

White Coats, Hidden Costs: Masculinity Contest Culture in Medicine and Its Impact  
on Physician Outcomes

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## **Abstract**

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Physician attrition has risen in recent years, drawing attention to the broader culture of medicine and its potential contribution to adverse outcomes such as poor mental health and wellbeing, and increased burnout, mistreatment, and dissatisfaction. Evidence suggests these challenges are particularly salient for women, who face significantly higher attrition rates than men. This study applied the masculinity contest culture (MCC) framework to medicine for the first time to examine how organizational norms may impact physician experiences and outcomes. MCC is defined by four norms, show no weakness, strength and stamina, put work first, and dog-eat-dog (Berdahl et al., 2018). Using a cross-sectional survey of US-based physicians (n=215), we assessed the impact of MCC on outcomes, including mental health, well-being, burnout, workplace incivility, turnover intentions, career satisfaction and job performance. The findings revealed that higher levels of MCC were associated with adverse outcomes among physicians, including lower well-being, greater mental health symptoms, workplace incivility, burnout, and turnover intentions. Gender moderated some relationships, such that MCC showed a stronger negative association with well-being for women physicians than men, and MCC was negatively associated with career satisfaction and self-rated job performance for women but not men. Exploratory analyses indicated that MCC was positively associated with turnover intentions among physicians with caregiving responsibilities, but not among non-caregivers. MCC was also linked to greater behavioral disengagement and self-blame among women, but not men. By extending the MCC framework to the medical profession, this study offers novel insight into how entrenched cultural norms contribute to physician attrition and undermine well-being, with particularly harmful

consequences for women. Recognizing the impact of MCC highlights the importance of cultural reform in medicine. Targeted interventions that challenge harmful norms and promote healthier organizational values could help reduce attrition, support physician well-being, and foster more sustainable medical workplaces.

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## **Dedication**

To my dad, who cared for women with compassion and dignity throughout his career in obstetrics and gynecology, and to my sister, who is forging her path as one of few women in surgery. This work is dedicated to you both, and to a future of medicine that more fully supports and values those who heal.

## Chapter 1: Introduction

Physician turnover has significantly increased over the past decade, with attrition rates rising from 5.3% in 2010 to 7.6% in 2018 (Bond et al., 2023). More recent data from 2019 to 2024, suggests that turnover has steadily increased, with just over 40% of physicians classified as at risk of leaving, expressing likeliness to leave as likely or very likely, with approximately 13% of those at-risk physicians reporting leaving their job (Jeppson & Anderson, 2024). This upward trend in turnover and attrition has increased concerns about the sustainability of the physician workforce, bringing into focus the working conditions within the medical profession (Shanafelt et al., 2019). Shanafelt et al. (2019) suggest that rising attrition is likely related to the pervasive issues in medicine, that span specialties, such as burnout, dissatisfaction, mistreatment, and declines in mental health and well-being among physicians.

At the same time, in recent years, there has been a significant increase in the number of women participating in the physician workforce. According to the Association of American Medical Colleges (AAMC), between 2004 and 2022, the percentage of women in the physician workforce increased from 26% to 38%, which means that women now make up over a third of those practicing medicine in the US (AAMC, 2023; Boyle et al., 2024). Furthermore, for the first time in history, women are now the majority in a few medical specialties, including pediatrics, obstetrics gynecology and dermatology (AAMC, 2022). This change in gender representation is further evidenced by the medical pipeline, where 54.6% of US medical school students are women for the first time in history during the 2023-2024 academic year (AAMC, 2024; Boyle et al., 2024). As more women graduate from medical school and enter the workforce, the gender gap in the medical field is likely to continue to narrow (AAMC, 2024; Boyle et al., 2024).

Although the gender gap in medicine is narrowing, female physicians continue to face barriers and remain underrepresented in most medical specialties (AAMC, 2023; Boyle et al., 2024). Data from the AAMC reveals that within the first six years of completing their training, women are eight times more likely than their male counterparts to be working part time (Paturel, 2019), and that female physicians' attrition rates are 38% higher than male physicians (Bond et al., 2023). Aligned with this, research by Chen et al. (2023) found that female physicians were more likely to leave academic medicine across all career stages, geographic regions and medical specialties in the US within a five-year period between 2014-2019. This data suggests that although women now make up the majority of medical school graduates, their higher attrition rate compared to men could slow progress in closing the gender gap (Chen et al., 2023). In addition, Chen et al. (2023) state that the current US projections estimate a physician shortage by 2034. The projected physician shortage highlights the importance of addressing this issue and stresses the need for interventions to improve retention, especially among female physicians (Chen et al., 2023).

Existing research suggests that this gendered attrition rate may be attributed to a myriad of factors (Bond et al., 2023; Chen et al., 2023; Schaechter et al., 2024). Overwhelmingly, literature has considered parental role, family obligations, and work-life conflict as the main reason for female physicians leaving medicine (Buddeberg-Fischer et al., 2010; Chen et al., 2022a; Chen et al., 2022b; Frank et al., 2019; Frank et al., 2021; Lyu et al., 2019). However, research by Chen et al. (2023) found that high attrition rates for female physicians continue across all career stages, which suggests that additional factors are likely contributing to this disparity. Research suggests that women in medicine have fewer career development opportunities, sponsorships, and role models compared to their male counterparts (Murphy et al., 2021; Ritcher et al., 2020; Carr et al., 2018; Li et al., 2021). Moreover, female physicians have also reported slower promotion rates,

underrepresentation in leadership positions, and lower compensation, which further hinder their opportunities for professional advancement (Carr et al., 2018). In addition to these challenges, female physicians experience unique challenges within the environment, which make their experience more difficult, including microaggressions, discrimination, and harassment from colleagues, staff and patients (Freischlag & Files, 2020; Hsaio et al., 2021). These barriers reinforce gender disparities in medicine and highlight the need to better understand the experiences of women physicians.

As outlined above, the very real, systemic challenges that reinforce and perpetuate gender disparities within medical institutions have been studied extensively. However, one area of study that has yet to be explored explicitly and may provide insight into the gender disparities is the *culture of medicine*. Organizational culture is powerful in shaping organizational life, through automatic patterns of perceiving, thinking and behaving within an organization (Schein, 1990). In this way, organizational culture significantly influences the development of systems that permit harmful behaviors to persist (Perry et al., 2020). Berdahl and colleagues (2018) created a theoretical framework, Masculinity Contest Culture (MCC), characterizing an organizational culture that is dominated by intense competition, where individuals advance through displaying four norms; show no weakness, strength and stamina, put work first, and dog-eat-dog (Berdahl et al., 2018). MCC is most prevalent in hierarchical, male dominated organizations, such as policing, firefighting, and STEM (Science, Technology, Engineering and Mathematics) (Glick et al., 2018; Rawski & Workman-Stark, 2018; Reid et al., 2018). Individuals who work in organizations characterized by MCC have been shown to prioritize status and success, at the expense of health, safety and well-being (Berdahl et al., 2018; Ely & Kimmel, 2018). Research has demonstrated that organizations that are high in MCC norms are associated with negative consequences at both the

organizational and individual levels (Rawski & Workman-Stark, 2018). Although these consequences affect all members of these workplaces, success within MCC work environments is often achieved through the exploitation and devaluation of minority men and women (Alonso, 2018; Glick et al. 2018; Matos et al., 2018; Rawski & Workman-Stark). Glick et al. (2018) found that MCC workplaces are often associated with higher levels of sexism, as well as increased instances of sexual and ethnic harassment.

