1136/bmj.39503.757847.BE
25. Lombarts KM, Heineman MJ, Arah OA. Good clinical teachers likely to be specialist role models: results from a multicenter cross-sectional survey. PLoS One. 2010;5(12):e15202. https://doi.org/10.1371/journal.pone.0015202
26. Jochemsen-van der Leeuw HR, van Dijk N, van Etten-Jamaludin FS, Wieringa-de Waard M. The attributes of the clinical trainer as a role model: a systematic review. Acad. Med.2013;88(1):26-34. https://doi.org/ 10.1097/ACM.0b013e318276d070
27. Passi V, Johnson S, Peile E, Wright S, Hafferty F, Johnson N. Doctor role modelling in medical education: BEME Guide No. 27. Med. Teach. 2013;35(9):e1422-e36. https://doi.org/10.3109/0142159X.2013.806982
28. Lindberg O. Gender and role models in the education of medical doctors: a qualitative exploration of gendered ways of thinking. Int J Med Educ. 2020;11:31-6. https://doi.org/ 10.5116/ijme.5e08.b95b
29. Shapiro J. How do physicians teach empathy in the primary care setting? Acad. Med.. 2002;77(4):323-8. https://doi.org/ 10.1097/00001888-200204000-00012.
30. Maheux B, Beaudoin C, Berkson L, Côté L, Des Marchais J, Jean P. Medical faculty as humanistic physicians and teachers: the perceptions of students at innovative and traditional medical schools. Med. Educ. 2000;34(8):630-4. https://doi.org/10.1046/j.1365-2923.2000.00543.x
31. Reuler JB, Nardone DA. Role modeling in medical education. West J Med. 1994;160(4):335-7.

32. Association KRDM. Kaderbesluit Centraal College Medische Specialismen. 2009.
33. Lombarts KM, Ferguson A, Hollmann MW, Malling B, Arah OA. Redesign of the system for evaluation of teaching qualities in anesthesiology residency training (SETQ Smart). Anesthesiology. 2016;125(5):1056-65. https://doi.org/10.1097/ALN.0000000000001341
34. Boerebach BCM, Lombarts KMJMH, Arah OA. Confirmatory Factor Analysis of the System for Evaluation of Teaching Qualities (SETQ) in Graduate Medical Training. Eval Health Prof. 2014;39(1):21-32. https://doi.org/10.1177/0163278714552520
35. van der Leeuw R, Lombarts K, Heineman MJ, Arah O. Systematic evaluation of the teaching qualities of Obstetrics and Gynecology faculty: reliability and validity of the SETQ tools. PLoS One. 2011;6(5):e19142. https://doi.org/10.1371/journal.pone.0019142
36. Perito Professional Performance [Platform for evaluating physcians' professional performance]. Available from: https://peritoprofessionalperformance.com/.
37. Debets MPM, Scheepers RA, Boerebach BCM, Arah OA, Lombarts KMJMH. Variability of residents' ratings of faculty's teaching performance measured by five- and seven-point response scales. BMC Med. Educ. 2020;20(1):325-334. https://doi.org/ 10.1186/s12909-020-02244-9.
38. van der Meulen MW, Arah OA, Heeneman S, oude Egbrink MG, van der Vleuten CP, Lombarts KM. When Feedback Backfires: Influences of Negative Discrepancies Between Physicians' Self and Assessors' Scores on Their Subsequent Multisource Feedback Ratings .JCEHP. 2021;41(2):94-103. https://doi.org/ 10.1097/CEH.0000000000000347
39. Lewis JM, Yared K, Heidel RE, Kirkpatrick B, Freeman MB, Daley BJ, et al. Emotional intelligence and burnout related to resident-assessed faculty teaching scores. J. Surg. Educ. 2021;78(6):e100-e11. https://doi.org/10.1016/j.jsurg.2021.09.023
40. Boldaji FT, Amini M, Parvizi MM. Psychometric properties of the Persian version of System for Evaluation of Teaching Qualities by students: A tool for assessing clinical tutors from students' viewpoint. J. Educ. Health. Promot. 2022;11: 92-101. https://doi.org/ 10.4103/jehp.jehp_1622_20
41. Zhou NJ, Kamil RJ, Hillel AT, Tan M, Walsh J, Russell JO, et al. The role of preoperative briefing and postoperative debriefing in surgical education. Journal of surgical education. 2021;78(4):1182-8. https://doi.org/10.1016/j.jsurg.2020.11.001
42. Jochemsen-van der Leeuw HGAR, van Dijk N, van Etten-Jamaludin FS, Wieringa-de Waard M. The Attributes of the Clinical Trainer as a Role Model: A Systematic Review. Acad. Med. 2013;88(1):26-34. https://doi.org/10.1097/ACM.0b013e318276d070
43. Goetz JL, Keltner D, Simon-Thomas E. Compassion: an evolutionary analysis and empirical review. Psychol. Bull. 2010;136(3):351-74. https://doi.org/10.1037/a0018807
44. Gaufberg E, Hodges B. Humanism, compassion and the call to caring. Wiley Online Library; 2016. p. 264-6. https://doi.org/10.1111/medu.12961
45. Bendapudi NM, Berry LL, Frey KA, Parish JT, Rayburn WL, editors. Patients' perspectives on ideal physician behaviors. Mayo Clin Proc. 2006(;81(3):338-344. https://doi.org/10.4065/81.3.338
46. Roter DL, Hall JA. Physician gender and patient-centered communication: a critical review of empirical research. Annu Rev Public Health. 2004;25:497-519. https://doi.org/10.1146/annurev.publhealth.25.101802.123134
47. Hall JA, Gulbrandsen P, Dahl FA. Physician gender, physician patient-centered behavior, and patient satisfaction: A study in three practice settings within a hospital. Patient Educ Couns. 2014;95(3):313-8. https://doi.org/10.1016/j.pec.2014.03.015
48. Bertakis KD, Franks P, Azari R. Effects of physician gender on patient satisfaction. J Am Med Womens Assoc (1972). 2003;58(2):69-75.

49. Eagly AH, Wood W. Social role theory of sex differences. The Wiley Blackwell encyclopedia of gender and sexuality studies. 2016:1-3. https://doi.org/10.1002/9781118663219.wbegss183
50. Arah OA, Heineman MJ, Lombarts KM. Factors influencing residents' evaluations of clinical faculty member teaching qualities and role model status. Med. Educ. 2012;46(4):381-9. https://doi.org/10.1111/j.1365-2923.2011.04176.x
51. Blanch-Hartigan D, Hall JA, Roter DL, Frankel RM. Gender bias in patients' perceptions of patient-centered behaviors. Patient Educ Couns. 2010;80(3):315-20.
52. Lukela JR, Ramakrishnan A, Hadeed N, Del Valle J. When perception is reality: Resident perception of faculty gender parity in a university-based internal medicine residency program. Perspect Med Educ. 2019;8:346-52. https://doi.org/10.1007/s40037-019-00532-9

53. Paulus JK, Switkowski KM, Allison GM, Connors M, Buchsbaum RJ, Freund KM, Blazey-Martin D. Where is the leak in the pipeline? Investigating gender differences in academic promotion at an academic medical centre. Perspect Med Educ. 2016;5:125-8. https://doi.org/ 10.1007/s40037-016-0263-7
54. Cameron RA, Mazer BL, DeLuca JM, Mohile SG, Epstein RM. In search of compassion: a new taxonomy of compassionate physician behaviours. Health Expectations. 2015;18(5):1672-85. https://doi.org/10.1111/hex.12160
55. Baguley SI, Pavlova A, Consedine NS. More than a feeling? What does compassion in healthcare 'look like'to patients? Health Expect. 2022;25(4):1691-702. https://doi.org/10.1111/hex.13512
56. Lown BA. A social neuroscience-informed model for teaching and practising compassion in health care. Med Educ. 2016;50(3):332-42. https://doi.org/10.1111/medu.12926
57. Klein R, Snyder ED, Koch J, Volerman A, Alba-Nguyen S, Julian KA, et al. Analysis of narrative assessments of internal medicine resident performance: are there differences associated with gender or race and ethnicity? BMC Med. Educ. 2024;24(1):1-12. https://doi.org/10.1186/s12909-023-04970-2
58. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: definition, components, measurement, and relationship to gender and specialty. Am. J. Psychiatry. 2002;159(9):1563-9. https://doi.org/10.1176/appi.ajp.159.9.156
59. Lombarts KM, Bucx MJ, Arah OA. Development of a system for the evaluation of the teaching qualities of anesthesiology faculty. Anesthesiology. 2009;111(4):709-16. https://doi.org/ 10.1097/ALN.0b013e3181b76516
60. Capaciteitsorgaan. Capaciteitsplan 2024 tot 2027. Deelrapport 1 Medisch specialismen, klinische technologische specialismen, spoedeisende geneeskunde. Utrecht 2022.
61. Nicolau JL, Mellinas JP, Martín-Fuentes E. The halo effect: A longitudinal approach. Ann. Tour. Res. 2020;83:102938. https://doi.org/10.1016/j.annals.2020.102938
62. Boerebach BCM, Arah OA, Heineman MJ, Lombarts KMJMH. Embracing the Complexity of Valid Assessments of Clinicians' Performance: A Call for In-Depth Examination of Methodological and Statistical Contexts That Affect the Measurement of Change. Acad. Med.2016;91(2):215-20. htttps://doi.org/ 10.1097/ACM.0000000000000840

# APPENDIX I

**EVALUATION OF TEACHING QUALITIES (SETQ) QUESTIONNAIRE**

You fill in the questions by clicking on one answer per question. For most questions, a 7-point scale is used with the following ratings:

1 = strongly disagree
2 = disagree
3 = somewhat disagree
4 = neutral
5 = somewhat agree
6 = agree
7 = strongly agree

During my specialist training, for this supervisor in general, he/she...

**LEARNING CLIMATE (LC)**

LC1 ...encourages residents to participate actively in discussions.
LC2 ...stimulate residents to bring up problems.
LC3 ...motivates residents to further study.
LC4 ...stimulate residents to keep up with the literature.
LC5 ...prepares well for teaching presentations and talks.

**PROFESSIONAL ATTITUDE TOWARDS ASSISTANTS (PA)**

PA1 ...listens attentively to residents.
PA2 ...shows respect towards residents..
PA3 ...is easily approachable during on-calls.
PA4 ...is easily approachable for discussions during routine daytime work.

**LEARNER CENTREDNESS (LCn)**

LCn1 ...clarifies learning goals for the learning session.
LCn2 ...matches residents' and supervisors' learning expectations.
LCn2 ...provides residents with responsibilities based on their abilities.
LCn4...teaches residents how to deal with competing personal/ professional demands.

**EVALUATION OF RESIDENTS' KNOWLEDGE AND SKILLS (E)**

E1 ...evaluates residents' specialty knowledge regularly.
E2 ...evaluates residents' analytical abilities regularly.
E3 ...evaluates residents' applications of knowledge in daily practice regularly.
E4 ...evaluates residents' procedural skills regularly.

**FEEDBACK (FB)**

FB1 ...gives positive feedback to residents.
FB2 ...gives corrective feedback to residents.
FB3 ...explains why residents are (in)correct.
FB4 ...offers suggestions for improvement.

**PROFESSIONAL PRACTICE MANAGEMENT (PP)**

PP1 ...teaches residents how to deal with colleagues (residents and supervisors) with questionable or inappropriate practis
PP2 ...teaches organizational aspects of healthcare.
PP3 ...creates awareness of the economic aspects of medical care.

**SEPARATE ITEMS**

Sm12 ...works adhering to the professional standards.
Sm13a ...demonstrates compassion towards patients and their families.

**ROLE MODEL (RM)**

Faculty members/supervisors can be role models for residents in a number of ways. Can you indicate whether this faculty member/supervisor is a role model for you in the mentioned roles?

During my training, for this attending/supervisor in general, he/she...

RM17 ...is a role model for me as an educator/supervisor.
RM18 ...is a role model for me as a physician.
RM19 ...is a role model for me as a person.

**OVERALL**

Overall, I rate this faculty member for his/her teaching qualities as a score ...
Answer on a 10-point scale.

**Strengths**

Please provide this attending/ supervisor with some feedback comments addressing his/her strengths as a supervisor.

**Areas for Improvement**

Would you please write down a number of improvement points for this supervisor regarding his/her teaching/supervising qualities?

## APPENDIX II

**Sensitivity analyses resident gender.**

Our data provide limited possibilities to correct for resident gender in the context of our current study. In the original non-aggregated dataset we have information on the gender of each resident, albeit that some of this information is missing. As multiple residents evaluate one supervisor, our cleaned dataset is aggregated and this means that each supervisor is evaluated by a mix of male and female residents. The construction of proxy variables for the percentage of male and female evaluations per supervisor is possible, but these kinds of variables are difficult to interpret and their reliability is limited due to the existing missingness in our original data. This is why we chose to conduct descriptive analysis in the original non-aggregated dataset to get an idea of the possible effect of resident gender on our results. The caveat is that we cannot provide any causal information and the data does not allow to draw firm conclusions, so these efforts only allow us to look at the effect of resident gender on our results by eyeballing. In the original dataset, resident gender *only* (slightly) significantly affected the scores that were given on compassionate behavior – female residents scored all supervisors 0.1 higher on this variable than male residents did (please see Table I). Table II presents the scores given to male, female and all supervisors when we split the original dataset in male and female residents. As we were not able to properly control for resident gender in our main analysis, we do not know whether the found differences between male and female supervisors would hold when we would have. Our original data, however, do not provide any clues that resident gender has indeed skewed our findings. Future research is needed to determine the effect of resident gender on the relation between observed compassionate behavior of faculty and them being seen as a role model.

**Table I. Overview of scores provided by female and male residents in original dataset in comparison with reported mean scores in main manuscript.**

| | Mean score based on all included resident evaluations | Mean score given by female residents | Mean score given by male residents |
|---|---|---|---|
| **Compassionate behavior** | M = 6.1 (SD = 0.6) | M = 6.1 (SD = 1.0) | M = 6.0 (SD = 1.0) |
| **Teacher role model** | M = 5.7 (SD = 0.9) | M = 5.7, (SD = 1.3) | M = 5.7 (SD = 1.3) |
| **Physician role model** | M = 5.9 (SD = 0.7) | M = 5.9 (SD = 1.1) | M = 5.9 (SD = 1.1) |
| **Person role model** | M = 5.7 (SD = 0.8) | M = 5.7 (SD = 1.2) | M = 5.7 (SD = 1.2) |

*Female residents score all supervisors significantly 0.1 higher on compassionate behavior (independent samples t-test: p<0.001).*

**Table II. Scores given to male and female faculty grouped by all, male and female residents in original dataset (before aggregation).**

| | Female faculty | Male faculty | Female faculty (scored by female residents) | Male faculty (scored by female residents) | Female faculty (scored by male residents) | Female faculty (scored by male residents) |
|---|---|---|---|---|---|---|
| **Compassionate behavior** | M = 6.2 | M = 5.9 | M = 6.2 | M = 6.0 | M = 6.2 | M = 5.9 |
| **Teacher role model** | M = 5.8 | M = 5.7 | M = 5.7 | M = 5.7 | M = 5.8 | M = 5.7 |
| **Physician role model** | M = 6.0 | M = 5.9 | M = 6.0 | M = 5.9 | M = 5.9 | M = 5.9 |
| **Person role model** | M = 5.8 | M = 5.6 | M = 5.8 | M = 5.6 | M = 5.8 | M = 5.7 |

*Although some small variants appear in some of the scores when grouping by resident gender, the overall pattern remains unchanged.*

# APPENDIX III

**Categorization of specialty programs**

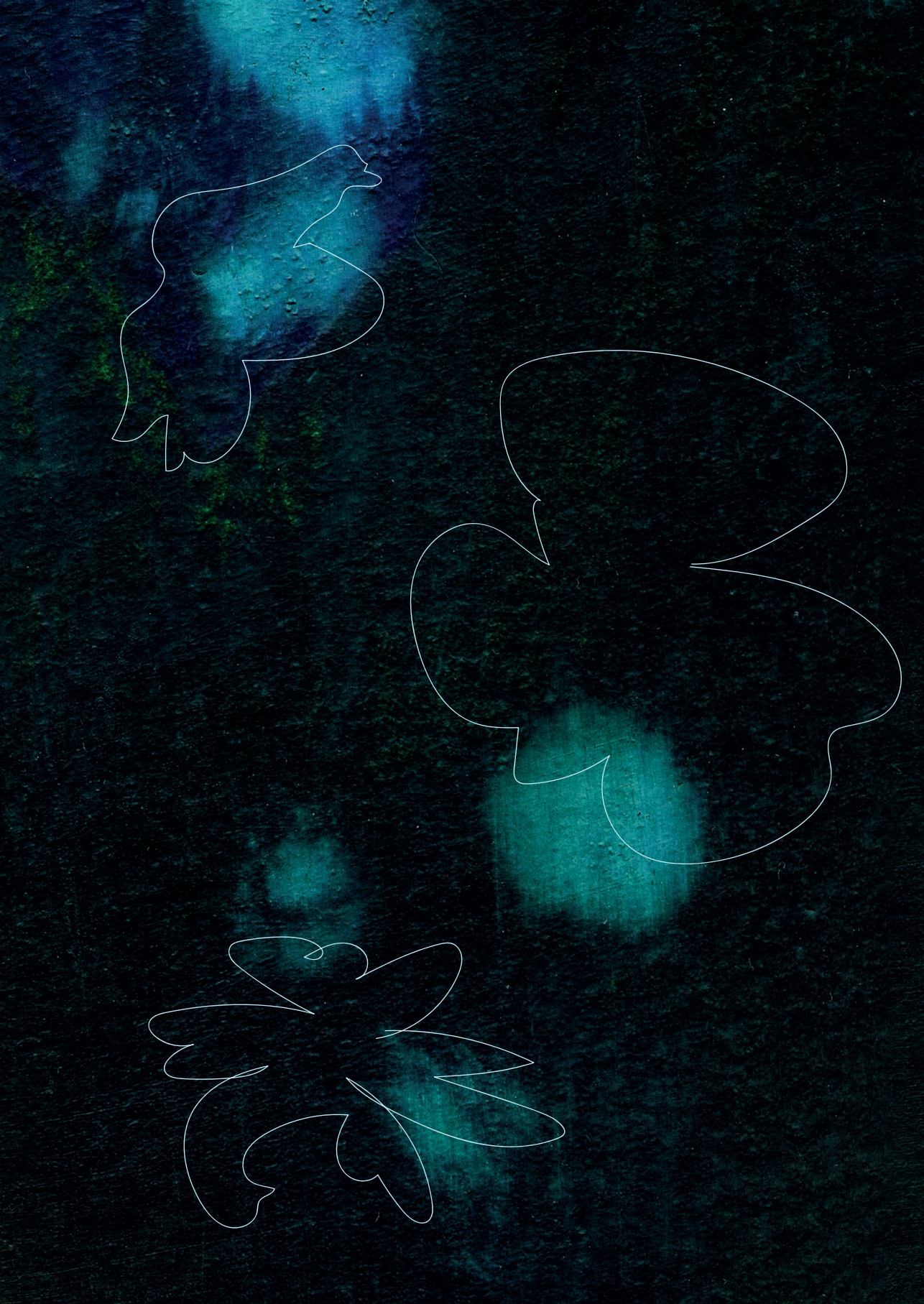
| **Medical** | **Non-medical** |
|---|---|
| Internal medicine | Medical Psychology |
| Cardiology | Pharmacy |
| Pediatrics | Clinical Physics |
| Pulmonary diseases | Clinical Chemistry |
| Gastrointestinal and liver diseases | Mental Health |
| Neurology | Medical Microbiology and Immunology |
| Rehabilitation medicine | Sexology |
| Psychiatry | Special Dentistry |
| Emergency care | Clinical Neurophysiology |
| Dermatology | Dentistry |
| Intensive care | **Surgical** |
| ICL | Surgery |
| General practitioners | Gynecology |
| Nursing home physicians | ENT |
| Sports medicine | Neurosurgery |
| Clinical geriatrics | Plastic surgery |
| Rheumatology | Ophthalmology |
| Allergology | Orthopedics |
| **Supporting** | Urology |
| Anesthesiology | Oral surgery |
| Clinical Genetics | Cardio-thoracic surgery |
| Pathology | |
| Radiology | |
| Radiotherapy | |