Existing research suggests that medical institutions are likely to endorse the four MCC norms; show no weakness, strength and stamina, put work first, and dog-eat-dog, as these align closely with enduring values in medicine (Brown et al., 2021; Dawson, 2019; Van Wyk et al., 2016). For instance, Shanafelt and colleagues (2019) state that the medical profession often encourages, valorizes and rewards physician behavior which is centered on concealing vulnerability, working extreme hours, self-sacrifice, and high levels of competition (Shanafelt et al., 2019). While these expectations impact all physicians, they may be especially harmful to women, who must also contend with gender bias and other inequities (Chen et al., 2023). Therefore, utilizing the MCC framework would offer a more comprehensive understanding of how culture in medicine may be reinforcing these dynamics and why they disproportionately disadvantage female physicians.

The MCC theoretical framework has been effectively used to better understand organizational culture and related impacts in policing, firefighting, high-performance sport, business consulting, and STEM (Glick et al., 2018; Monton & Block, 2025; Monton et al., 2024; Rawski & Workman-Stark, 2018; Reid et al., 2018; Regina & Allen, 2023), but to date, no studies have applied the MCC framework to examine culture within the medical context and its related outcomes. The purpose of this study is to utilize the MCC framework to increase our understanding

of the pervasive organizational norms within medical organizations and their relationship physician outcomes, including mental health, well-being, burnout, mistreatment, and turnover intentions. Additionally, this study will also investigate how perceptions of MCC differ across gender, to better understand how the organizational culture in medicine, may shape the professional experiences of male and female physicians in different ways.

This study makes a few meaningful empirical contributions. First, extending the use of the MCC theoretical model to medicine, offers novel insights about the pervasive cultural norms that are shaping the medical profession, while providing an integrative approach to understanding how these deeply entrenched norms may be contributing to adverse outcomes like mental illness, burnout, mistreatment and attrition. Second, by investigating gender differences in the experiences of MCC, as it pertains to outcomes, this study contributes a new perspective to the broader discourse on gender disparities in medicine. Lastly, this area of inquiry offers a more nuanced understanding of the organizational culture in medicine, enabling the development of meaningful and targeted solutions, in turn, fostering more inclusive medical environments, ultimately aiding to increase retention.

## **Chapter 2: Literature Review**

In recent years, growing concerns about physician attrition, burnout, dissatisfaction, and well-being have prompted scholars to examine the broader systemic and cultural forces shaping the medical profession (Shanafelt et al., 2019). Shanafelt et al. (2019) highlight that many of the adverse outcomes facing the physician workforce, including poor mental health and well-being, burnout, mistreatment, and ultimately attrition, can likely be traced back to the culture of medicine, which has historically prioritized performance above all else, including physician health and well-being. As such, this literature review begins by exploring the culture of medicine broadly, followed by a review of adverse outcomes affecting the physician workforce. Notably, research indicates that female physicians are leaving medicine at disproportionately higher rates than their male counterparts, raising questions about the gendered dynamics which may be perpetuated through the culture of medicine (Chen et al., 2023; Schaechter et al., 2024). Therefore, this review of literature seeks to also examine this gendered attrition, by focusing on disparities in career advancement, experiences of harassment and discrimination, work-life conflict, mental health and burnout. In doing so, it brings into focus the culture of medicine which may be the underlying source of some of these issues, further sustaining inequities and hindering retention, especially for women. Lastly, this review of literature will demonstrate the relevance of the MCC, and how it may be used to facilitate a more nuanced understanding of attrition in medicine.

### **High Attrition Rates in Medicine**

In recent years, the attrition rates among physicians have been historically high, which may reflect increasing dissatisfaction with medical practice and/or workplace conditions (Bond et al., 2023; Chen et al., 2023; Schaechter et al., 2024; Shanafelt et al., 2017; Shanafelt et al., 2019).

Researchers have found that this is likely due to the mounting administrative burdens, long work hours, limited autonomy, and misaligned professional values which have contributed to increased feelings of disengagement and burnout across the profession (Shanafelt et al., 2016; Dyrbye et al., 2011; Shanafelt et al., 2022). In addition to the above, other issues like inadequate support, rigid hierarchies, and a culture that discourages vulnerability, have also created work environments that are often detrimental to physician well-being (Balch & Shanafelt, 2011; Gabbard, 1985; Wessely & Gerada, 2013; Shanafelt et al., 2019). High physician attrition is problematic for many reasons. First and foremost, based on current trends, the US will be facing a physician shortage by 2034, which has implications for the nation's health due to limited access to care, overburdened physicians and delayed diagnoses and treatments (Chen et al., 2023; Ehrenfeld, 2023). High attrition rates among physicians also challenge institutional financial stability, the delivery of high-quality patient care, and contributions to medical research and education (AAMC, 2023; Bond et al., 2023; Hamidi et al., 2018; Milewicz et al., 2015; Sabety et al., 2021; Schaechter et al., 2024; Shen et al., 2023).

Shanafelt et al. (2019) suggest that negative outcomes experienced by physicians are likely the underlying cause for physicians deciding to leave medicine altogether. Negative outcomes within the medical field have been well documented, including, mental health, well-being, burnout, and mistreatment (Grover et al., 2020; Shanafelt et al., 2022; Streed et al., 2024)

### ***Mental Health and Well-Being***

Physician mental health and well-being has become an increasing concern in recent years, due to several high-profile physician suicides and a growing body of research highlighting increased rates of psychological distress, mental illness, and suicide within the profession (Streed et al., 2024). According to Mihailescu and Neiterman (2019), extensive work hours, high-pressure

environments, and the emotional demands of medical practice are likely contributing. Depression and anxiety are the most frequently reported mental health issues among physicians (Streed et al., 2024). However, stigma around mental illness remains pervasive in the medical field, often leading physicians to not seek support needed for fear of negative repercussions, often leading mental health challenges to go untreated, ultimately causing them to worsen (Moutier et al., 2018; Mihailescu and Neiterman, 2019). Physicians are at a significantly higher risk of dying by suicide than the general population (Schernhammer & Colditz, 2004).

### ***Burnout***

Data suggests that nearly half of physicians experienced at least one symptom of burnout in 2023, which is down from 63% in 2021 (Berg, 2024). With burnout impacting nearly half of the US physician workforce, it remains a critical concern and focus for practitioners and scholars alike. (Shanafelt et al., 2017). Characterized by emotional exhaustion, diminished professional effectiveness, and disengagement from work, burnout adversely affects both clinicians and the quality of patient care (Shanafelt et al., 2012). Burnout has been found to be associated with reduced life expectancy, increased likelihood of cardiovascular disease, problematic alcohol use, interpersonal difficulties, anxiety, depression, and suicide (Ahola et al., 2010; Dyrbye et al., 2008; Oreskovich et al., 2012; Oreskovich et al., 2015; Pompili et al., 2010; Shanafelt et al., 2011). Ahola et al., 2010).

### ***Mistreatment***

Mistreatment in medical training and practice remains a pervasive challenge, with implications for physician health and well-being. Grover et al. (2020) found that 48% of medical residents and 29% of physicians reported experiencing mistreatment. Residents were more likely to face public humiliation, while faculty were more often targets of racially or ethnically

insensitive comments (Grover et al., 2020). Physicians were frequently identified as the perpetrators of mistreatment, and according to residents, their co-residents and nurses were also reported as being perpetrators (Grover et al., 2020). Despite its prevalence, reporting rates were low, suggesting reluctance and fear of retribution (Grover et al., 2020). Other studies have reinforced these findings, highlighting that physicians not only experience mistreatment from superiors and colleagues, but from patients, family members and visitor as well (Rowe et al., 2022). Mistreatment in medicine has been found to be associated with heightened psychological distress for doctors (Rowe et al. 2022).