# APPENDIX IIII

**Multivariate GLM Summary**

**Table 4. Multivariate general linear model for teacher, physician and person role model.**

| | df | F | *p* | Partial $\eta^2$ |
|---|---|---|---|---|
| **Teacher role model** | | | | |
| Compassionate behavior | 1 | 1009.93 | <0.001 | 0.315 |
| Faculty gender | 1 | 8.08 | 0.005 | 0.004 |
| Compassionate behavior x faculty gender | 1 | 10.36 | 0.001 | 0.005 |
| **Physician role model** | | | | |
| Compassionate behavior | 1 | 1274.51 | <0.001 | 0.368 |
| Faculty gender | 1 | 6.61 | 0.010 | 0.003 |
| Compassionate behavior x faculty gender | 1 | 8.35 | 0.004 | 0.004 |
| **Person role model** | | | | |
| Compassionate behavior | 1 | 1361.55 | <0.001 | 0.383 |
| Faculty gender | 1 | 5.60 | 0.018 | 0.003 |
| Compassionate behavior x faculty gender | 1 | 6.06 | 0.014 | 0.003 |



# Chapter 5

## Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees

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*Academic Medicine. 2024:10.1097.*

**ABSTRACT**

**Purpose**

Cultures of wellness, defined as shared norms, values attitudes, and behaviors that promote personal and professional growth and well-being, are robust determinants of professional fulfillment and professional performance. A major and largely overlooked aspect of a culture of wellness in medicine is residents' perceived appreciation or experience of feeling valued. Considering the pressing workforce and retention challenges that residency programs face, this study addressed the following research questions: How does appreciation at work manifest in the eyes of residents and how do residents perceive appreciation in relation to their professional fulfillment and performance?

**Methods**

Guided by an interpretative phenomenological approach, this qualitative study purposively sampled 12 residents from different specialties, training years, regions in the Netherlands, and genders. Residents' individual experiences with appreciation at work were explored in semistructured interviews conducted between October 2022 and March 2023. Thematic analysis was used for data analysis.

**Results**

Residents perceived appreciation as "being seen and heard" and further described how appreciation at work manifested using 3 narratives. As learners, residents felt appreciated

when their competencies were acknowledged and supervisors created room for individual growth. As physicians or colleagues, residents felt appreciated when they experienced meaningful patient contact, high levels of collegiality, and self-appreciation through successes at work. As employees, residents felt appreciated when their (extra) efforts were noticed, they were properly facilitated in their work and training, and their well-being was prioritized. Residents said that receiving appreciation boosted their mental health, self-confidence, professional commitment, and professional fulfillment, thereby benefiting their performance and the quality of patient care they deliver.

**Conclusions**

Appreciation at work is important for residents and manifests itself within the narratives of learner, physician or colleague, and employee. Which narrative is foregrounded depends on context, but regardless feeling "seen and heard" at work is crucial for residents' fulfillment and performance.

## INTRODUCTION

Professional fulfillment is gaining recognition in the medical world. Professionally fulfilled physicians experience happiness, meaningfulness, self-worth, self-efficacy, and satisfaction at work.(1, 2) Studies further show that professionally fulfilled medical residents may be partially protected against burnout(3, 4), express intentions to leave the medical profession less often,[4] and report fewer medical errors.(5, 6) These findings explain the increasing interest in cultures of wellness because they are robust determinants of professional fulfillment and professional performance.(7, 8) Culture of wellness can be defined as a set of shared norms, values, attitudes, and behaviors that promote personal and professional growth as well as physician well-being.(1, 7, 8)

A major and largely overlooked aspect of such a culture of wellness is residents' perceived appreciation or their experience of feeling valued.(9, 10) Adler and Fagley(11) define appreciation as acknowledging the value and meaning of something (or someone) and feeling a positive emotional connection to it. They argue that appreciation plays an important role in psychological well-being and building social bonds. Furthermore, feeling appreciated at work effectively promotes physicians' professional fulfillment and professional performance through stimulating intrinsic motivation, feelings of meaningfulness, work engagement, organizational commitment, and self-confidence.(9, 10, 12-19)

The status quo of appreciation in postgraduate medical education (PGME) is mostly unknown, but there are signs that residents do not receive enough appreciation.(20-22) A U.S. study, for example, found that 19.2% of the residents and staff of a family medicine department seriously considered leaving the institution because they did not feel appreciated.(20) There is some knowledge of means to make health care

workers feel appreciated (e.g., giving a compliment or meaningful reward and providing special services, such as free parking).(9, 10, 13)

However, it is unknown how residents experience these expressions of appreciation in the workplace. Because residents are in the unique position of being both fully part of the health care team and still in training, their experiences may differ from those of faculty. Hence, an in-depth exploration of how appreciation at work manifests in the eyes of residents is needed as well as how the underlying mechanisms between appreciation and professional fulfillment and performance work for them.

In light of the pressing workforce and retention challenges that residency programs face(23, 24), this qualitative interview study aims to answer the following research questions: How does appreciation at work manifest in the eyes of residents? and How do residents perceive appreciation in relation to their professional fulfillment and performance? Ultimately, this study aims to offer starting points for fostering cultures of wellness in PGME to contribute to a professionally fulfilled, sustainable, and high-performing medical workforce.



## METHOD

### Study design

This qualitative study follows an interpretative phenomenological approach (IPA)(25), which studies phenomena or participants' experiences in depth as processes situated in an individual's so-called lifeworld.(25-27) This approach fits the study aim because it allows for a better understanding of the manifestation of appreciation in the context of residents' work and learning environment.

In the epistemologic stance of IPA, there is no such thing as an absolute truth and knowledge is always subjective.(28) Understanding and meaning must be sought through

the interpretations of the experiences of individuals.(25) In-depth, semistructured interviews are one way of unravelling these experiences, and the researchers' reflexivity is crucial during the interpretation of the data.(29) Within the team, similarities and differences in interpretations of the data are frequently discussed (see Supplemental Digital Appendix 1 for more detailed reflexivity).

Our study group consisted of the lead author (R.B.), who has a background in philosophy (bioethics) and public administration, 2 experts in the field of medical education and professional performance and qualitative research methods, with disciplinary backgrounds in health sciences (M.E.W.M.S.) and health care policy and management (K.M.J.M.H.L.), and a senior cardiologist and clinical researcher (J.P.S.H.). The institutional ethical review board of the Amsterdam University Medical Center of the University of Amsterdam provided a waiver declaring the Medical Research Involving Human Subjects Act did not apply to the current study. At the start of the interviews, residents were informed about anonymization of the data, and written consent was obtained.

**Setting and participants**

This study was conducted among residents from various specialties in the Netherlands. Residency training in the Netherlands takes 3 to 6 years, during which residents rotate in both academic and nonacademic teaching hospitals. During their training, residents are part of the health care team and supervised by a group of faculty who guide them toward independent practice. Dutch training programs are competitive (as are many residency programs in other health care contexts), and the medical culture is known to cause residents to consider leaving their training.(30, 31)

We purposively sampled residents to guarantee a heterogeneous participant group in terms of medical specialty, year of training, training region, and gender. On the basis of previous research(9, 20, 32) and discussions within our team, we hypothesized a potential influence of these criteria on the manifestations of appreciation at work (e.g., some specialty groups may have more open professional cultures than others, stimulating colleagues to express their feelings of appreciation to one another). Residents were approached and invited via professional and personal networks and snowballing strategies. Interested participants received a digital letter informing them about the background, purpose of the study, and practical details. Of the 18 volunteers, 12 (4 men and 8 women) were interviewed by 1 researcher (R.B.). We reached the criterion of sufficiency with regard to analytical rigor and data richness(33) after we completed our analysis of those 12 transcripts. The remaining volunteers had similar characteristics to those of previously included participants and were therefore excluded.



**Interviews and data collection**

The research team constructed an open-ended topic guide for the semistructured interviews, informed by relevant literature, thorough group discussions, and the experiences of individual team members. The initial topic guide followed three leading questions inquiring about (i) a positive experience with appreciation, (ii) the meaning of appreciation and (iii) its perceived impact on work. These main questions were preceded by an associative icebreaker exercise. (see Supplemental Digital Appendix 2)

We held a pilot interview (R.B.), which was transcribed verbatim and discussed with the 2 experienced qualitative researchers (M.E.W.M.S., K.M.J.M.H.L.); the data were deemed relevant, rich, and valuable and were therefore included in the final data collection. Minor adaptations were made to the topic guide throughout the data collection

(see Supplemental Digital Appendix 2) The interviews were held between October 2022 and March 2023. The interviews lasted between 45 and 60 minutes and took place at a location preferred by the interviewee. All interviews were audio-recorded, transcribed verbatim, and anonymized before data analysis.

**Data analysis**

To analyze the data, we followed an inductive and iterative IPA approach(27), which eventually enabled us to perform thematic analysis. R.B. closely engaged with the first 4 interviews, read them line by line, and openly coded all of them, trying to identify insights that were significant and interesting within the participant's lifeworld. M.E.W.M.S. and K.M.J.M.H.L. both openly coded 1 of these 4 transcripts. Double-coded interviews were discussed within the team, striving for intersubjectivity with an awareness of creating knowledge based on a shared understanding between the members of the research team.(34) On the basis of these discussions, R.B. coded 3 more interviews and created a preliminary coding scheme with themes that emerged from the data. Using this initial template, researchers R.B., M.E.W.M.S., and K.M.J.M.H.L. double-coded 2 more interviews. After comparison and discussion, the team decided which core elements to include in the template and iteratively refined the structure of the template based on additional reading and coding of 5 more interviews. This stage is called the analytical or theoretical ordering stage in IPA, during which research themes are clustered together and superordinate concepts may emerge.(27) Subsequently, R.B. and M.E.W.M.S. separately applied the new template to one new transcript, discussed their coded transcripts, and finalized the template (see Supplemental Digital Appendix 3) which was then, following

thematic analysis, applied to all 12 transcripts using MAXQDA Analytics Pro 2022, release 22.0.1 (VERBI GmbH, Berlin, Germany). The inductive, iterative analysis performed by our multidisciplinary research team, together with the conversational quality and length of our in-depth interviews, reassured us that our study findings reached sufficiency with regard to analytical rigor and data richness.(33)

## RESULTS

**Table 1** provides an overview of the study sample. Findings are presented in 3 sections: a reporting on the nature of appreciation followed by 2 sections answering the 2 research questions.



**Table 1. Demographic characteristics of resident participants, Netherlands, 2023.**

| Demographic characteristic(s) | No. (%) |
|---|---|
| **Number of residents participated** | 12 (100%) |
| **Sex** | |
| Male | 4 (33.3%) |
| Female | 8 (66.6%) |
| **Type of institution** | |
| Academic hospital | 6 (50%) |
| Non-academic hospital | 6 (50%) |
| **Training year** | |
| Junior (1-3) | 7 (58.3%) |
| Senior (4-6) | 5 (41.7%) |

*N.B. Residents came from various hospitals and various regions in the Netherlands and represented the following specialties: internal medicine, orthopedic surgery, dermatology, radiology, psychiatry, neurology, sports medicine, gynecology, cardiology, cardiothoracic surgery and gastroenterology.*

**The nature of appreciation at work**

Residents described appreciation as being seen and heard as a unique person by everyone they encounter in work, such as supervisors, peers, and patients. Two commonalities were found in how residents reflected on the nature of appreciation. First, residents assigned more weight to being appreciated for something they highly valued themselves. For example, one resident (R) explained that receiving appreciation for skills that came naturally, such as communicating with patients, made less of an impact: "I find it more enjoyable to receive appreciation for something that I am not as good at but have developed, a particular skill" (R8). Second, residents reported a more intense emotional experience of appreciation when appreciation was expressed at an unexpected moment. One resident mentioned that this surprise effect was what boosted the feeling of being appreciated: "that one patient who said how happy she was with the way you treated her. For me, that is, well, those unexpected compliments or acknowledgement…That touches me more" (R6).

**Manifestations of appreciation within different narratives**

Residents narrated their experiences with appreciation at work coming from different narratives, namely, learner, physician or colleague, or employee. The dominant narrative was dependent on personal preferences and characteristics, year of education, medical specialty, previous experiences, and other contextual factors.

**The learner**

As learners, residents felt appreciated at work when their competencies were implicitly or explicitly acknowledged by medical faculty. Implicit acknowledgment included gaining more responsibilities and independency. For example, one resident described a situation

in which the surgical staff briefly stepped out of a 12- to 14-hour operation to eat something, leaving the resident in charge, which made them experience a sense of trust and appreciation. Residents also felt appreciated when the health care team agreed on their treatment plans or allowed them to "bring in your perspective on the health care system and on what good patient care looks like" (R11)

Explicit acknowledgement of competencies through compliments was one of the first things mentioned when residents shared their experiences with appreciation. One resident said that supervisors often stress that "not hearing anything is a good thing," but "residents rather hear that they are doing well" (R8). Another resident noted that only 3 words, such as "wow, well done" (R2) could suffice.

As a learner, residents also felt appreciated when their individual growth and development were seen, respected, and taken care of. Appreciation occurred, for example, when supervisors intentionally created learning opportunities for residents, provided improvement feedback, and paid attention to residents' future career perspectives.

> He [the supervisor] called me, asking: 'would you like to report this MRI-scan? I think it will float your boat'. That feels like appreciation; that he allows me to do something difficult and is willing to explain it to me, even though he knows it will cost him time. (R4)

A final theme within this narrative was the culture within postPGME. Residents, for example, mentioned the hierarchical and conservative culture within their departments as hampering appreciation, referring to rude or disproportionately angry supervisors, situations where residents were held responsible for tasks that were not theirs, and instances when residents were not listened to only because they were still trainees. Once faculty really started to get to know the resident and worked together with them for a longer period, this maltreatment occurred less frequently, as if the resident first needed

to earn their spot within the department: "I noticed that when he found out I was a senior resident, he respected my opinion more" (R1).

**The physician or colleague**

As physicians or colleagues, residents felt appreciated when they were able to contribute to patients' quality of life and experienced meaningfulness in patient interactions. One resident described how feeling appreciated by a former patient, who was known as a difficult man but with whom they managed to build a trustful relationship with, would always stick with them:

> Two weeks later he came to have a drain removed…and he said: 'Doctor X!' and gave me a huge hug.…And then I thought: wow, apparently, it is my job, but still, apparently, I meant so much to him in a difficult period.…And that, yeah, still brings tears to my eyes. (R4)

Another important theme within this narrative was collegiality, which some described as the foundation of their job. To residents, collegiality could mean a myriad of things, such as creating an open atmosphere within a close team, pleasant ways of communicating with each other, being supportive and understanding towards each other, "taking one for the team," making little gestures of appreciation (e.g., bringing a treat when leaving an internship), and, finally, being seen for who you are as a person: "That you pat someone on the back [when things are tough]. Or when there are private issues…So, as a resident group, we look out for each other in many different ways" (R3).

Finally, residents experienced self-appreciation from successes at work, such as when proposed treatment plans succeeded, a complicated case was well diagnosed, the day went smoothly partly because of a resident's individual efforts, or when a resident experienced pleasant collaborations with colleagues that, as an obstetrics-gynecology

resident stated, “resulted in being able to do certain interventions together to make sure that her baby was born in a right way”(R8). These kinds of successes often resulted in residents feeling proud and experiencing self-appreciation.

**The employee**

As employees, residents experienced appreciation when their (extra) efforts, such as facilitating education, were noticed, acknowledged and rewarded. Likewise, for residents it was important that the staff acknowledged the high work pressure at times, how hard residents worked, and that they often “bent over backwards” (R3). As another resident stated, “Apart from patient care I am in the education-committee….I put a lot of time into that, but residents and staff tell me…that they really enjoy it. In that way, you also feel appreciated” (R4).



In addition, residents felt appreciated as employees when they were properly facilitated in both their work and training (e.g., that there is dedicated time scheduled for education and training and receiving proper employment terms and conditions, such as facilitated childcare at work). Residents also experienced appreciation when working in supportive work environments, both physical, such as modern ward rooms, and organizational by “having sufficient people and time, practical stuff, that you don’t need to walk to a different building for a printer or keys, you know,…so that you can do your job” (R6).

A final theme within the narrative of employees was whether and how the organization cared about and for residents’ well-being. Residents felt appreciated when their well-being was prioritized, for example, when the department had normalized working part time, residents’ work-life balance was respected, and the department was flexible and understanding of residents dealing with personal health issues:

> One of three organizational pillars is: taking care of healthcare professionals.…By investing in me, the organization shows that for them it is important that I can develop myself, that I am doing well, and that I am worth their investment. (R11)

**The effect of appreciation**

We found that the effect of appreciation at work on residents can be categorized into 4 subthemes. First, residents mentioned that appreciation at work affected their mental health: it relieved their stress levels, made them feel more comfortable in their own skin, and led them to experience a sense of ease, which prevented them from taking on workloads at the cost of their own health. As one resident said, "I think that you experience less stress in all areas of the workplace, if you feel appreciated" (R1). Feeling appreciated furthermore stimulated the experienced balance between energy demands and energy resources at work, which, as one resident explained, helped in maintaining enough energy to keep going.

Second, residents mentioned that appreciation could be the start of an upward spiral toward becoming a self-confident and committed professional. Receiving appreciation made residents feel more confident and prouder of themselves. When feeling valued, they felt more energized, motivated, and committed to their job and more willing to go the extra mile. All of this reflected on their patients as well as their colleagues, which in turn further fueled their self-confidence and commitment as "the more you feel appreciated, the more you are strengthened in what you're already doing" (R1). In contrast, when lacking appreciation, residents mentioned that they experienced uncertainty and (self-)doubt. Instead of being able to practice mindfully, they would constantly doubt themselves whether they were doing the right thing. This downward

spiral resulted in them experiencing a sense of dread, questioning why they are doing their jobs when they were not appreciated.

Third, the effect of appreciation on professional fulfillment was largely underpinned by residents' experience of meaningfulness (being able to contribute and help others). These experiences were often told within the narrative of the physician or colleague. Residents mentioned that the gratefulness of patients affirmed that they were indeed able to help, which led to a feeling of fulfillment because helping patients was mentioned as their main driver for becoming a physician in the first place. Sometimes, recognition by their supervisors, for example, when residents came to the correct diagnosis in a very complex case, would also trigger feelings of professional fulfillment because residents felt that they were able to contribute to the care of a patient: "When you feel appreciated, get compliments and are being seen, well,…then work is a party. Imagine you are not helping anyone; to me, that would be a very unsatisfying job" (R4).



Fourth, building on the (combined) experienced effects of increased mental health and becoming a more self-confident, committed, and fulfilled professional, residents phrased how this would ultimately affect their professional performance and the provision of high-quality care. Residents were able to work more efficiently because they experienced less doubt and needed to consult their supervisors less frequently. A higher level of self-confidence also facilitated more creativity and outside-the-box thinking, as well as more honest and open discussions about, for example, the right treatment plan for a patient. Self-confident residents, as they said, dared to do their part and were able to communicate more clearly to their patients. Additionally, expressing appreciation to and receiving appreciation from colleagues improved collaborations and could thereby affect the quality of care provided by the team. More specifically, when residents felt appreciated for their technical medical skills, they were able to really listen to their

patients and offer compassionate care. One resident mentioned that "when you are more at ease like that, you are able to separate what really matters, medically, from less important aspects" (R3). Another resident added that they once miscalculated the severeness of a situation "just because the patient was whining" (R5) and that being appreciated by patients increased their objectivity.

The opposite feeling could also affect residents' performance. Some participants talked about how a lack of appreciation from their supervisors created a barrier for them to call or consult the supervisors, potentially hampering treatment processes. Another resident noted how lack of appreciation could eventually result in defensive medicine and thus overtreatment and increasing health care costs because of an increase in residents' insecurity and inability to make decisions.

**Discussion**

In line with our aim of contributing to a professionally fulfilled, sustainable, and high-performing resident population, we have identified starting points for fostering cultures of wellness in PGME. Our study seems to resonate with Shanafelt's observation that physicians today strive for a single identity that encompasses personal, human, and professional dimensions.(35) The personal dimension includes physicians' private lives, and the human dimension refers to physicians being fallible people instead of infallible heroes.(35) In their article Physician Work-Life Integration: Challenges and Strategies for Improvement, Karakash et al.(36) argue that mentorship could be used to help professionals develop within all 3 domains. Our findings show that it is indeed important for residents to bring their unique and whole person, including their personal values (e.g., being seen for who they are as a person and having their work-life balance respected) and human qualities and limitations (e.g., the department prioritizing well-being and being

understanding of residents dealing with private issues) to the workplace. They want to feel equally appreciated for what they do and for who they are. In addition to mentorship programs, we therefore suggest that appreciation from others within all 3 domains (professional, personal, and human) may be a less formalized but fruitful way to help residents flourish at work.

This study also underpinned the importance of collegiality for residents. The importance of collegiality in relation to feelings of social support and a sense of community at work has previously been established(13, 15, 37, 38), including its potential effect on fulfillment and performance.(39) This study adds that it is often during personal interactions with colleagues that residents experience a feeling of appreciation. Again, our findings stress the significance of uniqueness in those interactions. Interest in residents' private life and expressions such as "How nice to see you today!" make residents feel seen. Our study therefore suggests that investing in collegiality, and thus appreciation, may be an effective strategy for building a culture of wellness.



Finally, this study points to the importance of obstructive social norms and misbehavior in PGME.(40, 41) Our findings regarding maltreatment, such as supervisors' disproportional anger and rude behavior toward residents and disrespecting residents based on the supervisors' hierarchical position, are serious and were confirmed in a recent national survey in the Netherlands among 6,569 clerks, resident physicians, and staff.(36) More than half of the respondents in the previous study(36) reported that they had experienced inappropriate behavior in the work context. Additionally, the social norm revealed in our study that in performance evaluations "no news is good news" illustrates suboptimal professional communication styles. In their recent study on role modeling, Pope et al.(42) stressed residents' desire for more performance improvement feedback and showed how providing feedback was considered a strength of high-

performing supervisors. Because our study and previous research showed that feeling valued by one's supervisor is important for residents' performance(17) and a lack of appreciation may even jeopardize the quality of care in the long run(40, 41), the mentioned aspects of the medical culture in PGME need to be addressed. In line with literature on trust relationships in the health care workplace, focusing on appreciation, which can also be understood as an indicator of trust, may be a strong motivator and at the same time a protective strategy against (the effect of) forms of misconduct.(11, 43)

**Implications for practice and research**

First, this study raises awareness about the importance of appreciation at work for residents and how it may contribute to alleviating the current well-being and retention crisis in PGME.(23, 24) The insights presented in this study may be used to reflect on existing national and organizational recognition and reward initiatives. Second, PGME programs could use those insights to develop a support tool or training for faculty. Such a tool or training could be aimed at creating awareness of the different narratives in which appreciation is experienced and how it may affect residents' well-being and performance, revealing which norms and behaviors may hamper the experience of appreciation and teaching strategies to initiate conversations about residents' personal values.(44) Third, in cross-disciplinary workshops, for example, residents could learn about identifying their personal values and share their experiences with appreciation in a group, which may help them find ways to take leadership in crafting their residency training in a way that is fulfilling to them.(45-47)

Future quantitative research could be aimed at testing whether the found narratives and revealed mechanisms underlying the relationship of appreciation with fulfillment and performance hold in larger samples. It would be interesting to see whether one of the

narratives is more prevalent in certain groups (based on gender, specialty, or year of education). In general, our findings showed that the human experience of appreciation affects all kinds of interactions among individuals. The topic therefore invites discussion about associations with and research into many closely related themes, ranging from psychological safety and feedback procedures to reflections on shifts in the medical profession (e.g., the notion that the strong emphasis on altruism in the medical profession slightly seems to vanish(48)).

**Strengths and limitations**

The IPA facilitated a clear understanding of the variety of manifestations of appreciation at work for residents and how appreciation affects their professional fulfillment and performance. Because the stories of the participants were leading in the interviews, we were able to stick to their lifeworlds.(25, 49) Not only did this increase the confirmability of our findings(50) but also by seeing the phenomenon of appreciation in the specific contexts of the interviewees(25, 49) we found that its manifestation varied depending on the different narratives of learner, physician or colleague, and employee. Adopting the idea of different narratives helped us to better understand the phenomenon of appreciation in PGME.

Given our heterogeneous sample, we believe our findings are relevant for residents in Dutch hospital–based training programs and likely for PGME programs in other Western health care settings. However, the transferability to settings other than those may be limited.(50) Although representative for our study population(51), the inclusion of fewer male than female residents may have biased our findings. Lastly, our sampling strategy enabled us to guarantee a heterogeneous sample but may have resulted in a selection bias. Residents with a strong interest in the topic of appreciation (e.g., because

they experience a lack of appreciation at work) may have been more eager to participate.(52)

**Conclusions**

Appreciation, a feeling of being seen and heard as a unique person, remains crucial for residents' mental well-being, although it manifests differently within the narrative of learner, physician or colleague, and employee. Appreciation may fuel an upward spiral for residents to becoming a self-confident and committed professional and stimulate their professional fulfillment, ultimately enhancing the quality of care.

**REFERENCES**


1. Bohman B, Dyrbye L, Sinsky CA, Linzer M, Olson K, Babbott S, et al. Physician well-being: the reciprocity of practice efficiency, culture of wellness, and personal resilience. NEJM Catalyst. 2017;3(4).
2. Trockel M, Bohman B, Lesure E, Hamidi MS, Welle D, Roberts L, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. Academic Psychiatry. 2018;42(1):11-24.
3. Ratcliffe TA, Jasti H, Ortiz J, Curren C, Onumah C, Ripp J, et al. Finding Meaning: Internal Medicine Clerkship Director Burnout and Professional Fulfillment. The American journal of medicine. 2022;135(5):654-60. e3.
4. Higgins MC, Siddiqui AA, Kosowsky T, Unan L, Mete M, Rowe S, et al. Burnout, Professional Fulfillment, Intention to Leave, and Sleep-Related Impairment among Radiology Trainees across the United States (US): A Multisite Epidemiologic Study. Academic Radiology. 2022;29:S118-S25.
5. Menon NK, Shanafelt TD, Sinsky CA, Linzer M, Carlasare L, Brady KJS, et al. Association of Physician Burnout With Suicidal Ideation and Medical Errors. JAMA Network Open. 2020;3(12):e2028780-e.
6. Mendelsohn D. Self in medicine: Determinants of physician well-being and future directions in improving wellness. Medical Education. 2022;56(1):48-55.
7. Menon NK, Trockel M. Creating a Culture of Wellness. The Art and Science of Physician Wellbeing: Springer; 2019. p. 19-32.
8. Bingemann TA, Laubach S. Physician well-being in allergy and immunology: Creating a culture of wellness. Annals of Allergy, Asthma & Immunology. 2021;126(3):219-27.
9. Nadkarni A, Harry E, Rozenblum R, Kimberly HH, Schissel SL, DeOliveira MC, et al. Understanding perceived appreciation to create a culture of wellness. Academic Psychiatry. 2022;46(2):228-32.
10. Schrijver I, Brady KJ, Trockel M. An exploration of key issues and potential solutions that impact physician wellbeing and professional fulfillment at an academic center. PeerJ. 2016;4:e1783.
11. Adler MG, Fagley NS. Appreciation: Individual differences in finding value and meaning as a unique predictor of subjective well-being. Journal of personality. 2005;73(1):79-114.
12. Jyothindran R, d'Etienne JP, Marcum K, Tijerina A, Graca C, Knowles H, et al. Fulfillment, burnout and resilience in emergency medicine—Correlations and effects on patient and provider outcomes. PloS one. 2020;15(10):e0240934.
13. Olson K, Marchalik D, Farley H, Dean SM, Lawrence EC, Hamidi MS, et al. Organizational strategies to reduce physician burnout and improve professional fulfillment. Current problems in pediatric and adolescent health care. 2019;49(12):100664.
14. Brun J-P, Dugas N. An analysis of employee recognition: Perspectives on human resources practices. The International Journal of Human Resource Management. 2008;19(4):716-30.
15. Abdullah N, Shonubi OA, Hashim R, Hamid N. Recognition and appreciation and its psychological effect on job satisfaction and performance in a Malaysia IT company: Systematic review. IOSR Journal of Humanities and Social Science. 2016;21(9):47-55.

16. White P. Improving staff morale through authentic appreciation. Development and Learning in Organizations: An International Journal. 2014;28(5):17-20.
17. Scanlan GM, Cleland J, Walker K, Johnston P. Does perceived organisational support influence career intentions? The qualitative stories shared by UK early career doctors. BMJ open. 2018;8(6):e022833.
18. Wåhlin I, Ek A-C, Idvall E. Staff empowerment in intensive care: Nurses' and physicians' lived experiences. Intensive and Critical Care Nursing. 2010;26(5):262-9.
19. Brown S, Gunderman RB. Viewpoint:: Enhancing the Professional Fulfillment of Physicians. Academic Medicine. 2006;81(6):577-82.
20. Riley T, Radico J, Parascando J, Berg A, Oser T. Challenges in effective faculty and provider recognition to enhance engagement. Family medicine. 2022;54(6):461-5.
21. Simpkin AL, Chang Y, Yu L, Campbell EG, Armstrong K, Walensky RP. Assessment of job satisfaction and feeling valued in academic medicine. JAMA Internal Medicine. 2019;179(7):992-4.
22. Rutherford K, Oda J. Family medicine residency training and burnout: a qualitative study. Can Med Educ J. 2014;5(1):e13-23.
23. Kaplan GS, Meier CA, Zimlichman E, Kahn III CN, Salzberg CA. Designing the Health Care Workforce of the Future. NEJM Catalyst Innovations in Care Delivery. 2022;3(6).
24. Ripp JA, Privitera MR, West CP, Leiter R, Logio L, Shapiro J, et al. Well-being in graduate medical education: a call for action. Academic Medicine. 2017;92(7):914-7.
25. Neubauer BE, Witkop CT, Varpio L. How phenomenology can help us learn from the experiences of others. Perspectives on medical education. 2019;8(2):90-7.
26. Heidegger M. Heidegger, Being and Time. Publisher; 1962.
27. Smith JAaO, M. Interpretative Phenomenological Analysis. In: Smith JA, editor. Qualitative Psychology: A Practical Guide to Research Methods. London: Sage; 2008.
28. Wojnar DM, Swanson KM. Phenomenology: an exploration. Journal of holistic nursing. 2007;25(3):172-80.
29. Cristancho SM, Goldszmidt M, Lingard L, Watling C. Qualitative research essentials for medical education. Singapore Med J. 2018;59(12):622-7.
30. Teunissen PW. Unravelling learning by doing. A study of workplace learning in postgraduate medical education [dissertation]. Amsterdam, Netherlands: VU University Amsterdam: s.n.; 2009.
31. Korsten L, Verbeek, B., Ploeg, E. van der, Kok, L., Bos, M., Girbes, A. . Nationale a(n)ios-enquête 2022. Gezond en veilig werken. . Utrecht: De Jonge Specialist; 2022.
32. Simone Paauw EK. Enquête: Grensoverschrijdend gedrag ligt vooral in het ziekenhuis op de loer. Medisch Contact. 2023.
33. LaDonna KA, Artino Jr AR, Balmer DF. Beyond the guise of saturation: rigor and qualitative interview data. The Accreditation Council for Graduate Medical Education; 2021. p. 607-11.
34. Olmos-Vega FM, Dolmans DH, Guzmán-Quintero C, Stalmeijer RE, Teunissen PW. Unravelling residents' and supervisors' workplace interactions: an intersubjectivity study. Medical Education. 2018;52(7):725-35.
35. Shanafelt TD. Physician Well-being 2.0: Where Are We and Where Are We Going? Mayo Clinic Proceedings. 2021;96(10):2682-93.
36. Karakash S, Solone M, Chavez J, Shanafelt T. Physician Work-Life Integration: Challenges and Strategies for Improvement. Clinical Obstetrics and Gynecology. 2019;6
van den Berg JW, Verberg CP, Scherpbier AJ, Jaarsma ADC, Lombarts KM. Is being a medical educator a lonely business? The essence of social support. Medical education. 2017;51(3):302-15.

37. Casey VF, Schenk JL. Building a Culture of Wellness in an Orthopaedic Group: Experiences at OrthoCarolina. Journal of Pediatric Orthopaedics. 2020;40.
38. Murthy V. Connecting at work. Harvard Business Review. 2017.
39. Dabekaussen KF, Scheepers RA, Heineman E, Haber AL, Lombarts KM, Jaarsma DA, et al. Health care professionals' perceptions of unprofessional behaviour in the clinical workplace. PloS one. 2023;18(1):e0280444.
40. Rosenstein A. Disruptive and unprofessional behaviors. Physician mental health and well-being: research and practice. 2017:61-85.
41. Pope BA, Carney PA, Brooks MC, Rice DR, Albright AA, Halvorson SA. Resident Assessment of Clinician Educators According to Core ACGME Competencies. Journal of General Internal Medicine. 2023:1-8.
42. Okello DR, Gilson L. Exploring the influence of trust relationships on motivation in the health sector: a systematic review. Human resources for health. 2015;13(1):1-18.
43. Frost HD, Regehr G. "I am a doctor": negotiating the discourses of standardization and diversity in professional identity construction. Acad Med. 2013;88(10):1570-7.
44. Dominguez LC, Stassen L, de Grave W, Sanabria A, Alfonso E, Dolmans D. Taking control: Is job crafting related to the intention to leave surgical training? PloS one. 2018;13(6):e0197276.
45. Dominguez LC, Dolmans D, de Grave W, Sanabria A, Stassen LP. Job Crafting to Persist in Surgical Training: A Qualitative Study From the Resident's Perspective. Journal of Surgical Research. 2019;239:180-90.
46. Horowitz CR, Suchman AL, Branch Jr WT, Frankel RM. What do doctors find meaningful about their work? : American College of Physicians; 2003.
47. Vearrier L, editor Enlightened self-interest in altruism (ESIA). Hec Forum; 2020: Springer.
48. Heidegger M, Macquarrie J, Robinson E. Being and time. 1962.
49. Frambach JM, van der Vleuten CPM, Durning SJ. AM Last Page: Quality Criteria in Qualitative and Quantitative Research. Academic Medicine. 2013;88(4):552.
50. Capaciteitsorgaan. Capaciteitsplan 2020-2023. Deelrapport 1 Medische specialismen, Klinische techonologische specialismen, Spoedeisende geneeskunde. Utrecht 2019.
51. Parker C, Scott S, Geddes A. Snowball sampling. SAGE research methods foundations. 2019.

## APPENDIX I

### Reflexivity

Instead of 'bracketing' our lifeworlds, following the hermeneutic approach we recognize that our "past experiences and knowledge are valuable guides" to our current study.(25) The philosophical background of the lead author RB made her particularly interested in the nature of appreciation as well as in being able to distinguish subjective experiences from intersubjective experiences and commonalities. Also, in her personal circle, lead author RB often interacts with residents – those personal conversations helped in interpreting our data. The methodological qualitative expertise of author MS, using approaches ranging from interpretative phenomenology and grounded theory to realism, was guiding to designing our study and monitoring the iterative process. Building on her expertise, the research group was able to come to a clear understanding of the phenomenon of appreciation and see this in the perspective of the learning climate – one of her topics of interest. The clinical expertise of author JH helped us to understand the data from a practical point of view. It helped us to determine whether our findings made sense and indeed were able to inform and impact on practice. Also, as author JH's research expertise is quantitative oriented, his reading of the manuscript supported us in making our work as clear as possible for all kinds of readership. Finally, the expertise and decades of experience in the field of professional performance and physician well-being of author KL, was leading in putting our interpretations in a broader perspective. Not only did she and author MS (together) gain a lot experience in different qualitative approaches, her knowledge of the field coming from a non-medical background helped to distinguish between relevant and less relevant findings and to find our angle with regards to the existing literature.