### **Organizational Culture in Medicine**

Researchers within the medical field have begun to advocate for increased efforts to better understand the role of culture as it pertains to physician outcomes (Shanafelt et al., 2019). According to Shanafelt et al. (2019), many of the adverse outcomes facing physicians, and leading to the historically high attrition rates, stem from the culture of medicine, which has long prioritized physician work performance above all else, including health and well-being. As such, Shanafelt et al. (2019), stress that to effectively address the challenges within healthcare and the widespread issue of professional burnout and attrition among US physicians, it is essential to acknowledge the underlying cultural factors contributing to these problems. A more comprehensive understanding of the underlying culture of medicine, particularly the behaviors that have been normalized, rewarded, and reinforced, may be essential to addressing the persistent challenges contributing to physician attrition. By identifying culture as a root cause, rather than treating these issues as isolated issues, we create the foundation for more sustainable change. A systemic approach to addressing culture, would enable the development of reforms that not only respond to the behavioral manifestations of harmful culture but also actively discourage the conditions that

produce them, inevitably promoting a more inclusive, equitable, and supportive medical profession.

Organizational culture is a set of explicit and implicit rules, values, and principles that shape behavior within an organization (Schein, 2010). Culture consists of the shared beliefs, values, and social practices of a group that are so widely accepted they become implicit and unquestioned, impacting the way members perceive, think and behave (Schein & Schein, 2017). In organizational settings, culture is enduring and often rooted in the historical underpinnings of a particular profession or institution (Schein & Schein, 2019; Shanafelt et al., 2019). While explicit norms may be directly communicated, the more foundational, taken-for-granted assumptions are acquired over time through lived experience and engagement with established members (Schein & Schein, 2017). As such, organizational culture establishes norms for acceptable behavior and is passed down to new members, often guiding their future actions through formal mechanisms and informal interactions (Schein & Schein, 2017). However, it can also enable harmful behaviors by creating social conditions that promote harm and by minimizing negative consequences for such actions (Perry et al., 2020; Berry, 2004). Aligned with this, Shanafelt et al. (2019) state that the medical profession has unhealthy norms that have often led to perpetuation of harmful and problematic behaviors. Physicians often overwork and deny human limitations, which some have referred to as adopting a ‘hero complex’ (Balch & Shanafelt, 2011; Sexton et al., 2000; Wessely & Gerada, 2013). Senior physicians encourage a mindset of perfectionism, invulnerability, and low self-compassion, often teaching medical students to prioritize professional demands over self-care, personal relationships and work-life balance (Gabbard, 1985). Mistakes are often framed as personal failures and inadequacy, creating a culture where physicians are expected to be infallible (Wessely & Gerada, 2013; Wise, 2018). Although physicians advocate for self-care and promote

a healthy and balanced lifestyle for patients, they frequently neglect these principles themselves, prioritizing work above all else (Frank & Segura, 2009; Frank et al., 2010; Shanafelt et al., 2012; Wessely & Gerada, 2013). Conversely, research indicates that a supportive workplace culture makes a significant difference in physician outcomes (Burns et al., 2020). Specifically, Burns et al. (2020) found that physicians who experienced a supportive workplace, characterized by respectful collegial relationships, experienced higher professional fulfillment and satisfaction (Burns et al., 2020). This fulfillment, along with confidence in addressing unprofessional behavior without fear of retaliation, was linked to fewer burnout symptoms (Burns et al., 2020).

Research indicates that gender disparities in attrition may be reflective characteristics of organizational culture in medicine (Dawson, 2019; Schaechter et al., 2024; Schaechter et al., 2025). Research by Schaechter et al. (2024) found that among female physicians, increased experiences of support across three workplace belonging dimensions: institutional culture, interactions with supervisors, and interpersonal relationships, was associated with lower intentions to leave. Among these, a supportive culture had the most significant impact, with each unit increase reducing the odds of higher intent to leave by 59% (Schaechter et al., 2024). This study highlights the critical role that organizational culture plays in reducing attrition risk among women healthcare professionals.

In medicine, each organization and specialty has its own unique culture, influencing how they prioritize quality, compassion, community health, or economic factors (Shanafelt et al., 2019). However, given the rates of mental illness, burnout, and mistreatment among the physician workforce, there are likely shared underlying cultural norms within the medical profession, healthcare organizations, and the overall healthcare system, that warrant further exploration (Shanafelt et al., 2019).

## **Gendered Experiences in Medicine**

As noted above, attrition rates have been consistently higher among women than men (Chen et al., 2023; Schaechter et al., 2024). According to Bond (2023), between 2009 and 2020, female physicians transitioned between medical practices at a rate 13% higher than their male counterparts and exited the medical profession at a 38% higher rate. This disproportionate gendered attrition of medical professionals has significant public health implications, including reducing the diversity of perspectives and expertise available to address patients' needs and hindering progress in healthcare research and innovation, among others (Chen et al., 2023; Misra et al., 2017; Silver et al., 2019; Smith-Doerr et al., 2017).

Existing research indicates that the disproportionate attrition rates among female physicians can be attributed to a multitude of interrelated factors (Bond et al., 2023; Chen et al., 2023; Schaechter et al., 2024). The following section of this literature review explores key themes related to gendered attrition, including limited career advancement opportunities and pay disparities, experiences of harassment and discrimination, the impact of parental roles and work-life conflict, well-being, mental health, and burnout, and the role of peer support and belonging.

### ***Gender Disparities in Career Outcomes***

Research suggests that female physicians face disproportionate career development and advancement opportunities, sponsorship, and access to role models compared to their male counterparts (Chow et al., 2020; Murphy et al., 2021; Ritcher et al., 2020; Carr et al., 2018; Li et al., 2021). This phenomenon is known as the “leaky pipeline”, a metaphor that is commonly used to describe the disproportionate attrition of women from STEM career paths, including medicine, resulting in their underrepresentation at senior levels (Barr et al., 2008; Clark Blickenstaff, 2005; Wickware, 1997). At each stage, from education through to leadership, systemic barriers, biases,

and unequal opportunities contribute to the gradual loss of women from the field (Clark Blickenstaff, 2005). Within the context of medicine, a 17-year longitudinal study by Carr et al. (2018) found that female physicians experienced slower promotion rates, were underrepresented in leadership roles, and received lower compensation than their male counterparts. Li et al. (2021) adds that female physicians were half as likely to attain senior leadership positions, even when male and female physicians had similar experience and productivity, and men were almost three times more likely to attain full professorships in academic medicine than women physicians. Aligned with this, related specifically to compensation, AAMC (2021) data suggests that women across various medical specialties earn between 72 and 96 cents for every dollar their male colleagues made. According to Armijo et al. (2021), one reason for these gender differences, is that female physicians are more frequently assigned to administrative, non-promotable tasks and/or committees, limiting their ability to engage in high-impact projects. Lastly, in some specialties, like surgery, where women are grossly underrepresented, female physicians receive fewer new patient referrals and perform fewer complex procedures compared to male physicians, despite having comparable training, availability, and seniority (Chen et al., 2021a; Chen et al., 2021b; Dossa et al., 2022). These factors reflect significant systemic barriers that limit female physicians' professional opportunities, ultimately impacting career advancement. In addition, Chen et al. (2023), stress that these barriers contribute to a lack of female leaders who can advocate for systemic change, which may further exacerbate these inequities.

### ***Mistreatment, Harassment and Discrimination***

Mistreatment remains a widespread issue in medical training and practice, with nearly half of residents and a third of faculty reporting such experiences, ranging from public humiliation to racially insensitive remarks, oftentimes from supervisors and peers (Grover et al., 2020).