### References

**1.** Neubauer BE, Witkop CT, Varpio L. How phenomenology can help us learn from the experiences of others. Perspectives on medical education. 2019;8(2):90-97.

## APPENDIX II

**Semi-structured initial interview guide**

This interview guide is the initial interview guide; it evolved and was revised iteratively during data analysis. We have highlighted later adjustments and additional questions in *italics.*

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*Introductory questions*

1. Can you please introduce yourself?

2 [In case not mentioned]: Could you please tell me in which specialty program you are enrolled, what year you are currently in, *and how you are enjoying your training so far?*

*Association questions*

1. [Showing participants +/- 9 association cards): Which card(s) do you associate with appreciation at work? Can you explain why? *Are there any other cards that you associate with appreciation at work?*

*Key questions*

1. Can you recall a situation in which you (last) felt really appreciated at work? Can you explain what happened? *What made you feel appreciated? What did it do to you?*

2. Can you explain what appreciation at work means to you? *How would you define appreciation? What are the core elements for you?*

3. Can you tell me something about how appreciation at work affects your (relationship with) work?

- Can you describe a situation in which appreciation, or lack thereof, affected your work pleasure? What made that it had this effect on your work pleasure?

- Can you describe a situation in which appreciation, or lack thereof, affected your performance at work? What made that it had this effect on your performance?

*Wrap-up questions*

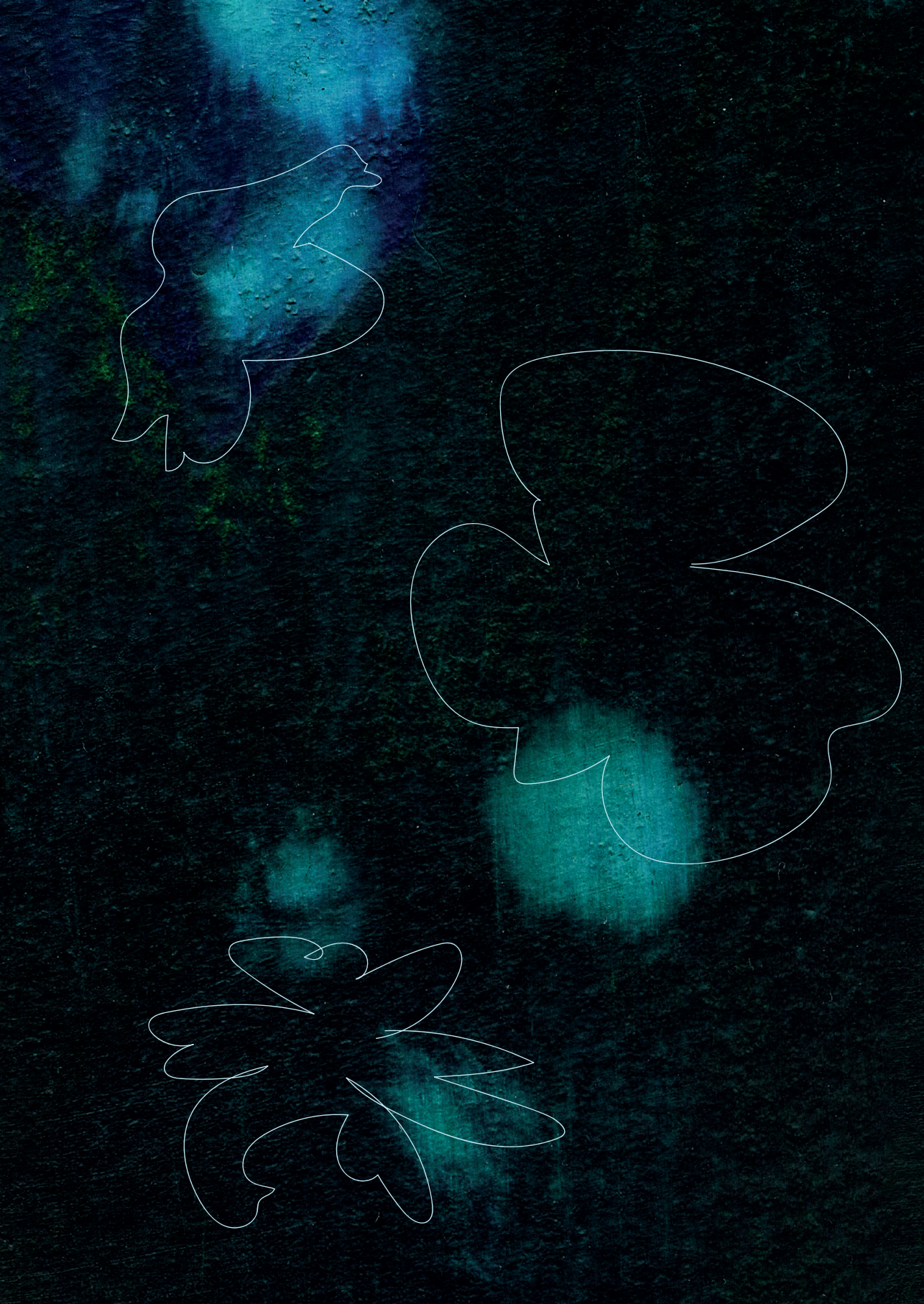
1. Is there anything related to the topic of appreciation at work that we did not discuss and you would like to mention?

2. Do you have any other remarks or questions left?

## APPENDIX III

| Code System MAXQDA Export |
|---|
| Code System |
| Conceptualization |
| Conceptualization\Being seen and heard |
| Conceptualization\Being seen and heard\Acknowledgement of uniqueness |
| Conceptualization\Subjectivity of appreciation |
| Conceptualization\Reflections on the nature of appreciation |
| Conceptualization\Unexpectedness |
| Resident as a trainee |
| Resident as a trainee\Medical hierarchy, learning position and training |
| Resident as a trainee \Implicit acknowledgement of competencies |
| Resident as a trainee \Explicit acknowledgement of competencies |
| Resident as a trainee \Room for unique growth and development |
| Resident as a physician and colleague |
| Resident as physician and colleague \Patient contact and meaningfulness |
| Resident as physician and colleague \Collegiality |
| Resident as physician and colleague \Conscious success experience |
| Resident as an employee |
| Resident as an employee \Facilitating work and education |
| Resident as an employee \Facilitating work and education\Recognition and reward for (additional/ other) effort |

| |
|---|
| Resident as an employee \Valuing/ prioritizing resident well-being |
| Impact appreciation |
| Impact appreciation \Mental health |
| Impact appreciation \Positive spiral/ negative spiral |
| Impact appreciation \Professional fulfillment |
| Impact appreciation \Performance/ quality of care |



# Chapter 6

General discussion

*It doesn't cost me anything to be kind.* – Paddington

In this thesis I explored whether and how elements of cultures of wellness impact Dutch physicians' flourishing – or, more specifically and inspired by Epstein's definition of physicians' flourishing(1), their professional fulfillment and compassionate care practices. We conducted four empirical studies to answer this main research question. I will start this chapter by summarizing the main findings of the empirical work. I will then critically discuss these addressing three overlapping themes that emerged from our findings, both showing trends throughout our studies and serving as more general thinking frames for formulating answers to our research question. The three overlapping themes are 'Meaning in work', 'Kindness in the workplace' and 'Human connections at the core of practice'. In this part, I use the lens of Aristotle's Eudaimonia(2, 3) and Baumeister's 'Four needs for meaning'(4) to mirror our findings on physician flourishing with human needs for meaning in life. Linking our findings to more fundamental theories on human needs shows the conditionality of medical cultures of wellness in order for physicians to flourish. After that, I will address the practical implications following from the findings. Finally, I will discuss the limitations of this thesis and provide suggestions for future research.

**Main findings**

The main question of this thesis was phrased as: *What role do elements of cultures of wellness play in Dutch physicians' professional fulfillment and compassionate care practices?* To answer this question this thesis considered several important elements of cultures of wellness, including compassion, self-kindness, value alignment, perceived appreciation,

work-home integration and collegiality, and touched upon others, such as psychological safety and inclusive work environments. The findings of this thesis show that elements of cultures of wellness, in general, benefit Dutch physicians' flourishing. The work on Dutch cardiologists (chapters 2 and 3) showed that they experienced relatively high levels of professional fulfillment, for which satisfying and meaningful patient interactions were the greatest predictor. In addition, Dutch cardiologists' levels of professional fulfillment were positively affected by a good person job-fit and high levels of personal resilience, as well as a sense of autonomy and involvement in overall managerial decision-making. Furthermore, cardiologists reported moderate levels of self-kindness, and self-kind cardiologists experienced higher levels of professional fulfillment, which was partly explained by the fact that they were more resilient and better able to manage their work-life balance.

This thesis also investigated the topic of physician flourishing in the context of post-graduate medical education (chapters 3 and 4). This thesis showed that supervisors' showing compassion towards patients in practice is indeed observed by residents, and that role modelling may therefore be an effective strategy in teaching residents how to become compassionate caregivers. The element of showing compassion in post-graduate medical educational cultures may therefore stimulate future physicians' flourishing in terms of becoming compassionate caregivers. Female faculty slightly but significantly outperformed their male peers on both role modelling and compassionate behavior scores. However, when male faculty showed compassion, this positively reflected on their role model status more than when female faculty demonstrated compassion.

Lasty, the findings of this thesis revealed that feeling appreciated, being seen and heard as a unique person, was crucial for residents' professional fulfillment and compassionate care practices. Residents narrated their experiences with appreciation at

work coming from three narratives, namely as learner, physician or colleague and employee. The dominant narrative was dependent on personal preferences and characteristics, year of education, medical specialty, previous experiences, and other contextual factors. In general, residents mentioned that the experience of feeling valued was more intense when they were appreciated for something they highly valued themselves and when appreciation was expressed at an unexpected moment. Appreciation, residents said, relieved their stress levels, made them more confident and prouder of themselves, enhanced their motivation and commitment and stimulated the feeling of being able to contribute to patients' (quality of) lives – all positively reflecting on their feelings of fulfillment and the ability to provide compassionate care.

**Critical considerations of the findings**

From our findings, three main themes emerged that describe the role that elements of cultures of wellness play in Dutch physicians' flourishing: 'Meaning in work', 'Kindness in the workplace' and 'Human connections at the core of practice'. In the following section, these themes will be further developed and linked to the perspectives of Aristotle's Eudaimonia(2, 3) and Baumeister's 'Four needs for meaning'(4). These fundamental theories offer insights into the basic human need for meaning in life in relation to human flourishing and thereby provide the opportunity to link our findings on physician flourishing to the scientific debate on human flourishing in general.

Recalling from chapter 1 of this book, the idea of Eudaimonia in Aristotle's work refers to human flourishing in the sense of fulfilling one's full potentials in life.(5) Eudaimonia is closely tied to the idea of self-actualization, whereby individuals seek to develop their unique talents and skills in alignment with their deeply held values, resulting in a life that is experienced as meaningful, valuable and purposeful.(6, 7)

Focusing on self-realization and meaning in life, and striving towards excellence based on one's full potential is what stimulates individuals to flourish(5, 8). In the long run, engaging in 'the meaningful life' for Aristotle goes hand in hand with experiencing positive feelings, e.g. feeling good or happy.(5, 9)

Baumeister's *'Four needs for meaning'*(4) describes four aspects or needs that together make up for a life that is experienced as meaningful. The first is the need for purpose, which is explained as conferring meaning on events by seeing those as desirable when they lead to either positive objective outcomes or goals, or to subjective states such as fulfillment or happiness. The second need for meaning is the need for value and justification; referring to people's standards about right and wrong and the ability of linking actions or events to those standards. Third, Baumeister mentions the need for efficacy, which *"(…) involves an essential belief that one can make a difference in external events, particularly with a view to bringing about desired outcomes. Autonomy and control can satisfy this need."* The last need is the need for self-worth; which is partly built up by positive affirmations of the self. In other words, individuals must find some signifying basis for the idea that they are admirable or commendable.(4)



**Meaning in work**

First of all, this thesis addresses the importance of experiencing meaning in work for Dutch physicians as it relates to their flourishing. Although experiencing meaning in work is an individual matter (e.g. what provides meaning in work may differ per person), studies have shown that for most physicians meaning in work is related to relationships with patients, relationships with colleagues and 'day-to-day rewards of practice such as intellectual stimulation'.(10) Chapter 2, indeed, revealed that by far the strongest predictor for Dutch cardiologists' professional fulfillment was meaningful patient-

interactions. Meaningful patient-interactions was measured by items such as *"The gratitude displayed by my patients keeps me going"* and *"I have a positive impact on a population that is lacking behind socio-economically".* These aspects were also apparent in chapter 5 where we found that being able to contribute to patients' (quality of) lives had a great impact on residents' professional fulfillment and, indirectly, their compassionate care practices. An obvious explanation for the strong link between feeling appreciated by patients and professional fulfillment is that, as residents shared with us, 'being able to help others' was often a great driver for becoming a doctor in the first place. Indeed, in a previous study on compassionate care, we also found that for residents being compassionate entailed the feeling of really making a difference for patients; stimulating residents to reflect on their unique profession and role in guiding patients through important events in their lives.(11) This idea seems to be in line with Baumeister's third and fourth need for meaning(4): efficacy - as it relates to being able to make a difference in patients' lives, and self-worth - being positively affirmed by patients about this. Our findings also align with previous research(10-13) and Aristotle´s perspective on the relation between engaging in the meaningful life and well-being(5, 9), as they show that meaningful patient-interactions often result in feelings of happiness and connectedness. Together with the feeling of being able to contribute, this increases physicians' feelings of fulfillment and work-related well-being – ultimately resulting in better patient care outcomes.

In chapter 2, we found that the self-reported levels of Dutch cardiologists' professional fulfillment was relatively high (M = 3.85 out of 5) compared to those of American physicians in general as presented by Trockel and colleagues.(14) This may be explained by the meaningful nature of the profession, cardiologists have an important role in guiding patients who suffer from a life-threatening illness and they often operate on the verge of

life and death(15), and its reputation as a frontrunner in medicine regarding technological advancement and research.(15) In line with our explanation, a 2017 study on 'career calling' found that for physicians to maintain their sense of 'calling' in work, being present at patients' life-changing events and the conversations around these moments were extremely valuable.(16) Previous research also suggested that reflecting on impactful personal experiences in their practice, such as being with a patient at the end of their life, helps physicians to connect with what is most meaningful in their work.(17, 18) The ideas of 'calling' in work and personal reflection stimulating meaningfulness, strongly align with Baumeister's first need for meaning: finding purpose.(4) Indeed, being present at patients' life events, although not always being able to make a difference (the need for self-efficacy), may help physicians to confer meaning on their daily practices ultimately providing feelings of fulfillment.

Furthermore, our findings underscore the previously established link between appreciation and value alignment - two important aspects of cultures of wellness - and experiencing meaning in work.(19, 20) In chapter 5, we found that appreciation for residents meant that they were appreciated for things that they personally valued. This could refer to receiving appreciation for a newly developed skill they hoped to be acknowledged for; further developing one's unique talents and skills is closely related to Aristotle's idea of self-actualization(6, 7). It could also refer to being taken seriously by the team for their perspectives on the healthcare system. As Baumeister proposes, in order to find meaning in life, individuals feel the need for aligning their activities with their values and standards about right and wrong.(4) Indeed, research has shown that becoming aware of one's personal and professional values helps individuals to connect with what to them is most meaningful in work.(17) More generally, as Olson and colleagues described(20),*"where a culture of well-being is cultivated, physicians share a*

*common mission with their organizational leaders; they feel valued (…) and they feel they are making a contribution to something meaningful and larger than themselves."* The idea of experiencing meaning in work in relation to personal values also helps to understand the findings in chapter 2, which showed that a sense of autonomy at work is the second strongest predictor of cardiologists' professional fulfillment. Higher levels of autonomy at work may create more opportunities for physicians to spend their energy and time on what they find most valuable and meaningful; giving them the experience of being able to contribute. This form of alignment between an individual's values and their work, the third need for meaning in Baumeister's theory(4), often stimulates intrinsic motivation and therefore higher levels of professional fulfillment.(14, 19) One of the most prominent theories linking a sense of autonomy at work to (intrinsic) motivation and well-being, is Ryan and Deci's self-determination theory (SDT). Intrinsic motivation, within the self-determination framework, is defined as "doing something for its own sake". SDT, subsequently, argues that autonomy is important for intrinsic motivation and that specific factors (e.g. rewards, deadlines, pressure) may negatively affect feelings of autonomy and therefore undermine intrinsic motivation. Research showed that the more autonomous someone's motivation for doing something is, the greater their persistence, performance and well-being in that domain of activities will be.(21)

In conclusion, our findings clearly point toward 'meaning in work' as a crucial element in physician flourishing. Especially in our contemporary, over-demanding, increasingly digitalized healthcare systems, fostering and restoring meaning in work may be more important than ever. Elements of cultures of wellness, such as appreciation and value alignment(4, 19), but also feelings of purpose and self-efficacy(4) may help physicians to find meaning in work, fuel an emerging sense of fulfillment or continue to flourish. In their perspective 'Meaning and the Nature of Physicians' Work' in the *New England Journal of*

*Medicine*, Rosenthal and Verghese argue that in order to restore meaning in the medical profession, the first step is to restore and promote connections with one another, including members of the healthcare teams, patients and their families.(22) Their perspective brings me to the following themes I will present to answer the question what role elements of cultures of wellness play in physician flourishing, starting with 'Kindness in the workplace'.

**Kindness in the workplace**

The empirical evidence presented in this thesis suggests that in order to feel professionally fulfilled and to provide compassionate care, physicians must first be kind to themselves. The idea that self-kindness is a prerequisite for kindness or compassion towards others is well-established.(23, 24) Added by Shanafelt to the idea of cultures of wellness(25), self-kindness is presumed to be a crucial element of physician flourishing.(23, 26) Our research into self-kindness of cardiologists, reported in chapter 3 in this thesis, showed that in addition to boosting compassion skills, self-kindness also indirectly promotes physicians' professional fulfillment. First of all, self-kind physicians seem to have better self-care skills(27, 28). In our study, this was illustrated by the fact that self-kind cardiologists, compared to their peers with lower self-kindness scores, were better able to manage their work-life balance. A healthy work-life balance for physicians is an important element of cultures of wellness(19); physicians experience a reduced negative impact of work on their personal lives which may increase feelings of professional fulfillment. Second, self-kind physicians were found to recover more easily from adverse events, leaving them with more time and space to enjoy positive feelings and opportunities at work, important indicators of professional fulfillment.(14) Especially seen in the light of the two dominant challenges in the medical culture, physicians'

perfectionism and deferring self-care - as discussed in the introduction -, there is a prominent role for self-kindness in physician flourishing. The good news is that self-kindness is a trainable skill.(14, 23)

This thesis, however, also shows that focusing on *self*-kindness alone is not enough and that it is important to collectively foster kindness in the workplace (towards the self *and* others) in order for individual physicians to flourish. Although they do not mention kindness as a separate element of cultures of wellness, Menon and Trockel (2019) do emphasize that appreciation facilitates kindness in medicine.(19) In chapter 5, multiple examples of how appreciation and kindness promote future medical specialists' professional fulfillment and compassionate care practices were highlighted. In general, the study showed that residents want to be seen and heard for who they are and what they contribute in practice; some more occasional 'acts of kindness' among colleagues at work could be helpful in fulfilling this basic human need. Hake & Post (2023) have defined an act of kindness as "an action that benefits another and is perceived as kind by the person the act is directed towards".(29) In this light, the prevalent social norm in some workplaces that *'not receiving any feedback is a good sign'* could be reconsidered and replaced with small, intentional acts of kindness. As one interviewed resident said, hearing only three words from faculty like *'wow, well done'* could suffice. This example underscores Baumeister's need for self-worth and affirmation.(4) Residents, like all human beings, need to be affirmed that they are worthy, admirable or commendable from time to time. Affirmative and kind words from faculty and other colleagues may contribute to feelings of worthiness. Unfortunately, such acts of kindness were regularly hindered by department cultures described as hierarchical, conservative and anonymous.

The idea of kindness in the workplace was also reflected by our findings around collegiality in chapter 5. When residents shared their experiences with appreciation in

terms of collegiality with us, they mentioned various 'acts of kindness', such as being supportive and understanding towards each other, "taking one for the team" and making small gestures of appreciation. For one resident, this collective kindness among the team felt like 'the foundation' of the job. Last but not least, the results in chapter 5 align with previous research showing that more kindness in the workplace not only benefits physicians(30), but also patient care.(31, 32)

Next, after discussing how kindness towards the self and towards colleagues may promote physician flourishing, we turn to a third topic within the theme of kindness: kindness expressed by patients towards physicians. As mentioned in chapter 2, meaningful doctor patient interactions, and gratitude displayed by patients are major drivers for physicians' professional fulfillment. Chapter 5 underscored this finding by clearly illustrating how patient appreciation impacted residents' feelings of fulfillment, but also their ability to provide compassionate and high quality patient care, e.g. because they were better able to objectively judge patients' explanations of their symptoms. During the interview, one resident shared that they miscalculated the severeness of a situation "just because the patient was whining". This line of reasoning was also visible in our previous work on compassionate care, where residents mentioned the importance of patients behaving, at least, politely and respectfully for the sake of high quality and compassionate patient care.(11)



Consistent with the findings of this thesis, previous research has also shown that expressions of gratitude and kindness from patients can have a positive impact on their caregivers. In their scoping review on gratitude expressed by patients and their families, Aparacio and colleagues (2017) conclude that there is evidence suggesting that patients' authentic expressions of gratitude - ranging from verbal expressions of gratefulness to various acts of kindness such as gifts or sincere handshakes - likely enhances physicians'

well-being and creates a ripple effect by enduring and nurturing more gratitude in the workplace.(33) This idea of patients' gratitude stimulating physicians' well-being and creating wider effects in the long run is in line with Aristotle's work on Eudaimonia. According to Aristotle, when individuals engage in the meaningful life (the sense of which may be stimulated for physicians by patients' authentic expressions of gratitude) this will result in them experiencing positive feelings and eventually being able to 'fully function'. Supporting this idea, research has suggested that expressions of gratitude from patients and their families boosted information sharing among medical team members. Individuals who are thanked by others often experience social worth which in turn stimulates their own prosocial behavior, e.g. providing feedback to a colleague or providing assistance, and thereby positively impacted diagnostic and treatment performance outcomes on a team level.(34)

Lastly, the findings of our study into compassionate behavior in a large sample of Dutch faculty (chapter 4) indicate that Dutch physicians, in general, express compassion towards patients and their families. Apart from the associated positive effects for the individual faculty who express this behavior(35-39) and their patients(29, 36, 40-42), showing compassion in practice may also help to transfer compassionate care skills to a future generation of doctors. Since teaching compassion is generally not part of the formal curriculum(43), the transfer of this skill is heavily dependent on how it is role modelled in clinical practice.(44-46)

In addition to our finding that residents observe faculty's compassionate behavior towards patients in practice, chapter 4 also showed that male faculty were more rewarded for doing so in terms of being seen as role models than female faculty. Although the found effect was small, this finding is consistent with the prevailing notion that male physicians receive greater admiration for exhibiting humanistic behaviors, as such behaviors

contravene traditional gender norms, as discussed in chapter 4 (47, 48). In the light of our theoretical framework of cultures of wellness, this finding stresses the importance of an inclusive work environment. Making (gender) equity, diversity and inclusion an organizational imperative requires institutional leadership at all levels. Leadership should be aware of and committed to addressing implicit and explicit biases, and its potentially related hostility, harassment and feelings of isolation and loneliness.(20)

Given the crucial role of compassion and kindness in physician flourishing, the finding that residents do observe faculty's compassionate behavior toward patients, - and that male faculty are more highly admired for showing compassion than their female counterparts -, suggests that faculty should consciously recognize and utilize their status as role models as a deliberate teaching strategy. This approach is most effective within inclusive work environments supported by strong leadership, which can foster the cultivation of kindness and compassion within the medical profession. Some scholars argue that expressing compassion is an underestimated yet essential element in creating sustainable healthcare systems capable of successfully managing current, and I think future, challenges.(31) This brings us to our last theme explaining the role elements of cultures of wellness may play in physician flourishing.



**Human connections at the core of practice**

The findings of this thesis, in general, strongly point to bringing humanistic qualities and behaviors to the forefront of daily medical practice. They, too, endorse emerging calls for a reorientation of healthcare systems – from models centered on transactions to those focusing on relationships and human connections.(49, 50) Current Western healthcare systems have been described as transactional: healthcare is thought of as a two-way transaction between the organization and its consumers (patients).(51) Or, as Sinsky and

colleagues (2022) describe it: *"Healthcare has increasingly been conceptualized as a series of independent encounters (transactions) that can be distributed randomly among healthcare workers. (…) This transactional mindset treats physicians as interchangeable parts."*(49) Through a variety of trends and developments, such as the corporatization and commodification of healthcare, the consumer movement, and an increased revenue-driven focus of healthcare institutions, relationships have become more and more deprioritized, allowing the transactional model to expand.(49) Apart from the idea of 'delivering services to patients', the transactional healthcare model is characterized by an emphasis on productivity and efficiency, performance metrics, measures relying on tangible outcomes and mechanistic thinking anchored in profits, margins and competition.(51, 52) In such a context, the feeling of meaningfulness may easily erode when physicians start to feel as "cogs in the wheel". They may feel their organization cares more about productivity and financial benefits, than about the quality of patient care and treating patients with compassion.(50, 52) Moreover, the focus on productivity and efficiency overshadows the connections with and appreciation of colleagues and patients, and threatens to ignore the humanistic nature of the profession(49, 51, 52). This strongly impedes physicians' flourishing in terms of them experiencing fulfillment and being able to provide compassionate care.

Our exploration of (elements of) cultures of wellness suggests that, to support physician flourishing and ensure sustainable healthcare systems capable of delivering high-quality patient care, it may indeed be time to reimagine and reinforce the relational model in healthcare and to place human connections, once again, at the core of practice. Our research focused on the professional *culture* of medicine which is, ideally, created, owned, maintained and modified by the physicians working within it.(19) This implies that members of the profession have some degree of agency in shaping cultural norms and

values, as opposed to being solely influenced by external systemic forces. Addressing the medical professional culture and some of its (adverse) norms and values, may therefore be a first, useful and even necessary step towards a paradigm shift in healthcare.

Using the lens of cultures of wellness and discovering the role of some of its elements, two main themes emerged as crucial for physician flourishing: 'Meaning in work' and 'Kindness in the workplace'. Our findings show that fostering and prioritizing those may help to build a sustainable and flourishing healthcare workforce. This will require a long term focus and commitment, and will not necessarily bring quick financial wins, but it may see to building a supportive environment in which care is centralized around the doctor patient relationship. Indeed, a system upholding and stimulating most doctors' missions to make people's lives a little bit better, instead of boosting corporate missions aimed at financial results, may both feel more worthy and (thus) enhance physicians' well-being.(53) Paradoxically, this may even result in financial wins in the long run.(12, 54-56)



As mentioned, this thesis focused on medicine's professional culture and I belief that for a radical healthcare system shift to work, cultures of wellness that preserve meaning, kindness and human connections at work must be in place. Needless to say, focusing on a set of normative values, attitudes, and behaviors that promote self-care, personal and professional growth, and compassion for colleagues, patients and self (i.e. cultures of wellness) is not sufficient on its own to recalibrate the relational paradigm within healthcare systems. A paradigm shift towards the relational model requires institutional leadership and (policy) efforts on all (macro, meso and micro) organizational, educational and professional levels. Some examples of micro and meso policy efforts aimed at restoring relations include: introducing meeting practices that begin with an informal check-in or time for personal sharing, incorporating buffer times

into patient care routines to allow flexibility when more time is needed, pairing up physicians and nurses or medical assistants for a longer period of time to promote ongoing and trustworthy relationships and investing in electronic health record systems (EHRS) designed to reduce the cognitive load associated with the interacting with the EHR. (49) More specifically and 'close to home', initiatives aimed at preserving human connections in the educational program of the Amsterdam UMC include an 'appreciation and gratitude event' for students of the honors program in which they discover and reflect on these concepts in relation to their professionalism and – as a result of our previous project on compassionate care(11) – the development of a compassion training for residents as part of their transdisciplinary educational program. In addition, some of the necessary efforts are also visible at the macro level in the Netherlands. The most recent version of the Dutch integral healthcare agreement (*Integraal ZorgAkkoord, IZA, red*.)(57), signed by the sector's most important stakeholders, for example, acknowledges the importance of more time for the healthcare professional and their patients and the need for personalized healthcare which results from shared decision making and takes into account both the patient's and professional's values. Likewise, these issues are acknowledged within the Dutch medical profession itself. In its recent report on the Medical Specialist of 2035 *(Medisch Specialist 2035 – Bevlogen, betrokken en verbindend, red.)*, the Dutch Federation of Medical Specialists emphasizes the importance of professional fulfillment and a healthy professional culture as key factors for ensuring a sustainable workforce.(58) In the next section I will illuminate some practical suggestions on how to start building towards successful *cultures of wellness* in healthcare organizations.

**Practical implications**

The findings of this thesis are relevant for both individual physicians and their patients, for healthcare institutions and their (postgraduate) medical training programs, and for the wider healthcare system. I will now formulate some first and concrete practical implications that may help to foster physician flourishing in the clinical work- and learning environment.

*Investing in interpersonal relationships with both patients and colleagues*

As noted, our findings underline previously cited pleas by Rosenthal and Verghese(22), Sinsky and colleagues(49) and many others reflected in ongoing contributions in all major medical journals to prioritize restoring and promoting human connections within healthcare. Chapter 2, 4 and 5 of this thesis show that investing in relationships with patients and their families and with close colleagues and other members of the healthcare team stimulates physician flourishing. Donna Zulman and Abraham Verghese, two prominent scholars, developed an institutional procedure aimed at inspiring a 'humanistic shift' that fosters meaningful connections in healthcare. Grounded in empirical evidence, their objective is to enhance both the patient experience as well as clinician well-being/ flourishing and support safe, effective and patient-centered care.(59)

**Box 1. Description of Zulman and Verghese's five recommended practices for being present.(60)**

1. Prepare the consult or patient encounter with intention. This means that one familiarizes with the patient one is about to meet. It may also help physicians to create a small ritual for themselves, e.g. a one minute breathing exercise, to become mindfully present and enter the patient encounter with intention.
2. Listen intently and completely. It helps to sit down and lean forward and it is important not to interrupt the patient.
3. Agree on what matters most. Within this practice the goal is to find out what the patient cares about and incorporate this in the treatment plan/ visit agenda.
4. Connect with the patient's story. Here it is crucial to see the patient as a full person and consider the factors that may have impacted her/ his health. It may also help to ask about the patient's daily life.
5. Explore emotional cues. It should not be underestimated how important emotions are in creating a connection. It might help to notice, name and validate a patient's emotions in order to become a trusted partner for them.

As Verghese described both beautifully and accurately: *"There are a few things that are timeless in medicine, unchanged since antiquity, which we can keep front and center as we bring about reform. One is the simple truth that patients want us to be more present. We as physicians want to be more present with the patient, as well, because without that contact, our professional life loses much of its meaning."* (61) The so called Presence 5, based on the practice of purposefully being present with the patient, exists of five recommended practices: 1) Prepare with intention, 2) Listen intently and completely, 3) Agree on what matters most, 4) Connect with the patient's story and 5) Explore emotional cues. For a more detailed description of the five practices please see text box 1.(60) Clearly, and mentioned previously, the responsibility for having meaningful interactions with patients lies not only with the individual physicians, but needs support from healthcare leaders, institutions and political leaders at the (inter)national level. Our findings, nonetheless, are a reminder that meaningful patient interactions are at the heart of the profession and are not only foundational for promoting and providing compassionate care, but they will help physicians to experience feeling of fulfillment.

Additionally, our findings in chapter 5 suggest that the connections with colleagues (e.g. varying from nurses and physician assistants to staff members) are often considered "the foundation" of work. Collegiality contributes to physicians' professional fulfillment and compassionate care practices(12, 62-65). Fostering inter-collegial connections may be done in many ways: through pleasant communication, being supportive and understanding towards each other, "taking one for the team", making little gestures of appreciation (e.g. bringing a treat when leaving an internship) and seeing colleagues for who they are as humans. In discussing the findings of the qualitative interview study (chapter 5) with groups of residents and staff, e.g. at the conference of the Dutch Association for Medical Education (NVMO) and at a regional education meeting of the neurology residency training program in Rotterdam, new insights emerged. For example, residents suggested that having lunch with their supervisors more often, or working in the same open office space, would probably foster feelings of collegiality between them. These activities facilitate small talk and getting to know each other better. The literature offers several additional suggestions on how to stimulate inter-collegial connections in medical practice. Recommended practices and behaviors include, among other things, being flexible and helping out with swift swaps, appropriate delegation, standing up for each other, appreciating the stress and workload on morning handover of the night registrar, and of course avoiding badmouthing others.(49, 66, 67)

A more formalized way to start an open dialogue about social and cultural team norms and behaviors in the workplace/ department may be through the implementation and follow-up of well-being measurement tools, such as the WellNext Scan (WNS) developed by the Amsterdam UMC research group Professional Performance & Compassionate Care.(68) The WNS is a validated (questionnaire) tool aimed to map physicians' experienced wellbeing, as well as the individual and organizational factors

influencing this wellbeing. The team-based results are meant to facilitate a meaningful dialogue. Using the WNS, especially when followed up by a professionally facilitated team conversation, may be supportive in getting to know team members' perspectives on well-being and their work context, and in raising awareness about certain (team) practices and behaviors being in place or not.(68) Additionally, as reported to us by physician teams who went through the process of using and following up on the WNS results, the meaningful dialogues sometimes resulted in 'easily' solving some of the daily issues faced in practice – the so-called *low hanging fruits* – and led to the definition of action plans for other problems that needed more time, more thinking or more resources. Multiple teams have repeatedly used the WNS, and from their reports we have anecdotal evidence that it has brought improvements in physicians' experienced wellbeing. Future research will have to confirm these reports.

*Explicitly starting conversations around professionals' core values*

Second, we recommend to talk more frequently and explicitly about people's core values(69) in the clinical work- and learn environment- referring to either personal or professional values. As discussed in the introduction, in order to flourish individuals need to engage in activities that deploy their unique potential *and* that are congruent with their deeply held values.(6, 70) This helps to find meaning in work and life. Moreover, studies have indicated that healthcare professionals may experience moral distress when a discrepancy arises between their core values and their actions in clinical practice, which can ultimately even contribute to burnout symptoms.(69, 71) As every human being is unique and possesses their own talents, skills, potential and *values* – 'flourishing' will look different for everyone.(7)

Our findings in chapter 5 underline these ancient ideas around how to stimulate flourishing, as they show that the integration of personal core values within the workplace is essential for physicians to remain professionally fulfilled and deliver high quality patient care. One way to talk about core values might be in transdisciplinary workshops, where residents and staff could learn about identifying their personal and professional values and share their experiences within a group. Getting a grip on their own core values through these discussions may help physicians to become self-directed leaders and craft their work in a way that is fulfilling to them.(72-74)

Another established way to talk about values in the clinical workspace is through moral case deliberation. In moral case deliberations, various healthcare workers (nurses, residents, staff) together discuss a moral dilemma that one of them has faced in clinical practice. Together they make an inventory of the possible personal and professional values of different stakeholders that are involved in the dilemma.(75) Engaging in this process may not only contribute to resolving the dilemma, but it may also enable physicians to gain a deeper understanding of the concept of values, appreciate how they vary among individuals, and identify and reflect on their own personal values.



*Leadership strategies aimed at normalizing (self-)kindness in medical practice and PGME*

Third, considering our findings, we suggest that now is the time to normalize kindness and self-kindness in medical practice and post-graduate medical education. Apart from individual physicians performing previously mentioned acts of kindness, normalizing (self-)kindness requires a specific type of leadership. One example thereof is the integrative leadership model developed by Shanafelt and colleagues called Wellness-Centered Leadership (WCL).(52) The idea of WCL consists of three basic elements: care about people always, cultivate individual and team relationships and inspire change, all

strongly related to cultivating kindness and self-kindness at the work floor. WCL implies that leaders *"demonstrate respect, empathy, and curiosity, and (…) continually seek to understand and validate the complex needs and contributions of individuals and teams."*(52) Importantly, leaders can only care for others when they take properly care of, and are kind to, themselves first.(52) Therefore, WCL leaders discuss and model self-care and self-valuation. They, where possible, role model concern for sleep, rest, vacations, and personal relationships through vulnerable and authentic self-disclosure. (52) Doing so means that they lead by example which may help to cultivate self-kindness in the medical work- and learning environment.(76) Furthermore they express gratitude, lead conversations about work-life integration, listen properly for what is important to others and ask open-ended questions.(52) Another way to cultivate kindness and self-kindness in the workplace is to continue to put it on the agenda and address it. Departments may, for example, organize dialogues or facilitate workshops for physicians on how to be kind to oneself. Or, on a larger scale, professional associations may play a role. In the Netherlands, the findings of our research into cardiologists' wellbeing resulted in the Dutch Association for Cardiology (NVVC) establishing a national project group which aims to prioritize 'creating a healthy cardiology workforce' within training programs and departments. This committee is now proposing to the board of the NVVC concrete well-being recommendations for all cardiologists (in training). By placing well-being on the national agenda, the association in turn encourages program leaders and individual physicians to address topics discussed in this thesis within their departments.