Physicians also frequently face mistreatment from patients, families, and visitors, which has been linked to heightened psychological distress (Rowe et al., 2022). Through a large-scale study of U.S. physicians, Dyrbye et al. (2022) found such mistreatment and discrimination were especially common among women and racial/ethnic minority physicians and were associated with higher levels of burnout.

Aligned with this, research has found that female physicians experience workplace challenges related to sexual harassment and gender discrimination, at higher rates than their male counterparts (Bhandari et al., 2021; Brown et al., 2021; Freischlag & Files, 2020; Hsaio et al., 2021). According to the National Academies of Sciences, Engineering, and Medicine (NASEM) (2018), prevalence data indicates that nearly half of female medical students have experienced sexual harassment. This prevalence is two times higher than the rates reported by female students in other science and engineering fields, which posits medicine as the scientific discipline with the highest incidence of sexual misconduct (NASEM, 2018). Castro et al. (2015) note that the only professional setting with a higher reported rate of sexual harassment is the military. Similar to medicine, the military is characterized by hierarchical power structures, predominantly male leadership, and high-stakes environments resulting from life-or-death scenarios (Castro et al., 2015).

Research by Hsaio et al., (2021) explored sexual harassment in medicine, revealing one third of their 515 respondents reported experiencing sexual harassment in 2018; with 52% of medical students, 31% of residents and fellows, and 25% of faculty reporting such experiences (Hsaio et al., 2021). Furthermore, their findings found that female physicians were more than two times more likely to indicate they had experienced sexual harassment than male physicians (Hsaio et al., 2021). The most frequently reported forms of harassment included offensive and sexually

suggestive comments or jokes, as well as intrusive questions about one's private life or physical appearance (Hsaio et al., 2021). Research indicates that sexual misconduct and discrimination in the medical context has been linked to a heightened risk of stress, anxiety, depression, and substance abuse (Freischlag & Files, 2020; Hu et al., 2019). Connected to the lack of career advancement and representation of female physicians outlined above, research suggests that sexual harassment is more prevalent in environments with a lack of female leadership (Nicolson & Welch, 2007), which is consistent with medicine, where AAMC data (2019) indicates that women occupy less than 15% of leadership positions.

Consistent with sexual harassment data, research has demonstrated significant gender differences exist in the perception and experience of microaggressions and discrimination (Ahmad et al., 2022; Brown et al., 2021; Chow et al., 2020). In a study by Ahmad et al. (2022), of nearly 300 physicians, women reported experiencing gendered microaggressions from patients more frequently than men. These microaggressions were strongly associated with lower job satisfaction and higher burnout (Ahmad et al., 2022). In addition, women physicians reported that they felt they had to work harder to combat the microaggression, and earn patient trust (Ahmad et al., 2022). Research by Chow et al. (2020), adds that their qualitative data revealed that men generally saw their gender as a source of privilege, while women viewed it as a reason for negative treatment they received (Chow et al., 2020). Interestingly, women in their study described systemic biases in the workplace in several distinct ways, including receiving less credit for their work, holding less authority, facing fewer opportunities for advancement, and being treated differently due to childrearing responsibilities (Chow et al., 2020). Existing research shows that women physicians frequently experience gender discrimination and harassment, which significantly contributes to

experiences of burnout and often results in their premature departure from the workforce (Adesoye et al., 2017; Brown et al., 2021; Moore et al., 2019).

### ***Parental Role and Work-Life Conflict***

Much of the literature attributes the high attrition rates among female physicians to family responsibilities, parental roles, and work-life conflicts (Buddeberg-Fischer et al., 2010; Chen et al., 2022a; Chen et al., 2022b; Frank et al., 2019; Frank et al., 2021; Lyu et al., 2029). According to Frank et al. (2019), despite greater gender equality in medicine, young female physicians struggle to balance career and family, often reducing work hours more than men to manage work-family conflict. Specifically, a significant gender gap emerges soon after medical training, with three quarters of women reducing or considering part-time work within six years (Frank et al., 2019). Research by Baptiste et al. (2017) affirms this, finding female physicians handle more domestic and caregiving duties and are three times more likely than men to reduce work hours for childcare. (Baptiste et al., 2017). Through a review of literature from 1994 to 2014, Treister-Goltzman and Peleg (2016) found that female physicians experience greater work-family conflict than other professionals, with more negative impacts compared to their male counterparts. Work-family considerations significantly influence their career choices, impacting professional success, faculty productivity, marital relationships, and parenthood (Treister-Goltzman & Peleg, 2016). Research by Buddeberg-Fischer et al. (2010), found that female physicians, particularly mothers, face lower employment rates, career success, and support than male physicians. In addition, motherhood was found to negatively impact career progression, leading women to favor part-time work and alternative career paths (Buddeberg-Fischer et al., 2010).

Relatedly, Kim et al. (2024) found that work-life balance played a crucial role in career decisions for both men and women, though women often feel they shoulder greater household

responsibilities. Existing research suggests that women physicians are often partnered with other physicians, which is especially true in some specialties like surgery, such that both spouses are engaged in full time work (Baptiste et al., 2017). Despite the equal, and often demanding workloads of both physician spouses, women most often still bear primary household responsibilities. (Baptiste et al., 2017). Kim et al. (2024) reinforce this, highlighting that women continue to shoulder a disproportionate share of the "second shift," with household responsibilities remaining unevenly distributed, even when both partners work or the woman is the primary breadwinner (Jolly et al., 2014; Ly et al., 2018; Starmer et al., 2019).

Aligned with the above literature, Chen et al. (2022b) found that often bias against professional women often stems from concerns about their commitment to their careers after becoming mothers, leading to the "motherhood penalty". The "motherhood penalty" is a phenomenon where mothers face lower wages, fewer promotions, and perceptions of reduced competence. Since personal and professional lives are closely intertwined, this penalty results in decreased employment opportunities, unpaid maternity leave, and discrimination (Chen et al., 2022b; Moore et al., 2019). While research has primarily examined discrimination against women after becoming mothers, it also reveals that all physicians, regardless of gender, experience bias when taking on caregiving responsibilities traditionally associated with women (Adesoye et al., 2017; Chow et al., 2020; Harris et al., 2009; Rangel et al., 2018). Currently, no data exists to confirm a decline in female surgeon productivity post-childbirth, in fact research by Chen et al. (2022b), found physicians maintain consistent clinical productivity following maternity or other types of leave. In addition to discrimination, work-family conflicts significantly contribute to physician burnout and are more prevalent among women, who face greater challenges balancing professional and personal responsibilities compared to their male colleagues (Dyrbye et al., 2011).

Research by Dyrbye et al. (2011) revealed that women physician were more likely than men to experience work-family conflicts, increased burnout, and greater emotional exhaustion (as cited in Lyu et al., 2019). Additionally, Lyu et al. (2019) states that, physician mothers report bearing greater domestic responsibilities than their partners, which correlated with higher career dissatisfaction. Disparities linked to parental role, impact long-term career advancement and pay equity, highlighting the need for stronger career-support measures, such as flexible schedules, enhanced childcare support, and improved work-family support policies to retain and promote women in medicine (Buddeberg-Fischer et al., 2010; Frank et al., 2019; Treister-Goltzman & Peleg, 2016; Warner & Lehmann, 2019). A supportive spouse and workplace mentorship have been shown to be key factors in achieving a positive work-family balance (Kim et al., 2024).