**Strengths and limitations**

This combination of quantitative and qualitative methods used in this thesis increases the validity, reliability and transferability(77) of our findings on the role elements of cultures of wellness play in Dutch physicians' flourishing. Also, for all the quantitative work representative study samples were used, strengthening us in our conviction that our findings are transferrable to the Dutch healthcare setting as such. As we only used validated measurement instruments, we feel assured in the reliability of this thesis' findings. Finally, all of the work was performed within a multidisciplinary research team. The variety in the researchers' backgrounds, as well as the close collaboration with the Dutch Association for Cardiology for the study chapters 2 and 3, enabled us to interpret our findings using various perspectives, thereby creating a more comprehensive understanding of the topic.

When interpreting this thesis' overall findings about the role elements of cultures of wellness play in physician flourishing, several limitations must be kept in mind. The specific limitations for each study were discussed in the separate chapters. More generally, I observe two limitations related to this thesis. First, the quantitative studies in this thesis all have a cross-sectional design, meaning that it is hard to determine causality and direction in the found associations. However, all quantitative studies are theory-based and partly substantiated with previous longitudinal research slightly compensating this limitation. Second, all of our studies were conducted in the Dutch healthcare setting. This specific context, for example the fact that sometimes residents rotate in different hospitals, may differ from other healthcare settings and thus impact the findings of this thesis. Nevertheless, there is ample research demonstrating comparable culture related challenges that impact physicians' flourishing in other countries(25, 78-83) – implying that our findings may offer relevant insights for those contexts as well.

**Suggestions for future research**

In this thesis I explored the role that elements of cultures of wellness play in physician flourishing. Although I was able to provide some first insights into how physician flourishing may be affected by those elements, there are still ample research areas related to this topic to further explore. First of all, to build on what was mentioned in the limitations section, more (qualitative) research is needed to get a better understanding of the mechanisms behind some of the found associations. For example, chapter 3 showed that self-kind physicians reported higher levels of personal resilience and better work-home balance, which positively contributed to their professional fulfillment. We speculated that resilient physicians find more space and time to enjoy positive feelings and opportunities at work because they recover more easily from adverse experiences, resulting in increased levels of professional fulfillment. Qualitative research using for example audio-diaries(84), may be used to confirm and further understand this assumption.

Second, this thesis focused on a wide range of elements of cultures of wellness including self-kindness, compassion, values and value alignment, appreciation, gratitude, work-home integration, peer support and collegiality.(19, 25) Nonetheless, there are still elements of cultures of wellness that are not or hardly addressed in this thesis that might indeed also affect physician flourishing, such as psychological safety, an inclusive, fair and equitable work environment and a collaborative or Wellness-Centered Leadership style. In line with our formulated practical implications and the conviction in the literature that specific forms of leaderships are needed to create cultures of wellness and to stimulate physician flourishing(19, 52), future research could for example investigate whether these leadership styles in the Dutch healthcare setting indeed positively contribute to the experiences of appreciation, (self-)kindness, fulfillment and compassion in the workplace.

Third, considering our (mostly practically informed) choice to perform two out of four studies among cardiologists and the other two among a wide variety of specialties, it would be interesting to perform additional research into physician flourishing within specific specialties. One suggestion is to see whether the concept of professional fulfillment is equally understood for physicians across all specialties or whether it may have different connotations for particular (sub-)specialties. Additionally, research into how best to promote professional fulfillment among physicians within each discipline would be useful. For example, the questionnaire developed for cardiologists in chapter 2 could be (slightly transformed and) rolled out among other specialists to explore whether the same or other factors contribute most to their feelings of fulfillment. More specifically with regards to appreciation at work, it would be interesting to see whether certain aspects are more important for physicians' feelings of appreciation in one specialty group compared to others or to quantitatively investigate whether the prevalence of the three narratives found (learner, physician/ colleague and employee) differs per specialty.



Fourth and final, in chapter 4, this thesis has quantitatively touched upon the differences between male and female faculty's compassionate behaviors as observed by medical residents. Truly understanding what is being observed and appreciated in faculty's compassionate behavior towards patients and how this may differ for male and female faculty fell outside the scope of this thesis. Future research could be aimed at revealing and understanding differences in expressing compassionate behavior between (female and male) faculty in a qualitative way.

**Concluding remarks**

Physician flourishing – in this thesis conceptualized as the experience of professional fulfillment and the ability to provide compassionate patient care – is crucial for

maintaining sustainable healthcare systems. Considering the dominant transactional paradigm within Western healthcare systems and the accompanying cultural challenges—such as physicians' perfectionism, self-criticism, and deprioritizing self-care—I explored the role that elements of cultures of wellness play in physician flourishing. In line with my findings, I argue that investing in elements of cultures of wellness may be first step in restoring the relational paradigm in healthcare that puts human connections at the core of practice. I hope that the insights of this thesis continue to find their way into practice and that the members of the profession feel the courage and find the tools to indeed collectively foster a culture that promotes meaning and kindness. After all, it doesn't cost us anything to be kind.

**REFERENCES**


1. Epstein RM. What's the Opposite of Burnout? : Springer; 2017.
2. Aristotle. Nicomachean ethics. Kitchener: Batoche Books; 1999.
3. Aristotle. The Eudemian Ethics. Oxford: Oxford University Press; 2011.
4. Baumeister RF, Wilson B. Life stories and the four need for meaning. Psychological Inquiry. 1996;7(4):322-5.
5. Vittersø J. Handbook of eudaimonic well-being: Springer; 2016.
6. Huta V, Waterman AS. Eudaimonia and Its Distinction from Hedonia: Developing a Classification and Terminology for Understanding Conceptual and Operational Definitions. Journal of Happiness Studies. 2014;15(6):1425-56.
7. Kashdan TB, Biswas-Diener R, King LA. Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. The Journal of positive psychology. 2008;3(4):219-33.
8. Ryff CD, Singer BH. Know thyself and become what you are: A eudaimonic approach to psychological well-being. Journal of happiness studies. 2008;9:13-39.
9. Ryan RM, Curren RR, Deci EL. What humans need: Flourishing in Aristotelian philosophy and self-determination theory. 2013.
10. Shanafelt TD. Enhancing meaning in work: a prescription for preventing physician burnout and promoting patient-centered care. Jama. 2009;302(12):1338-40.
11. Debets MPM, Jansen, I., Diepeveen, M., Bogerd, R., Molewijk, B.A.C., Widdershoven, G.A.M., Lombarts, M.J.M.H. Compassionate care through the eyes of patients and physicians: an interview study. PLOS ONE 2024(Under review).
12. Schrijver I, Brady KJ, Trockel M. An exploration of key issues and potential solutions that impact physician wellbeing and professional fulfillment at an academic center. PeerJ. 2016;4:e1783.
13. Scheepers R, Silkens M, van den Berg J, Lombarts K. Associations between job demands, job resources and patient-related burnout among physicians: results from a multicentre observational study. BMJ open. 2020;10(9):e038466.
14. Trockel M, Bohman B, Lesure E, Hamidi MS, Welle D, Roberts L, et al. A brief instrument to assess both burnout and professional fulfillment in physicians: reliability and validity, including correlation with self-reported medical errors, in a sample of resident and practicing physicians. Academic Psychiatry. 2018;42(1):11-24.
15. Panagioti M, Geraghty K, Johnson J. How to prevent burnout in cardiologists? A review of the current evidence, gaps, and future directions. Trends in cardiovascular medicine. 2018;28(1):1-7.
16. Bott EM, Duffy RD, Borges NJ, Braun TL, Jordan KP, Marino JF. Called to medicine: Physicians' experiences of career calling. The Career Development Quarterly. 2017;65(2):113-30.
17. Epstein RM. Mindful practice. Jama. 1999;282(9):833-9.
18. Rabow MW, McPhee SJ. Doctoring to heal: fostering well-being among physicians through personal reflection. Western Journal of Medicine. 2001;174(1):66.
19. Menon NK, Trockel M. Creating a Culture of Wellness. The Art and Science of Physician Wellbeing: Springer; 2019. p. 19-32.
20. Olson K, Marchalik D, Farley H, Dean SM, Lawrence EC, Hamidi MS, et al. Organizational strategies to reduce physician burnout and improve professional fulfillment. Current problems in pediatric and adolescent health care. 2019;49(12):100664.

21. Ryan R. Self determination theory and well being. Social Psychology. 2009;84(822):848.
22. Rosenthal DI, Verghese A. Meaning and the nature of physicians' work. New England Journal of Medicine. 2016;375(19):1813-5.
23. Sinclair S, Kondejewski J, Raffin-Bouchal S, King-Shier KM, Singh P. Can self-compassion promote healthcare provider well-being and compassionate care to others? Results of a systematic review. Applied Psychology: Health and Well-Being. 2017;9(2):168-206.
24. Wiklund Gustin L, Wagner L. The butterfly effect of caring – clinical nursing teachers' understanding of self-compassion as a source to compassionate care. Scandinavian Journal of Caring Sciences. 2013;27(1):175-83.
25. Shanafelt TD. Physician Well-being 2.0: Where Are We and Where Are We Going? Mayo Clinic Proceedings. 2021;96(10):2682-93.
26. Sotile WM, Fallon R, Orlando J. Curbing burnout hysteria with self-compassion: a key to physician resilience. Journal of Pediatric Orthopaedics. 2020;40:S8-S12.
27. Neff K, Leary S-CIM, Hoyle R. Individual Differences in Social Behavior (pp. 561-573). New York: Guilford Press.
28. Menon NK, Trockel MT, Shanafelt TD, editors. Developing a portfolio to support physicians' efforts to promote well-being: one piece of the puzzle. Mayo Clinic Proceedings; 2019: Mayo Foundation for Medical Education and Research.
29. Hake AB, Post SG. Kindness: Definitions and a pilot study for the development of a kindness scale in healthcare. PLoS one. 2023;18(7):e0288766.
30. Davidson JE, Graham P, Montross-Thomas L, Norcross W, Zerbi G. Code Lavender: Cultivating Intentional Acts of Kindness in Response to Stressful Work Situations. EXPLORE. 2017;13(3):181-5.
31. Cochrane BS, Ritchie D, Lockhard D, Picciano G, King JA, Nelson B. A culture of compassion: How timeless principles of kindness and empathy become powerful tools for confronting today's most pressing healthcare challenges. Healthc Manage Forum. 2019;32(3):120-7.
32. Campling P. Reforming the culture of healthcare: the case for intelligent kindness. BJPsych bulletin. 2015;39(1):1-5.
33. Aparicio M, Centeno C, Robinson C, Arantzamendi M. Gratitude between patients and their families and health professionals: a scoping review. Journal of nursing management. 2019;27(2):286-300.
34. Riskin A, Bamberger P, Erez A, Riskin-Guez K, Riskin Y, Sela R, et al. Expressions of Gratitude and Medical Team Performance. Pediatrics. 2019;143(4).
35. Lombarts M. Physicians' professional performance: between time and technology: 2010Uitgevers; 2019.
36. Trzeciak S, Roberts BW, Mazzarelli AJ. Compassionomics: Hypothesis and experimental approach. Medical Hypotheses. 2017;107:92-7.
37. Gleichgerrcht E, Decety J. Empathy in clinical practice: how individual dispositions, gender, and experience moderate empathic concern, burnout, and emotional distress in physicians. PloS one. 2013;8(4):e61526.
38. Lamothe M, Boujut E, Zenasni F, Sultan S. To be or not to be empathic: The combined role of empathic concern and perspective taking in understanding burnout in general practice. BMC Family Practice. 2014;15(1).
39. Engen HG, Singer T. Compassion-based emotion regulation up-regulates experienced positive affect and associated neural networks. Social Cognitive and Affective Neuroscience. 2015;10(9):1291-301.

40. Pereira L, Figueiredo-Braga M, Carvalho IP. Preoperative anxiety in ambulatory surgery: The impact of an empathic patient-centered approach on psychological and clinical outcomes. Patient Educ Couns. 2016;99(5):733-8.
41. Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: definition, components, measurement, and relationship to gender and specialty. American Journal of Psychiatry. 2002;159(9):1563-9.
42. Derksen F, Bensing J, Lagro-Janssen A. Effectiveness of empathy in general practice: a systematic review. British journal of general practice. 2013;63(606):e76-e84.
43. Lown BA, Rosen J, Marttila J. An agenda for improving compassionate care: a survey shows about half of patients say such care is missing. Health Affairs. 2011;30(9):1772-8.
44. Sinclair S, Norris JM, McConnell SJ, Chochinov HM, Hack TF, Hagen NA, et al. Compassion: a scoping review of the healthcare literature. BMC palliative care. 2016;15:6-.
45. Wear D, Zarconi J. Can compassion be taught? Let's ask our students. Journal of general internal medicine. 2008;23:948-53.
46. Co^te´ L, Laughrea P-A. Preceptors' Understanding and Use of Role Modeling to Develop the CanMEDS Competencies in Residents. Academic Medicine. 2014;89(6):934-9.
47. Lombarts KM, Verghese A. Medicine is not gender-neutral—She is male. N Engl J Med. 2022;386:1284-7.
48. Lindberg O. Gender and role models in the education of medical doctors: a qualitative exploration of gendered ways of thinking. Int J Med Educ. 2020;11:31-6.
49. Sinsky CA, Shanafelt TD, Ristow AM, editors. Radical reorientation of the US health care system around relationships: rebalancing the transactional model. Mayo Clinic Proceedings; 2022: Elsevier.
50. Rosenbaum L. On Calling - From Privileged Professionals to Cogs of Capitalism? N Engl J Med. 2024;390(5):471-5.
51. Krull K, Mansfield J, Gentry J, Grimley K, Jacobs B, Wolf J. Breaking the transactional mindset: A new path for healthcare leadership built on a commitment to human experience. Patient Experience Journal. 2023;10(3):6-12.
52. Shanafelt T, Trockel M, Rodriguez A, Logan D. Wellness-Centered Leadership: Equipping Health Care Leaders to Cultivate Physician Well-Being and Professional Fulfillment. Academic medicine : journal of the Association of American Medical Colleges. 2021;96(5):641-51.
53. Rosenbaum L. Beyond moral injury—can we reclaim agency, belief, and joy in medicine? : Mass Medical Soc; 2024. p. 951-5.
54. Hodkinson A, Zhou A, Johnson J, Geraghty K, Riley R, Zhou A, et al. Associations of physician burnout with career engagement and quality of patient care: systematic review and meta-analysis. Bmj. 2022;378:e070442.
55. West CP, Dyrbye LN, Shanafelt TD. Physician burnout: contributors, consequences and solutions. Journal of internal medicine. 2018;283(6):516-29.
56. Brown S, Gunderman RB. Viewpoint:: Enhancing the Professional Fulfillment of Physicians. Academic Medicine. 2006;81(6):577-82.
57. Integraal ZorgAkkoord. Samen werken aan gezonde zorg.; 2022.
58. Specialisten FM. Medisch Specialist 2035. Bevlogen, betrokken en verbindend. . Utrecht 2025.
59. Stanford Presence 5 webpage. Stanford [Available from: https://med.stanford.edu/presence/initiatives/stanford-presence-5.html.

60. Zulman DM, Haverfield MC, Shaw JG, Brown-Johnson CG, Schwartz R, Tierney AA, et al. Practices to Foster Physician Presence and Connection With Patients in the Clinical Encounter. JAMA. 2020;323(1):70-81.
61. Verghese A. The importance of being. Health Affairs. 2016;35(10):1924-7.
62. Nadkarni A, Harry E, Rozenblum R, Kimberly HH, Schissel SL, DeOliveira MC, et al. Understanding perceived appreciation to create a culture of wellness. Academic Psychiatry. 2022;46(2):228-32.
63. Pehlivan T, Güner P. Compassionate care: Benefits, barriers and recommendations. Journal of Psychiatric Nursing. 2020;11(2):148-53.
64. Tehranineshat B, Rakhshan M, Torabizadeh C, Fararouei M. Compassionate care in healthcare systems: a systematic review. Journal of the National Medical Association. 2019;111(5):546-54.
65. Masselink LE, Lee S-YD, Konrad TR. Workplace relational factors and physicians' intention to withdraw from practice. Health care management review. 2008;33(2):178-87.
66. Mallows JL. Qualitative study using grounded theory examining collegiality among emergency physicians. Emergency Medicine Australasia. 2023;35(3):398-405.
67. Thirumoorthy T. The professional role of the doctor as a colleague–cultivating healthy collegiality, the forgotten pillar of medical professionalism. SMA News. 2012:18-21.
68. Abedali S, van den Berg J, Smirnova A, Debets M, Bogerd R, Lombarts K. The WellNext Scan: Validity evidence of a new team-based tool to map and support physicians' well-being in the clinical working context. PLOS ONE. 2025;20(2):e0319038.
69. Rushton CH. Moral resilience: Transforming moral suffering in healthcare: Oxford University Press; 2024.
70. Waterman AS. Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. Journal of personality and social psychology. 1993;64(4):678.
71. Antonsdottir I, Rushton CH, Nelson KE, Heinze KE, Swoboda SM, Hanson GC. Burnout and moral resilience in interdisciplinary healthcare professionals. Journal of clinical nursing. 2022;31(1-2):196-208.
72. Dominguez LC, Stassen L, de Grave W, Sanabria A, Alfonso E, Dolmans D. Taking control: Is job crafting related to the intention to leave surgical training? PloS one. 2018;13(6):e0197276.
73. Dominguez LC, Dolmans D, de Grave W, Sanabria A, Stassen LP. Job Crafting to Persist in Surgical Training: A Qualitative Study From the Resident's Perspective. Journal of Surgical Research. 2019;239:180-90.
74. Horowitz CR, Suchman AL, Branch Jr WT, Frankel RM. What do doctors find meaningful about their work? : American College of Physicians; 2003.
75. Tan DY, Ter Meulen BC, Molewijk A, Widdershoven G. Moral case deliberation. Practical neurology. 2018;18(3):181-6.
76. Mills J, Chapman M. Compassion and self-compassion in medicine: Self-care for the caregiver. The Australasian Medical Journal. 2016;9(5):87-91.
77. Hussein A. The use of triangulation in social sciences research: can qualitative and quantitative methods be combined? Journal of comparative social work. 2009;4(1):106-17.
78. Shanafelt TD, Schein E, Minor LB, Trockel M, Schein P, Kirch D. Healing the Professional Culture of Medicine. Mayo Clinic Proceedings. 2019;94(8):1556-66.

79. Trockel M, Sinsky C, West CP, Dyrbye LN, Tutty M, Carlasare L, et al., editors. Self-valuation challenges in the culture and practice of medicine and physician well-being. Mayo Clinic Proceedings; 2021: Elsevier.

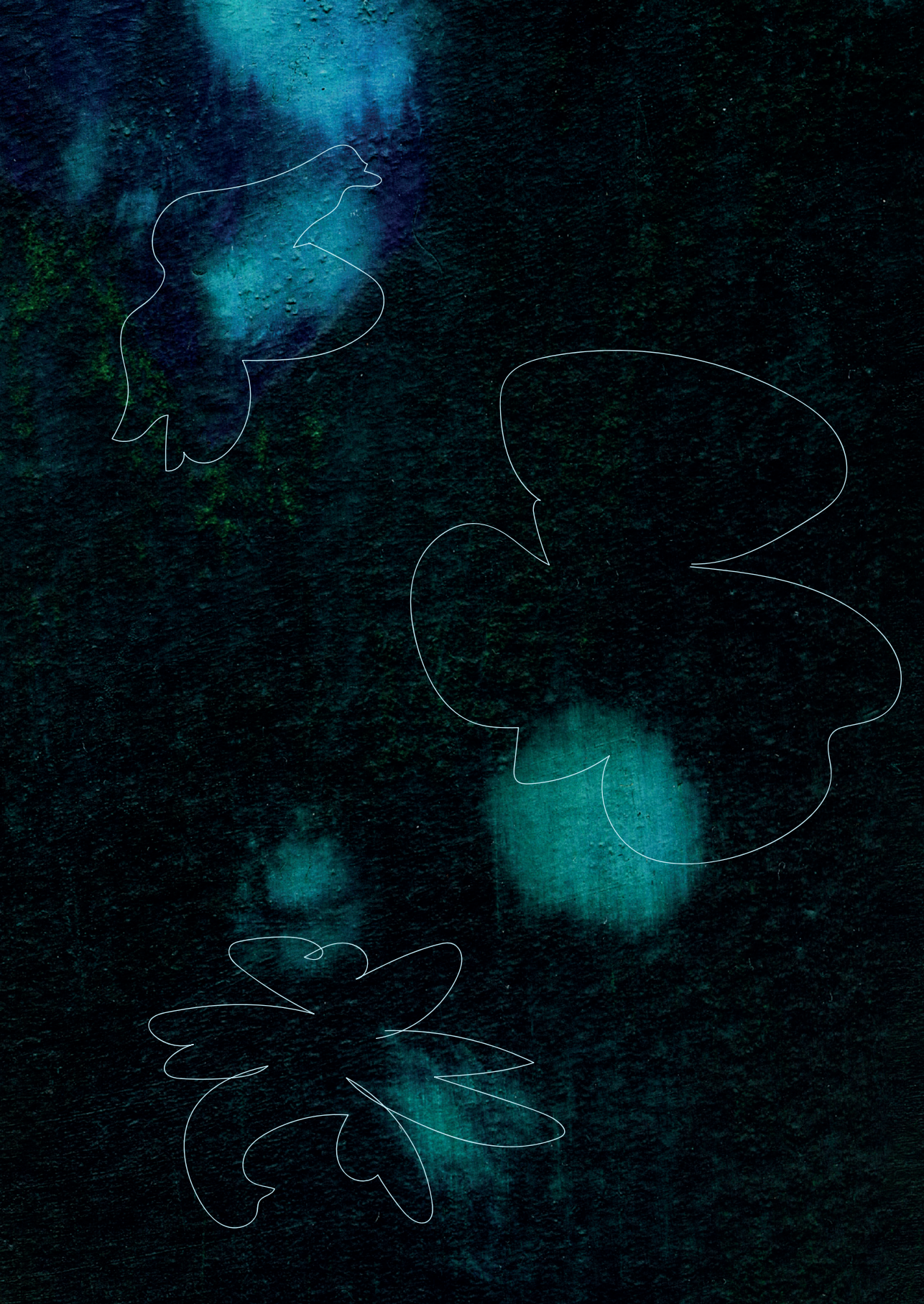
80. Trockel M. Calling, compassionate self, and cultural norms in medicine. The Art and Science of Physician Wellbeing: A Handbook for Physicians and Trainees. 2019:3-17.

81. Kuhn CM, Flanagan EM. Self-care as a professional imperative: physician burnout, depression, and suicide. Canadian Journal of Anesthesia. 2017;64(2):158.

82. Martin SR, Fortier MA, Heyming TW, Ahn K, Nichols W, Golden C, et al. Perfectionism as a predictor of physician burnout. BMC Health Services Research. 2022;22:1-7.

83. Kleinhendler-Lustig D, Hamdan S, Mendlovic J, Gvion Y. Burnout, depression, and suicidal ideation among physicians before and during COVID-19 and the contribution of perfectionism to physicians' suicidal risk. Frontiers in psychiatry. 2023;14:1211180.

84. Verma A. Using audio-diaries for research and education: AMEE Guide No. 144. Medical Teacher. 2021;43(12):1346-52.



# Chapter 7

## ENGLISH SUMMMARY

**Chapter 1** introduces physician flourishing, operationalized as feelings of professional fulfillment and being able to deliver compassionate care, as the topic of this thesis. In this chapter, I describe how both elements are under pressure today and I zoom in on physicians' perfectionism/ self-criticism and deprioritizing self-care as two of the dominant cultural challenges to physician flourishing. Logically following from this, I introduce 'cultures of wellness' as the theoretical lens used to study the topic of this thesis. Cultures of wellness can be defined as "a set of normative values, attitudes, and behaviors that promote self-care, personal and professional growth, and compassion for colleagues, patients and self". In general, cultures of wellness have been found to be robust determinants of physicians' professional fulfillment and their ability to deliver compassionate patient care. There are, however, still many gaps in our knowledge with regards to physician flourishing in the context of cultures of wellness. There is a need for more understanding on how elements of cultures of wellness may affect physicians' flourishing, both for faculty and for residents. Additionally, there is not much research on elements of cultures of wellness and physician flourishing in the Dutch healthcare setting. Therefore, the overarching research question of this thesis is:

*What role do elements of cultures of wellness play in Dutch physicians' professional fulfillment and compassionate care practices?*

By answering the research question, this thesis aims to offer starting points for fostering cultures of wellness in medicine and (post-graduate) medical education to contribute to a professionally fulfilled, sustainable, and high-performing medical workforce.

To help close the gap in research on professional fulfillment and its determinants among Dutch physicians, **Chapter 2** provides a holistic perspective on Dutch physicians' well-being and specifically their levels of professional fulfillment. In a representative sample of 374 registered cardiologists using a web-based survey, we investigated how Dutch physicians experience their positive (professional fulfillment) and negative (work exhaustion and interpersonal disengagement) work-related well-being and what cultural and other aspects determine these experiences. We used frequencies to depict scores on the three well-being indicators and performed three multiple regression analyses to elucidate their determinants. We found that Dutch cardiologists experienced relatively high levels of professional fulfillment, for which satisfying and meaningful patient interactions were the greatest predictor. In addition, Dutch cardiologists' levels of professional fulfillment were positively affected by a good person job-fit and high levels of personal resilience, as well as a sense of autonomy and involvement in overall managerial decision-making. Experienced workload, work-home interference and (negative) team atmosphere were related to the negative well-being dimensions. The findings of this chapter show that it is critical to invest in physicians' resources of energy. Promoting the well-being of cardiologists seems most effective by boosting, for example, their professional autonomy and ensuring satisfying physician-patient interactions.



While investing in energy-providing resources may be an effective strategy to promote physicians' flourishing, our introductory chapter shows that it is equally crucial to be aware of cultural challenges to physician flourishing within the profession. In striving to deliver high-quality patient care physicians often develop perfectionistic mindsets, a self-critical attitude and low self-tolerance. Both perfectionism and self-criticism have been associated with burnout in physicians. A kinder attitude towards the self, i.e. self-kindness, has been found to buffer against stress and burnout.

Self-kindness refers to being gentle, supportive and understanding towards the self, instead of being harsh and self-critical. While ample evidence shows that self-kindness is associated with reduced burnout in physicians, up till now research on the relationship between self-kindness and professional fulfillment remained largely underexplored.

**Chapter 3** therefore explored to what extent a kinder attitude towards the self, i.e. self-kindness, was associated with physicians' professional fulfillment and whether this relationship was mediated by personal resilience and work-home interference (the two mediators were selected based on relevant literature). Using the same sample as used in chapter 2, we performed a parallel mediation analysis with Hayes' SPSS macro PROCESS v3.5. The findings in this chapter show that Dutch cardiologists reported moderate levels of self-kindness, and that self-kind cardiologists experienced higher levels of professional fulfillment, which was partly explained by the fact that they were more resilient and better able to manage their work-life balance. We speculated that resilient physicians may find more time and space to enjoy positive feelings and opportunities at work, important indicators of professional fulfillment. Additionally, our findings show that self-kindness may be associated with self-care skills, as it seems that better self-care skills could indeed result in more effectively reducing work's negative impact on physicians' personal spheres- thereby improving their feelings of professional fulfillment. Research has shown that self-kindness is a trainable skill, which may be developed through exercises included in evidence-based self-compassion training programs. Physicians and healthcare organizations responsible for the well-being of the medical workforce may include such programs in their well-being enhancing strategies. More so, the results of this study seem to suggest that physicians operating in demanding work environments with a focus on efficiency, productivity and competitiveness may comfortably be more self-kind instead of being harsh and judgmental towards themselves. Doing so will

likely benefit their own well-being and thereby ultimately optimize the quality of patient care. Self-kindness is frequently mentioned as a contributing factor or even prerequisite for the ability to be kind or compassionate towards others. As being compassionate towards patients is crucial for high quality care, being more kind towards themselves may not only benefit physicians but also their patients. Despite the fact that compassion is a crucial element of high quality patient care, caring for patients with compassion is not self-evident. Some faculty show more compassion than others. Research suggests that there are individual attributes, experiences and characteristics that can be associated with the variation in clinicians' expressions of compassionate behavior towards patients. Gender may be such a characteristic. Given that role modelling is crucial for instilling compassion skills in future doctors, some faculty fail to role model compassion in practice and that it is largely a matter of chance which role models residents encounter during their training, more insight into the effect of faculty gender on the relationship is needed.

In **chapter 4**, we therefore analyzed 12416 resident evaluations of 2399 faculty members across 22 Dutch hospitals. Using descriptive statistics, we investigated to what extent residents observe faculty showing compassionate behavior towards patients and families during their training. Additionally, we built and tested a multivariate general linear model to explore the relation between faculty's observed compassionate behavior and them being seen as role models. Our findings in this chapter showed that supervisors' showing compassion towards patients in practice is indeed observed by residents, and that role modelling may therefore be an effective strategy in teaching residents how to become compassionate caregivers. The element of showing compassion in post-graduate medical educational cultures may therefore stimulate future physicians' flourishing in terms of becoming compassionate caregivers. Female faculty slightly but significantly outperformed their male peers on both role modelling and compassionate behavior scores.

However, when male faculty showed compassion, this positively reflected on their role model status more than when female faculty demonstrated compassion. In showing this, chapter 4 contributes to the growing understanding that the medical profession is not gender-neutral. On the whole, this chapter shows that compassion is being seen and appreciated by residents and could therefore increase knowledge among faculty about the impact of their behaviors towards patients and families. Variation in staff groups, e.g. with regards to gender, may be a practical and potentially beneficial strategy for transferring a range of compassion skills to future doctors. In addition, future research could be aimed at revealing and understanding differences in expressing compassionate behavior between (female and male) faculty in a qualitative way. These insights can be used to inform teacher training courses as well as courses on compassion in the (post-graduate) medical curriculum.

The previous chapters quantitatively looked at a variety of elements of cultures of wellness in relation to physician flourishing: collegiality and team atmosphere, psychological safety, self-kindness and a healthy work-life balance. A major and largely overlooked element of cultures of wellness in the literature was perceived appreciation. It was unclear how appreciation at work manifested in the eyes of residents, as well as how it would impact their levels of professional fulfillment and compassionate care practices. Because residents are in the unique position of being both fully part of the health care team and still in training, their experiences may differ from those of faculty. Hence, and in light of the pressing workforce and retention challenges that residency programs face, an in-depth exploration of how appreciation at work manifests in the eyes of residents is needed as well as how the underlying mechanisms between appreciation and professional fulfillment and performance work for them.

Continuing within the field of post-graduate medical education, **chapter 5,** based on open-ended interviews with 12 residents from different specialties, training years, regions in the Netherlands, and genders, explored how appreciation at work manifests for residents and how it impacts their flourishing. Findings revealed that feeling appreciated, being seen and heard as a unique person, was crucial for residents' professional fulfillment and compassionate care practices. Residents narrated their experiences with appreciation at work coming from three narratives, namely as learner, physician or colleague and employee. The dominant narrative was dependent on personal preferences and characteristics, year of education, medical specialty, previous experiences, and other contextual factors. In general, residents mentioned that the experience of feeling valued was more intense when they were appreciated for something they highly valued themselves and when appreciation was expressed at an unexpected moment. Appreciation, residents said, relieved their stress levels, made them more confident and prouder of themselves, enhanced their motivation and commitment and stimulated the feeling of being able to contribute to patients' (quality of) lives – all positively reflecting on their feelings of fulfillment and the ability to provide compassionate care.



All in all, this thesis explored whether and how elements of cultures of wellness impact Dutch physicians' flourishing – or, more specifically, their professional fulfillment and compassionate care practices. **Chapter 6** provides an answer to this question by arguing that cultures of wellness play a role in physicians' flourishing via three overlapping themes. Elements of cultures of wellness may help physicians to find 'Meaning in work' and support them and their organizations to restore and foster 'Kindness in the workplace'. On a more systemic level, we conclude that placing 'Human connections at the core of practice' will most likely support physician flourishing and contribute to ensuring sustainable healthcare systems capable of delivering high-quality patient care.

In summary, our exploration of (elements of) cultures of wellness suggests that it may be timely to reimagine and reinforce the relational model in healthcare. In order to do so, I have argued for three potentially helpful strategies: 1) (Stimulate physicians and other healthcare workers to) invest in interpersonal relationships with both patients and colleagues, 2) Explicitly start conversations around professionals' core values and 3) Incorporate leadership strategies that are aimed at normalizing (self-)kindness in medical practice and post-graduate medical education. I hope that the insights of this thesis continue to find their way into practice and that the members of the profession feel the courage and find the tools to collectively foster a culture that promotes meaning and kindness. After all, it doesn't cost us anything to be kind.

## NEDERLANDSE SAMENVATTING

**Hoofdstuk 1** introduceert het concept "floreren" van artsen, geoperationaliseerd als gevoelens van professionele voldoening en het vermogen om compassievol te handelen, als het centrale thema van dit proefschrift. In dit hoofdstuk beschrijf ik hoe beide elementen momenteel onder druk staan en zoom ik in op perfectionisme/zelfkritiek en het negeren van zelfzorg als twee dominante culturele uitdagingen voor het floreren van artsen. Vanuit deze problematiek introduceer ik 'welzijnsculturen' als het theoretisch kader van waaruit het onderwerp van dit proefschrift wordt bestudeerd. Welzijnsculturen kunnen worden gedefinieerd als "een set van normatieve waarden, houdingen en gedragingen die zelfzorg, persoonlijke en professionele groei, en compassie voor collega's, patiënten en zichzelf bevorderen." Welzijnsculturen blijken een belangrijke voorspeller van zowel de professionele voldoening van artsen als hun vermogen om compassievolle patiëntenzorg te leveren. Er bestaan nog aanzienlijke kennishiaten ten aanzien van het floreren van artsen binnen de context van welzijnsculturen. Er is meer inzicht nodig in hoe elementen van deze culturen bijdragen aan het floreren van artsen — zowel bij specialisten als bij artsen in opleiding tot medisch specialist. Bovendien is er nog weinig onderzoek gedaan naar welzijnsculturen in relatie tot het floreren van artsen in de Nederlandse zorgcontext. Daarom luidt de overkoepelende onderzoeksvraag van dit proefschrift:

*Welke rol spelen elementen van welzijnsculturen in de professionele voldoening en het compassievol handelen van Nederlandse artsen?*

Door deze onderzoeksvraag te beantwoorden, beoogt dit proefschrift handvatten te bieden voor het versterken van welzijnsculturen binnen de geneeskunde en de medisch-specialistische vervolgopleiding, met als doel bij te dragen aan een professioneel voldane, duurzaam inzetbare en goed functionerende beroepsgroep van artsen.

Om de onderzoekskloof rond professionele voldoening en haar determinanten onder Nederlandse artsen te overbruggen, biedt **hoofdstuk 2** een holistisch perspectief op het welzijn van Nederlandse artsen, met specifieke aandacht voor de ervaren professionele voldoening. Met behulp van een online survey onder 374 geregistreerde cardiologen onderzochten we hoe zij hun positieve (professionele voldoening) en negatieve (werkuitputting en interpersoonlijke distantie) werkgerelateerde welzijn ervaren en welke culturele en andere factoren dit welzijn beïnvloeden. We gebruikten frequentieanalyses om de scores op de drie welzijnsindicatoren weer te geven en voerden drie multipele regressieanalyses uit om de determinanten ervan in kaart te brengen. De resultaten toonden aan dat Nederlandse cardiologen relatief veel professionele voldoening ervaren met betekenisvolle interacties met patiënten als sterkste voorspeller. Daarnaast werd professionele voldoening positief beïnvloed door een goede 'person-job fit', hoge persoonlijke veerkracht, en een gevoel van autonomie en betrokkenheid bij managementbesluiten. Negatieve welzijnsuitkomsten bleken vooral samen te hangen met werkdruk, werk-privébalans en een negatieve teamsfeer. Deze bevindingen benadrukken vooral het belang van investeren in energiebronnen voor artsen, zoals het versterken van professionele autonomie en het bevorderen van bevredigende arts-patiëntinteracties.

Hoewel investeren in energiegevende hulpbronnen een effectieve strategie lijkt om het floreren van artsen te bevorderen, laat het eerste hoofdstuk ook zien dat het minstens zo belangrijk is om bewust te zijn van culturele uitdagingen binnen het beroep. In hun streven

naar hoogwaardige patiëntenzorg ontwikkelen artsen vaak perfectionistische denkpatronen, een zelfkritische houding en weinig zelfverdraagzaamheid. Zowel perfectionisme als zelfkritiek worden in verband gebracht met burn-out klachten. Een mildere houding ten opzichte van zichzelf — zelfvriendelijkheid — blijkt daarentegen een beschermende werking te hebben tegen stress en burn-out. Zelfvriendelijkheid verwijst naar een vriendelijke, ondersteunende en begripvolle houding tegenover zichzelf, in plaats van hard en veroordelend te zijn. Hoewel er veel bewijs is dat zelfvriendelijkheid samenhangt met minder burn-out onder artsen, is er tot op heden weinig bekend over de relatie tussen zelfvriendelijkheid en het ervaren van professionele voldoening.