### ***Burnout, Well-being and Mental Health***

Issues of burnout, well-being and mental health among the physician workforce have been studied extensively (Dyrbye et al., 2010; Shanafelt et al., 2017). Although separate areas of inquiry, burnout, well-being and mental health are interrelated and often studied in parallel (Shanafelt et al., 2017; West et al., 2018). Burnout among physicians has been an especially well-documented issue for over two decades (Shanafelt et al., 2017). Research by Shanafelt et al. (2022) indicates that physicians have a 40% higher likelihood of experiencing occupational burnout compared to professionals in other fields. Burnout is marked by emotional exhaustion, reduced work efficacy and disengagement from work, leading to negative consequences for both physicians and their patients (Shanafelt et al., 2012). Burnout has serious personal consequences, including an increased risk of cardiovascular disease and a shorter life expectancy (Ahola et al., 2010). It is also strongly linked to problematic alcohol use, relationship difficulties, anxiety, depression, and suicide (Dyrbye et al., 2008; Oreskoyich et al., 2012; Oreskoyich et al., 2015; Pompili et al., 2010;

Shanafelt et al., 2011). The prevalence of burnout among physicians in the U.S. is alarmingly high, with studies revealing that about 50% of surgeons exhibited at least one symptom (Dyrbye et al., 2011; Shanafelt et al., 2012; Shanafelt et al., 2019).

Research shows that female physicians face a higher risk of burnout and emotional exhaustion compared to their male counterparts (Lyubarova & Rittenberg, 2023; Shanafelt et al., 2019; Streed et al., 2024). In fact, research by McMurray et al. (2000) revealed that women experienced 60% higher burnout rates than men, largely due to unequal patient expectations, external role demands, and experiences in the workplace. In addition to these, there are a multitude of reasons this may be case. Researchers have found that women physicians experience heavier workloads, often spending more time on electronic health records and patient interactions, while having fewer resources and less control over their schedules (Cassidy-Vu et al., 2017; Dyrbye et al., 2011; Lyubarova & Rittenberg, 2023; McMurray et al., 2000; Shanafelt et al., 2019; West et al., 2018). Additionally, female physicians report more challenges with work–life integration, including greater domestic responsibilities and work–home conflicts, often leading to lower self-compassion, decreased recognition and professional fulfillment, all of which contribute to higher rates of burnout (Cassidy-Vu et al., 2017; Jolly et al., 2014; Jones et al., 2016; Lyubarova & Rittenberg, 2023). Aligned with this, and with the above sections of the literature review, research finds that that underrepresentation in leadership, pay gaps, slower career progression, and exposure to gender bias, microaggressions, and harassment, are all organizational factors that contribute to gender disparities in burnout and well-being (Ahmad et al., 2022; Lyubarova & Rittenberg, 2023).

Concerns with regards to physician mental health have intensified following several high-profile clusters of physician suicides and growing research showing high rates of mental health symptoms, suicidal ideation, and completed suicides among physicians (Streed et al., 2024).

Physicians are at a heightened risk of mental illness due to the demanding nature of their work, including shift work, irregular and extensive hours, and high-pressure situations (Mihailescu & Neiterman, 2019). Similar to the general population, depression and anxiety are the most commonly reported mental health disorders among physicians (Streed et al., 2024). Mihailescu and Neiterman (2019) believe that mental health is often overlooked in medical research because mental health concerns are often more stigmatized. In fact, Moutier et al. (2018) found that a significant factor influencing physicians' behavior regarding mental health issues was the fear of retribution, facing punitive consequences and/or losing the respect of their colleagues if they acknowledge their mental health challenges. This fear often leads physicians to diminish and conceal mental health challenges, which can have dire consequences (Moutier et al., 2018). Estimates suggest that, in the US, one doctor dies by suicide per day (Center et al., 2003) and a meta-analysis found that physicians have a higher risk of suicide compared to the general population (Schernhammer & Colditz, 2004). Research has demonstrated that physicians, especially women, face a heightened risk of suicide (Harvey et al., 2021). Alarming, research suggests that female physicians face an even greater risk than male physicians, with suicide rates two to four times higher than women outside of the medical field (Schernhammer & Colditz, 2004).

### ***Peer Support and Belonging***

Research suggests that female physicians receive less mentorship, sponsorship, and overall career support compared to their male counterparts, with this disparity being more pronounced for those with children (Buddeberg-Fischer et al., 2010; Chesak et al., 2020). The limited number of women in leadership roles exacerbates these challenges by reducing the availability of potential mentors and sponsors (Sambunjak et al., 2006).

While it is crucial to recognize the challenges and negative factors impacting female physicians, it is equally important to explore the protective and positive influences that can support their well-being, career advancement, job satisfaction. Mentoring, peer support and a sense of belonging have been shown to greatly improve women's experiences in medicine and positively impact their intentions to leave the field (Hedges et al., 2024; Schaechter et al., 2024). A recent qualitative study explored the experiences of female physicians involved in women-focused groups, revealing several key benefits (Lin et al., 2019). These benefits included mentorship and sponsorship, which enhanced skills, confidence, and access to leadership opportunities. A recent systematic review identified mentorship as a key element in most formal programs designed to support women's careers in academic medicine (Laver et al., 2018). Mentorship was associated with enhanced skills, self-esteem, and confidence, particularly among junior female physicians (Varkey et al., 2012). Additionally, sponsorship, distinct from mentorship, provided career advancement opportunities by enabling senior members to nominate junior colleagues for leadership roles, awards and research initiatives (Lin et al., 2019). Women-focused groups also played a critical role in retaining female physicians, as they offered female physicians' opportunities for peer support, collaboration and advocacy for gender-specific issues, as well as facilitated support for research initiatives and skill development (Lin et al., 2019). Aligned with this, research by Schaechter et al. (2023) demonstrated that increased belonging was significantly associated with lower likelihood of female physicians leaving their institution. Providing supportive community that reduces professional isolation and fosters a sense of belonging is crucial for mitigating gendered attrition from the medical field (Lin et al., 2019).

## **Gender Bias in Medicine**

The above review of literature highlights the pervasive gender biases experienced by female physicians within medicine. Aligned with the above review of literature, a helpful framing of gender bias in male-dominated professions, is the concept of the masculine default bias (Cheryan & Markus, 2020). Masculine defaults are a form of cultural bias that value, reward and normalize behaviors and traits traditionally associated with the male gender role (Cheryan & Markus, 2020). According to Cheryan and Markus (2020), masculine defaults are often perceived as neutral, standard, or necessary, but they disadvantage women by reinforcing gender norms and limiting women's opportunities for success in three distinct ways. First, lower representation and belonging occur because women are generally socialized to exhibit fewer masculine traits than men (Cheryan & Markus, 2020; Cortes & Pan, 2017; Eagly, 1987; Hyde, 2005). In environments where these traits are highly valued, women often feel a diminished sense of belonging and anticipate less success (Bian et al., 2018b; Murphy & Cimpian, 2018; Cheryan et al., 2009; Cheryan et al., 2011; Gaucher et al., 2011; Heilman, 1983). Second, bias in perception and evaluation leads to women being under-recognized and under-rewarded even when they display masculine traits to the same extent as men (Bian et al., 2018a; Cheryan & Markus, 2020; Moss-Racusin et al., 2012; Reuben et al., 2014; Valian, 2014; Williams & Ceci, 2015). This occurs due to stereotypes that more strongly associate these traits with men, such as risk-taking or assertiveness (Cheryan & Markus, 2020; Croson & Gneezy, 2009; Morgenroth et al., 2018). Third, social and economic sanctions are imposed on women who exhibit stereotypically masculine behaviors, penalizing them for deviating from the traditional gender roles (Amanatullah & Tinsley, 2013; Brescoll & Uhlmann, 2008; Cheryan et al., 2019; Cheryan & Markus, 2020; Heilman et al., 2004; Rudman & Fairchild, 2004; Williams & Tiedens, 2016). Overall, cultures with masculine

defaults create environments that are challenging for women to enter and thrive within, reinforcing gender disparities and limiting women's career advancement and leadership opportunities (Cheryan & Markus, 2020).