**Hoofdstuk 3** onderzocht daarom in hoeverre een mildere houding ten opzichte van zichzelf (zelfvriendelijkheid) samenhangt met professionele voldoening, en of deze relatie wordt gemedieerd door persoonlijke veerkracht en werk-privébalans (twee mediatoren geselecteerd op basis van relevante literatuur). We gebruikten dezelfde steekproef als in hoofdstuk 2 en voerden een parallelle mediatieanalyse uit met de SPSS-macro PROCESS v3.5 van Hayes. De bevindingen tonen aan dat Nederlandse cardiologen matige niveaus van zelfvriendelijkheid rapporteerden, en dat zelfvriendelijke cardiologen meer professionele voldoening ervoeren. Dit verband werd deels verklaard doordat zij veerkrachtiger waren en beter in staat hun werk-privébalans te bewaken. We speculeerden dat veerkrachtige artsen meer ruimte en tijd vinden om positieve gevoelens en kansen op het werk te ervaren – beide belangrijke indicatoren van professionele voldoening. Daarnaast wijzen onze bevindingen erop dat zelfvriendelijkheid mogelijk samenhangt met vaardigheden op het gebied van zelfzorg, wat artsen beter in staat stelt de negatieve impact van werk op hun privéleven te reduceren. Zelfvriendelijkheid is een trainbare vaardigheid, die ontwikkeld kan worden via oefeningen in effectief bewezen zelfcompassietrainingen.

Zowel artsen als zorgorganisaties die verantwoordelijk zijn voor het welzijn van hun medewerkers, zouden deze trainingen kunnen opnemen in hun welzijnsbeleid. De resultaten van dit onderzoek suggereren bovendien dat artsen in veeleisende werkomgevingen, waarin productiviteit en efficiëntie centraal staan, vriendelijker naar zichzelf mogen zijn — in plaats van hard en veroordelend. Dit komt hun welzijn én uiteindelijk de kwaliteit van de patiëntenzorg ten goede. Zelfvriendelijkheid wordt vaak genoemd als voorwaarde voor het tonen van compassie naar anderen. Omdat compassie jegens patiënten cruciaal is voor hoogwaardige zorg, komt meer zelfvriendelijkheid niet alleen artsen ten goede, maar ook hun patiënten. Compassievolle zorgverlening is echter geen vanzelfsprekendheid. Sommige opleiders tonen meer compassie dan anderen. Onderzoek wijst uit dat persoonlijke kenmerken, ervaringen en eigenschappen samenhangen met de mate waarin artsen compassievol gedrag tonen naar patiënten. Een van de mogelijke kenmerken zou gender kunnen zijn. Omdat rolmodellen cruciaal zijn voor het aanleren van compassievolle zorgverlening bij medisch specialisten in opleiding, en het grotendeels toeval is welke rolmodellen een aios tijdens haar of zijn opleiding tegenkomt, is meer inzicht in de rol van gender hierin wenselijk.



In **hoofdstuk 4** analyseerden we 12.416 opleidingsevaluaties (SETQ) die door aios voor 2399 medisch specialisten in 22 Nederlandse ziekenhuizen werden ingevuld. Aan de hand van beschrijvende statistiek onderzochten we in hoeverre aios tijdens hun opleiding observeerden dat opleiders compassievol gedrag toonden richting patiënten en hun families. Daarnaast bouwden en testten we een multivariaat algemeen lineair model (ALM) om de relatie te onderzoeken tussen het waargenomen compassievol gedrag van opleiders en hun status als rolmodel. De resultaten toonden aan dat aios daadwerkelijk het compassievol gedrag van supervisoren in de praktijk observeren, wat suggereert dat voorbeeldgedrag

vertonen – d.w.z. een rolmodel zijn - een effectieve strategie kan zijn om aios te leren hoe een compassievolle zorgverlener te zijn. Het demonstreren van compassie in de praktijk door supervisoren kan dus bijdragen aan het floreren van toekomstige artsen als compassievolle zorgverleners. Vrouwelijke opleiders scoorden iets hoger dan hun mannelijke collega's op zowel het tonen van compassievol gedrag als het gezien worden als rolmodel. Opvallend was echter dat wanneer mannelijke opleiders compassie toonden, dit sterker bijdroeg aan hun status om als rolmodel gezien te worden dan wanneer vrouwelijke opleiders hetzelfde gedrag vertoonden. Deze bevindingen dragen bij aan het groeiende inzicht dat de medische professie niet genderneutraal is. Over het geheel genomen benadrukt dit hoofdstuk dat compassie wordt gezien en gewaardeerd door aios, wat het belang onderstreept van het bewustzijn van opleiders over de impact van hun gedrag richting patiënten en hun families. Diversiteit binnen stafgroepen — zoals variatie in de gendersamenstelling van de groep — zou een praktische en waardevolle strategie kunnen zijn om een breed scala aan compassievaardigheden over te dragen aan toekomstige artsen. Verder onderzoek zou zich kunnen richten op het kwalitatief ontrafelen van verschillen in compassievol gedrag tussen (vrouwelijke en mannelijke) opleiders. Deze inzichten kunnen worden gebruikt bij de ontwikkeling van train-de-trainer-programma's en het integreren van compassieonderwijs in de medische vervolgopleiding.

De voorgaande hoofdstukken onderzochten op kwantitatieve wijze de relatie tussen diverse elementen van welzijnsculturen en het floreren van artsen: collegialiteit en teamsfeer, psychologische veiligheid, zelfvriendelijkheid en een gezonde werk-privébalans. Een belangrijk maar in de literatuur onderbelicht element van welzijnsculturen is ervaren waardering. Het was onduidelijk hoe waardering op het werk zich manifesteert voor aios, en wat de impact hiervan is op hun professionele vervulling en de mogelijkheid om compassievolle zorg te leveren. Aios bevinden zich in de unieke positie door volwaardig onderdeel te zijn van het zorgteam en tegelijkertijd nog in opleiding te zijn. Hun ervaringen

kunnen dan ook verschillen van die van medisch specialisten. Gezien de grote personele uitdagingen, zoals de uitstroomproblematiek, binnen de medische vervolgopleidingen, is het nodig om diepgaand te onderzoeken hoe waardering zich manifesteert in de ogen van aios, en hoe deze waardering bijdraagt aan hun floreren als arts.

Daarom verkenden we in **hoofdstuk 5**, op basis van open interviews met een mix van 12 mannelijk en vrouwelijke aios uit verschillende specialismen, opleidingsjaren en regio's in Nederland, hoe aios waardering op het werk ervaren en hoe dit hun professionele voldoening beïnvloedt. De resultaten laten zien dat het gevoel gewaardeerd te worden— gezien en gehoord worden als uniek persoon — essentieel is voor professionele voldoening en het leveren van compassievolle zorg. Aios beschreven hun ervaringen rondom waardering op het werk vanuit drie narratieven: als opleideling, arts/collega en medewerker. Het dominante narratief was afhankelijk van persoonlijke voorkeuren, opleidingsjaar, medisch specialisme, eerdere ervaringen en andere contextuele factoren. In het algemeen gaven aios aan dat het gevoel van waardering sterker was wanneer zij gewaardeerd werden voor iets dat zij zelf belangrijk vonden, en wanneer waardering op een onverwacht moment werd geuit. Volgens de aios verlaagde (de ervaring van) waardering hun stresslevels, vergrootte het hun gevoelens van zelfvertrouwen en trots, versterkte het hun motivatie en betrokkenheid, en gaf het hen het gevoel daadwerkelijk bij te dragen aan de kwaliteit van leven van patiënten. Deze factoren dragen allen positief bij aan hun professionele voldoening en vermogen om compassievolle zorg te leveren.



Samenvattend heeft dit proefschrift onderzocht of en hoe elementen van 'culturen van welzijn' invloed hebben op het floreren van Nederlandse artsen – of, meer specifiek, op hun professionele voldoening en hun vermogen om compassievol te handelen. **Hoofdstuk 6** geeft een antwoord op deze vraag door te betogen dat welzijnsculturen een rol spelen in het floreren van artsen via drie overlappende thema's. Elementen van welzijnsculturen kunnen

artsen helpen om (1) 'Betekenis in werk' te vinden, en (2) hen én hun organisaties te ondersteunen bij het herstellen en bevorderen van 'Vriendelijkheid op de werkvloer'. Op een meer systemisch niveau concluderen we dat (3) het centraal stellen van 'Menselijke verbindingen in de zorgpraktijk' zeer waarschijnlijk het floreren van artsen bevordert en bijdraagt aan het waarborgen van (duurzame) zorgsystemen die in staat zijn hoogwaardige patiëntenzorg te leveren. Met andere woorden, op basis van onze verkenning van welzijnsculturen, concluderen we dat het tijd is om het relationele model in de gezondheidszorg opnieuw te prioriteren, vorm te geven en te versterken. Om dit te realiseren heb ik drie mogelijk behulpzame strategieën voorgesteld: 1) (Stimuleer artsen en andere zorgverleners om te) investeren in interpersoonlijke relaties met zowel patiënten als collega's, 2) Voer expliciet het gesprek over de kernwaarden van zorgprofessionals, en 3) Integreer leiderschapsstrategieën die gericht zijn op het normaliseren van (zelf-)vriendelijkheid in de medische praktijk en in de vervolgopleiding van artsen.

Ik hoop dat de inzichten uit dit proefschrift hun weg blijven vinden naar de praktijk en dat leden van de beroepsgroep de moed voelen en de middelen vinden om gezamenlijk een cultuur te creëren die betekenis en vriendelijkheid stimuleert en de mens(elijke waarden) weer centraal stelt. Want uiteindelijk kost het niks om vriendelijk te zijn naar elkaar.

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Affiliations reported as per publication or title page of the particular study.

**Chapter 2. Work-related well-being among Dutch cardiologists – A national survey**

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| **KL** | X | | X | | X | | X | | X |

Relevant CRediT roles: Conceptualization (C), Formal Analysis (Fa), Funding Acquisition (Faq), Investigation (I), Methodology (M), Project Administration (Pa), Supervision (S), Writing – orgininal draft (W-od), Writing – review & editing (W-re)



**Chapter 3. The relationship between physicians' self-kindness and professional fulfillment and the mediating role of personal resilience and work-home interference: A cross-sectional study.**

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Relevant CRediT roles: Conceptualization (C), Formal Analysis (Fa), Funding Acquisition (Faq), Investigation (I), Methodology (M), Project Administration (Pa), Supervision (S), Writing – orgininal draft (W-od), Writing – review & editing (W-re)

## Chapter 4. Compassionate behavior of clinical faculty: associations with role modelling and gender specific differences.



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Relevant CRediT roles: Conceptualization (C), Formal Analysis (Fa), Funding Acquisition (Faq), Investigation (I), Methodology (M), Project Administration (Pa), Supervision (S), Writing – orgininal draft (W-od), Writing – review & editing (W-re)

## Chapter 5. Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees

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| **KL** | X | X | | | X | | X | | X |

Relevant CRediT roles: Conceptualization (C), Formal Analysis (Fa), Funding Acquisition (Faq), Investigation (I), Methodology (M), Project Administration (Pa), Supervision (S), Writing – orgininal draft (W-od), Writing – review & editing (W-re)

## PHD PORTFOLIO

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| Project management. Graduate school for medical sciences, University of Amsterdam | 2021 | 1.9 |
| Talents in PhD. Graduate school for medical sciences, University of Amsterdam | 2021 | 0.2 |
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| Career development. Graduate school for medical sciences, University of Amsterdam | 2022 | 0.8 |
| **Seminars, workshops and master classes** | | |
| Voorjaarsbijeenkomst Verbinden & Versterken (organizing committee), Department of Medical Psychology, Amsterdam | 2020 | 1 |
| Symposium (organizing committee and workshop provider): Waanzinnige Zorg, Research group PP&CC, Amsterdam | 2021 | 1.5 |
| Workshop: De waanzinnige dokter, (zelf)compassie in de zorg, Nederlandse Vereniging voor Medisch Onderwijs (NVMO), Maastricht, The Netherlands. | 2023 | 0.5 |

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| **Presentations** | | |
| Werk-gerelateerd welzijn van de Nederlandse cardioloog (online). NVVC voorjaarscongres. Den Bosch. | 2022 | 0.5 |
| De relatie tussen zelfcompassie en professionele voldoening. NVMO. Online. | 2022 | 0.5 |
| Physician flourishing. Rogano. Lyon, France. | 2022 | 0.5 |
| Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees. First Nordic Conference on Medical Workplace Learning. Stalheim, Norway | 2023 | 0.5 |
| Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees. Glasgow, Schotland. | 2023 | 0.5 |
| Appreciating appreciation: residents experience feeling valued differently as learners, physicians and employees. Regionale opleidingsavond Neurologie Erasmus. Rotterdam. | 2023 | 0.5 |
| De zorgverlener in de toekomst: hoe houden we het voor iedereen behapbaar? Hartfalen symposium 2025. Vaalsbroek. | 2025 | 0.5 |
| Fit en vitaal: een blik op werkgeluk. Strategiemiddag Cardiologie Erasmus. Rotterdam. | 2025 | 0.5 |
| **(Inter)national conferences** | | |
| Nederlandse Vereniging voor Medisch Onderwijs (NVMO). Online; Maastricht, The Netherlands; Egmond aan Zee, The Netherlands. | 2021-2023 | 1.5 |
| Association for Medical Education in Europe (AMEE). Lille, France. | 2022 | 0.5 |
| Rogano Conference on Medical Education. Lyon, France; Glasgow, Schotland. | 2022-2023 | 0.5 |
| Promovendidag. Online; Utrecht, the Netherlands | 2021-2022 | 0.2 |
| The First Nordic Conference on Medical Workplace Learning. Stalheim; Norway. | 2023 | 0.2 |

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| **Other** | | |
| Research meetings and days at the Department of Medical Psychology, Amsterdam UMC | 2020-2023 | 4 |
| Journal club | 2020-2021 | 2 |
| Statistics club | 2021-2023 | 2 |
| Amsterdam Public Health (APH) research institute, member of the Program Council of Quality of Care (regular meetings, reviewing grant proposals, co-organizing the APH Annual Meeting 2022 and APH junified events) | 2021-2024 | 8.5 |

| **2. Teaching** | | |
|---|---|---|
| | **Year** | **ECTS** |
| Professionele Ontwikkeling. Professional performance in de praktijk, Research group PP&CC and Faculty of Medicine, Amsterdam UMC | 2020-2023 | 2 |
| Discipline Overstijgend Onderwijs (DOO). De Vitale AIOS/ Fit to perform, Research group PP&CC, Amsterdam UMC | 2022-2023 | 2 |
| Dankbaarheid, waardering en professionaliteit: hoe gaat dat samen? Honours program evening, Faculty of medicine, University of Amsterdam | 2024 | 0.2 |

| **3. Parameters of Esteem** | |
|---|---|
| | **Year** |
| **Grants** | |
| APH Quality of Care travel grant | 2021 |

| **4. Publications** | |
|---|---|
| | **Year** |
| **Publications in this thesis** | |
| Bogerd, R., Debets, M. P., Keuken, D. G., Hassink, R. J., Henriques, J. P., & Lombarts, K. M. (2023). The relationship between physicians' self-kindness and professional fulfillment and the mediating role of personal resilience and work-home interference: A cross-sectional study. *Plos one, 18*(4). doi: 10.1371/journal.pone.0284507. | |

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|---|---|
| Bogerd, R., Silkens, M. E., Keuken, D. G., Hassink, R. J., Henriques, J. P., & Lombarts, K. M. (2023). Work-Related Well-Being Among Dutch Cardiologists–A National Survey. *Current problems in cardiology, 48*(4). doi: 10.1016/j.cpcardiol.2022.101538.<br><br>Bogerd, R., Silkens, M.E., Henriques J.P. & Lombarts, K. M. (2024) Appreciating appreciation: residents experience 'feeling valued' differently as learners, physicians and employees. *Academic Medicine 100*(5):578-584. doi: 10.1097/ACM.0000000000005959.<br><br>Bogerd R., Silkens, M.E., Boerebach, B., Henriques, J.P. & Lombarts, K. M. (2025) Compassionate behavior of clinical supervisors: associations with role modeling and gender specific differences. *Perspectives on Medical Education 14*(1), 118-128. doi: 10.5334/pme.148.<br><br>**Publications not in this thesis**<br><br>Debets, M. P., Jansen, I., Diepeveen, M., Bogerd, R., Molewijk, B. A., Widdershoven, G. A., & Lombarts, K. M. (2024). Compassionate care through the eyes of patients and physicians: An interview study. *Plos one*, *19*(7). doi: 10.1371/journal.pone.0305007<br><br>Abedali, S., van den Berg, J., Smirnova, A., Debets, M., Bogerd, R., & Lombarts, K. (2025). The WellNext Scan: Validity evidence of a new team-based tool to map and support physicians' well-being in the clinical working context. *Plos one*, *20*(2). doi: 10.1371/journal.pone.0319038. | |

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## ABOUT THE AUTHOR

Rosa Bogerd was born on 24 May 1993 in Utrecht, the Netherlands. She grew up in Wijk bij Duurstede together with her parents Jan and Karin and her sister Margriet. After graduating from the Revius Lyceum in Doorn, she started her bachelor's degree in Political Science at the University of Amsterdam. She completed her degree in 2014, including a minor in Conflict Studies. Rosa took a gap year in which she enjoyed working in hospitality and eventually took a three month trip to South East Asia together with friends. Although the discipline of Political Science with its focus on power structures and systems still was (and is) of great interest to her, Rosa increasingly felt the urge to reflect on other questions, such as what drives individual human beings and whether we can say something about right and wrong. Motivated by this interest, she started a 2 year master in Philosophy, Bioethics and Health which she complemented with a 1-year master in Public Administration – Governing Healthcare Renovation at the Free University of Amsterdam (VU). She completed both programs successfully, graduating cum laude from the latter. After her studies, Rosa worked as a junior researcher at Ten Have Change Management where she participated in various (international) projects. Drawn back to academia, she applied for the vacancy of junior researcher in a project on compassionate care at the Professional Performance & Compassionate Care research group at the Amsterdam University Medical Center. Within the group, she pursued her own PhD trajectory on physician flourishing and cultures of wellness. Towards the end of her PhD, Rosa started at the department of Ethics, Law and Humanities at the Amsterdam UMC, where she discovered a strong passion for teaching. Here she currently continues her academic career as a post-doctoral researcher and lecturer in Medical Ethics.