Various interventions have been implemented to address gender bias, such as leadership training programs, but these efforts have largely fallen short as they fail to address the underlying biases that perpetuate gender disparities (Chen et al., 2022a; Shanafelt et al., 2019). Aligned with the masculine default bias, many interventions implemented in medicine to date have framed issues as a "women deficit," implying that women lack the necessary skills and should adopt stereotypically male traits to succeed (Chen et al., 2022a; Cheryan & Markus, 2020). This perspective implicitly positions male characteristics as the "gold standard" of medicine and suggests that women require "fixing" to align with these norms (Chen et al., 2022a, p. 37). This notion has historical roots in ancient beliefs that perceived women as incomplete or inferior versions of men, an ideology that continues to influence expectations in medicine today (Chen et al., 2022a). According to Chen et al. (2022a), the "women deficit" bias influences expectations in medicine at various levels. At the individual level, the stereotype of "iron surgeon" reinforces the idea that successful surgeons must exhibit characteristics grounded in hegemonic masculinity, like toughness and invulnerability (Cassell et al., 2000; Chen et al., 2022a). At the team level, the "women deficit" bias affects team dynamics, as women in clinical settings are more likely to be asked to perform non-medical tasks and are questioned more often than their male counterparts (Chen et al., 2022a). At the organizational level, stereotypical male leadership qualities, such as assertiveness, competitiveness and individualism are often celebrated, while traditionally feminine traits like compassion, adaptability and collaboration are undervalued (Chamorro-Premuzic, 2021; Chen et al., 2022a; Vial & Napier, 2018). Current interventions suggest that women should

emulate male behaviors to gain respect, rather than challenging underlying bias (Chen et al., 2022a). However, recent global events, such as the success of female leaders during the COVID-19 pandemic, highlight the effectiveness of stereotypically “female” leadership qualities (Chen et al., 2022a; Wittenberg-Cox, 2020).

Recognizing and addressing gender bias, like masculine defaults, and/or the ‘women deficit’, is essential for understanding and remedying women’s underrepresentation in majority-male fields, including medicine (Chen et al., 2022a; Cheryan & Markus, 2020). Instead of focusing solely on changing women to fit male norms, interventions should involve redefining standards, valuing a broader range of skills and leadership styles, so the medical field can create a more inclusive and equitable environment for all (Chen et al., 2022a; Dawson, 2019).

Aligned with the masculine default and women deficit biases, is the lack of fit model, which posits that bias emerges when there is a perceived lack of fit or mismatch between the traits typically associated with a social group and the qualities deemed necessary for success in a particular job (Heilman, 1983; Heilman & Parks-Stamm, 2007). The lack of fit model specifically emphasizes how individuals are judged based on the alignment, or misalignment, between their perceived attributes and the job demands, leading to expectations of success or failure (Heilman, 1983). Specifically, when this perceived alignment is lacking, it often results in lowered expectations of performance, which can lead to biased assessments and discriminatory outcomes, even when actual professional skills and abilities are adequate (Heilman, 1983). This framework is especially useful for understanding gender bias in traditionally male-dominated fields (Heilman, 1983). Aligned with the women deficit bias in medicine, research has demonstrated the relevance of the lack of fit theory in medicine, particularly for heavily male dominated specialties, like surgery (Ferraris-Baron, 2017). Specifically, research by Ferraris-Baron (2017) found that women

in male-typed medical specialties, like surgery, are perceived as less naturally suited, and are evaluated more on effort than ability when compared to their male counterparts.

### **Masculinity Contest Culture**

This comprehensive review of literature reveals that existing research has extensively examined physician outcomes and gender disparities in medicine. However, as delineated above, these areas of study are often examined in isolation, overlooking the broader cultural context from which they may emerge (Shanafelt et al., 2019). Shifting the focus to the culture of medicine offers a more integrative approach to understanding the underlying norms that contribute to challenges such as burnout, mistreatment, mental health struggles, and attrition. More specifically, the use of the MCC framework would provide insight into the harmful norms which may be driving the problematic behavior, and adverse physician outcomes. Exploring MCC across the field of medicine more broadly, enables a more systemic analysis, moving beyond problem areas to address the deeper-rooted cultural dynamics that influence physician well-being and perpetuate gender inequity.

Based on the above literature review, medical profession can likely be characterized as an MCC (Berdahl et al., 2018; Chen et al., 2022a; Shanafelt et al., 2019). MCC is defined as a workplace where masculine qualities are highly valued and is defined by four overarching norms which show strong correlation with organizational dysfunction; show no weakness, strength and stamina, put work first, and dog eat dog (Berdahl et al., 2018). First, *show no weakness* describes environments that demand unwavering confidence, discouraging any admission of doubt or mistakes, and suppressing emotions perceived as vulnerable or “soft.” Second, *strength and stamina*, relates to a work context that prioritizes physical strength or athleticism, even in non-physical professional roles, or value extreme endurance, such as working excessive hours (Berdahl

et al., 2018). Third, *put work first*, describes a workplace where work takes precedence over all other aspects of life, including family, with breaks or leave perceived as a lack of commitment (Berdahl et al., 2018). Lastly, *dog eat dog*, relates to highly competitive environments where success is achieved by defeating others, leading to mistrust and an emphasis on dominance (Berdahl et al., 2018). Research by Munsch et al. (2018) found that individuals tend to overestimate their coworker's endorsement of MCC, often leading to increased willingness to conform to these norms to fit in.

In workplaces characterized as MCC, masculinity must be continuously proven through behaviors that align with traditional male stereotypes; dominance, toughness, risk-taking and aggression (Berdahl et al., 2018). This pressure leads individuals, men and women alike, to engage in aggressive behaviors, take unnecessary risks, work excessive hours, engage in intense competition, and sometimes exhibit harassment, particularly when they perceive a threat (Alonso, 2018; Berdahl et al., 2018; Rawski & Workman-Stark, 2021; Workman-Stark, 2021a). Consequently, cooperation, psychological safety, trust, and open communication are often compromised, leading to stressful and unproductive work environments characterized by high levels of anxiety, interpersonal mistreatment, burnout, and turnover (Berdahl et al., 2018; Koc et al., 2021; Monton & Block, 2025; Rawski & Workman-Stark, 2018; Regina & Allen, 2022; Reid et al., 2018; Workman-Stark, 2021a; Xie & Zheng, 2023). MCCs are driven by high levels of competition, and individuals are likely to valorize status and success over their health and well-being (Ely & Kimmel, 2018; Monton et al., 2024). Research by Kuchynka et al. (2018), suggests that some men view gender equality as a zero-sum game, where women's gains are seen as men's losses. This perception often leads to defensive reactions, including sexism and resistance to equity policies, especially in MCCs (Kuchynka et al., 2018). As such, women and minoritized individuals

in these environments face additional challenges, because in order to succeed, they must conform to the same norms, often facing backlash for displaying behaviors that are acceptable in men but perceived as inappropriate for them (Alonso, 2018; Berdahl et al., 2018; Matos et al., 2018; Workman-Stark, 2021a). This double bind creates significant barriers to success, leading many to adopt supportive roles rather than leadership positions (Berdahl et al., 2018). Important to note, in MCCs, both men and women are required to conform to the competitive norms in order to succeed or simply maintain their positions (Berdahl et al., 2018). MCC norms are especially prevalent in historically male-dominated fields with high-stakes resources at risk, such as finance, STEM, high-performance sport, firefighting and policing (Berdahl et al., 2018; Monton & Block, 2025; Rawski & Workman-Stark, 2018; Regina & Allen, 2022; Reid et al., 2018; Sandberg, 2025; Workman-Stark, 2021a).

The MCC framework aligns with existing literature which characterizes the culture of medicine as historically male dominated, leading to the promotion of toxic masculinity and pervasive stereotypes (Brown et al., 2021; Dawson, 2019; Van Wyk et al., 2016). Medical organizations, broadly, are likely to endorse the four norms outlined by Berdahl and colleagues (2018), *show no weakness*, *strength and stamina*, *put work first* and *dog-eat-dog*, as they closely align with the characteristics of culture that have been widely acknowledged in the field of medicine. First, *show no weakness* is reflected in the valorization of physician stoicism and perfectionism, where mistakes are perceived as personal failures and self-care is seen as weakness (Wessely & Gerada, 2013; Wise, 2018; Gabbard, 1985). Second, *strength and stamina*, aligns with the long and grueling hours, overwork and praise for perseverance that permeate medical training programs and practice (Balch & Shanafelt, 2011; Shanafelt et al., 2012). Third, *put work first* is reflected in the unwavering expectation that professional demands take precedence over personal

needs, even at the cost of health, and commitments outside of work are perceived as a physician's lack of commitment to their profession (Frank & Segura, 2009). Finally, the *dog-eat-dog* aligns with the hyper competitive, hierarchical nature of medical organizations, where progression often depends on outperforming peers and conforming to dominant norms, norms which disadvantage those who do not exemplify traditional masculine attributes (Chen et al., 2022a; Cheryan & Markus, 2020).

Broadly, the culture of medicine is characterized by norms that prioritize perfectionism, self-sacrifice, and dominance, which contribute to high rates of burnout, emotional exhaustion, and professional disengagement and attrition across the physician workforce (Shanafelt et al., 2019). While these cultural norms negatively impact all physicians, they are likely particularly harmful to female physicians, who face additional pressures to conform to masculine ideals while also contending with gender bias and other inequities. As such, MCC provides a useful framework for understanding how medical culture not only fosters burnout and poor health outcomes for physicians, but how it may be disproportionately impacting female physicians.

### **The Present Study**

The present study will utilize the MCC theoretical model to examine how the cultural norms within medicine may contribute to physician outcomes. Specifically, this research will investigate the extent to which the four MCC norms, show no weakness, strength and stamina, put work first, and dog-eat-dog, are perceived by physicians, and how they relate to perceptions of well-being, mental health, burnout, harassment, belonging and intent to leave the profession. By exploring these dynamics across gender, this study aims to deepen our understanding of how organizational culture may differentially influence the experiences of male and female physicians, with a particular focus on the cultural norms which may be driving gendered attrition in medicine.

Research has demonstrated that physicians experience high levels of mental health symptoms, including anxiety, depression and suicidal ideation (Streed et al., 2024). According to Mihailescu and Neiterman (2019), physicians are at a higher risk of mental illness because of their work conditions, including, shift work, extremely long hours, and high stakes, life or death situations. Aligned with this, physician well-being has often been studied in tandem (West et al., 2018), and due to working conditions, it has also been documented that physician well-being often suffers as well. Specifically, research by Shanafelt et al. (2012) highlights that physicians experience high levels of emotional exhaustion, significantly impacting physician well-being. Within the MCC literature, high levels of MCC have been shown to have a negative impact on an individual's mental health and well-being, across a range of profession domains, including consulting, sport, and policing (Monton et al., 2024; Regina & Allen, 2022; Rawski & Workman-Stark, 2018). This is not surprising, given that we also know, within MCC workplaces, individuals are more likely to prioritize status and performance, above health, well-being and safety (Berdahl et al., 2018). As such, aligned with existing literature, it is hypothesized that:

**Hypothesis 1:** Masculinity Contest Culture (MCC) norms will be positively related to physician anxiety and depression.

**Hypothesis 2:** Masculinity Contest Culture (MCC) norms will be negatively related to physician well-being.

Consistent with the above hypotheses, burnout has been studied extensively within the medical domain (Shanafelt, 2017). Physicians report high levels of burnout, with some specialties revealing prevalence of up to 50%, displaying at least one sign of burnout (Shanafelt et al., 2019). Burnout is related to the above hypotheses, in that, burnout has been strongly linked to anxiety, depression, emotional exhaustion, and suicidality among the physician population (Shanafelt et

al., 2011). In alignment with this, research suggests that environments that can be characterized as high MCC, are often associated with high levels of burnout and emotional exhaustion (Glick et al., 2018; Rawski & Workman-Stark, 2018; Regina and Allen, 2022). The predominant and pervasive normalized behaviors within work environments characterized by MCC, such as overwork, prioritizing work above all else, and neglecting personal health and well-being, align with conditions commonly linked to burnout. Consistent with the above literature, we hypothesize that:

**Hypothesis 3:** Masculinity Contest Culture (MCC) norms will be positively related to physician burnout.

Research suggests that the medical field is ripe with instances of mistreatment and harassment (Grover et al., 2020). Medicine generally, is characterized by hierarchy, power differences, and historically male-dominated roots, all of which contribute to a work context where mistreatment is often tolerated, and even expected, especially by women and other minoritized individuals (Brown et al., 2021). These conditions, align with literature that finds workplaces high in MCC often report higher incidences of harassment, discrimination and interpersonal mistreatment (Alonso, 2018; Glick et al., 2018; Workman-Stark, 2021a; Xie & Zheng, 2023). Therefore, consistent with this, it is hypothesized that:

**Hypothesis 4:** Masculinity Contest Culture (MCC) norms will be positively related to experiences of incivility.

Attrition rates in medicine have been historically high in recent years (Chen et al., 2023). Physician attrition has been linked to a myriad of factors, including administrative overload, misaligned values, lack of support, and environments that discourage vulnerability and self-care, which ultimately lead to lower career satisfaction overall (Dyrbye et al., 2011; Shanafelt et al., 2019; Shanafelt et al., 2022). Similarly, research examining environments that are characterized

as MCC, have been linked to high turnover intentions, as well as lower satisfaction and performance (Buhrig, 2024; Glick et al., 2018; Rawski & Workman-Stark, 2018; Xie & Zheng, 2022). In alignment with the above literature, we hypothesize that:

**Hypothesis 5:** Masculinity Contest Culture (MCC) norms will be positively related to intentions to leave.

**Hypothesis 6:** Masculinity Contest Culture (MCC) norms will be negatively related to career satisfaction.

**Hypothesis 7:** Masculinity Contest Culture (MCC) norms will be negatively related to self-rated job performance.

Across all the hypothesized relationships, including mental health, well-being, burnout, harassment and attrition, research indicates that female physicians are at an increased risk (Brown et al., 2021; Chen et al., 2023; Dyrbye et al., 2011; Harvey et al., 2021; Hsaio et al., 2021; Schaeter et al., 2024). Hypotheses one, two and three relate to physician health, well-being and burnout. Research has demonstrated that female physicians' mental health and well-being are more severely impacted than their male counterparts (Harvey et al., 2021). In fact, research by Schernhammer & Colditz (2004), state that women physicians are four time more likely to commit suicide than women in other professions. In addition, women who are also mothers, are also at an increased risk of emotional exhaustion and lowered well-being (Dyrbye et al., 2011). In addition, burnout rates among physicians were significantly higher for women than men, with some research suggesting female physicians experienced rates of burnout 60% higher than male physicians (Murray et al., 2000; Shanafelt et al., 2019; Streed et al., 2024). This is due to array of factors, including disproportionate workloads and fewer resources, in addition to increased work-life conflict and systemic barriers such as pay gaps, underrepresentation in leadership, and gender bias,

all of which contribute to higher burnout (Cassidy-Vu et al., 2017; Dyrbye et al., 2011; Lyubarova & Rittenberg, 2023; McMurray et al., 2000; Shanafelt et al., 2019; West et al., 2018; Jolly et al., 2014; Jones et al., 2016; Ahmad et al., 2022). Hypothesis four pertains to harassment, which research has demonstrated is directly related to gender and ultimately impacting female physicians to a greater extent (Brown et al., 2021; Hsaio et al., 2021). Research suggests rates of gender harassment to be as high as 52% among female medical students (Hsaio et al., 2021), and nearly double what it is in medicine than other STEM fields (NASEM, 2018). Lastly, hypothesis five, six and seven, relate to attrition rates, which although high for all physicians, are remarkably higher among female physicians (Chen et al., 2023; Schaeter et al., 2024), where we see women leaving medicine at a 38% higher rate than men (Bond, 2023). Many of the factors driving disproportionate gendered attrition, such as higher rates of mental illness, harassment, burnout, and reduced well-being, are reflected in these hypotheses.

In addition, our literature review highlighted the very real gender bias in medicine, likening it to a masculine default, where the gold standard in medicine is being male (Chen et al., 2022a; Cheryan & Marcus, 2020). This aligns with the lack of fit model, where we see that bias arises when a social group's perceived traits do not align with the qualities believed necessary for success in a given role (Heilman, 1983). Research has found that women in male-typed medical fields were judged more on effort than ability, reflecting perceptions of poor fit and highlighting the broader relevance of the lack of fit model in medicine (Ferraris-Baron, 2017). This underlying gender bias in medicine, makes women particularly vulnerable in MCC work contexts, where stereotypically masculine traits, like competition, dominance and aggression are valued and rewarded. Further reinforcing this, research has demonstrated that women are disadvantaged within MCC workplaces, as women are often judged against narrow perspectives of masculinity, making them

more vulnerable to devaluation, backlash, and harm when they don't conform (Kuchynka et al., 2018; Alonso, 2018; Berdahl et al., 2018; Workman-Stark, 2021a). Pervasive gender bias is likely embedded with the organizational norms of medicine, which contribute to the gender disparities which can be observed in the medical field. Therefore, based on the above literature, we hypothesize that:

**Hypothesis 8:** Gender will moderate the relationships proposed in H1 through H7, such that the impacts of MCC will be stronger for women physicians than their male counterparts.

**H8.1:** Gender will moderate the relationship between MCC and physician anxiety and depression, such that the positive association will be stronger for women physicians than for men.

**H8.2:** Gender will moderate the relationship between MCC and physician well-being, such that the negative association will be stronger for women physicians than for men.

**H8.3:** Gender will moderate the relationship between MCC and physician burnout, such that the positive association will be stronger for women physicians than for men.

**H8.4:** Gender will moderate the relationship between MCC and physician experiences of incivility, such that the positive association will be stronger for women physicians than for men.

**H8.5:** Gender will moderate the relationship between MCC and physician turnover intentions, such that the positive association will be stronger for women physicians than for men.

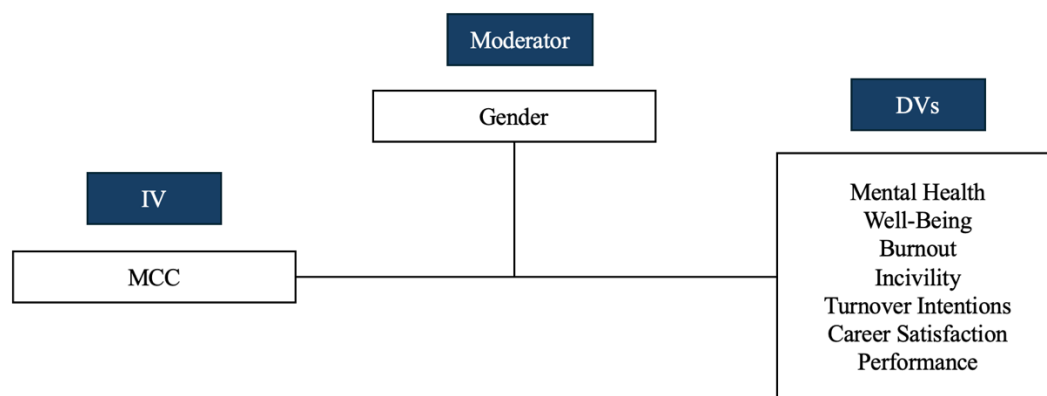
**H8.6:** Gender will moderate the relationship between MCC and physician career satisfaction, such that the negative association will be stronger for women physicians than for men.

**H8.7:** Gender will moderate the relationship between MCC and physician self-rated performance, such that the negative association will be stronger for women physicians than for men.

See Figure 1. for a visual representation of the study variables and the hypothesized relationships, including the potential moderating role of gender.

**Figure 1.**

*Overview of Study Variables*



Further, we were also interested in exploring whether caregiving responsibilities influence the hypothesized relationships (H1 through H7), an area not yet explicitly examined in the MCC literature. Existing research shows that caregiving demands, whether related to children, elder care, or household responsibilities, significantly impact well-being and career trajectories in medicine (Dyrbye et al., 2011; Lyu et al., 2019). Physicians with substantial caregiving responsibilities face limited institutional support, barriers to advancement, higher unemployment risk, and disproportionate household labor, all of which contribute to career penalties, heightened work-

family conflict and burnout (Baptiste et al., 2017; Buddeberg-Fischer et al., 2010; Chen et al., 2022b; Dyrbye et al., 2011; Kim et al., 2024; Lyu et al., 2019). Although these challenges often disproportionately affect women physicians, particularly mothers, emerging evidence indicates that male physicians with significant caregiving roles are also vulnerable to similar strains (Buddeberg-Fischer et al., 2010; Dyrbye et al., 2011; Lyu et al., 2019). Together, this suggests that caregiving status may be a critical factor in how physicians experience and respond to MCC. Therefore, we explore the following:

**Research Question 1:** Does caregiver status moderate the relationship between MCC and the study outcomes (H1 through H7)?

Second, coping strategies are central to how physicians navigate high-stress environments and may help to explain the differential impact of such stressors. Further, evidence suggests that the adaptiveness of these strategies and their use, varies by gender. A coping strategy refers to the specific cognitive and behavioral efforts people use to manage the internal and external demands of high stress situations (Carver, 1997). Coping can be broadly categorized as either adaptive or maladaptive, which differentially predict psychological adjustment and well-being (Carver, 1997; Carver & Vargas, 2010). Adaptive coping refers to strategies generally associated with better psychological and functional outcomes, helping individuals manage stress effectively or resolve its source (Carver, 1997). Conversely, maladaptive coping involves strategies that may reduce distress in the short term but tend to exacerbate stress or impact functioning over time (Carver, 1997). According to Carver (1997), whose scale was used to assess coping in this study, adaptive coping strategies include active coping, planning, positive reframing, acceptance, seeking support, religion, and humor, whereas maladaptive strategies include denial, self-distraction, venting, substance use, behavioral disengagement, and self-blame. Existing research suggests that

physicians experiencing burnout are more likely to rely on maladaptive coping mechanisms such as self-blame, behavioral disengagement, and substance use (McCain et al., 2018; Dehon et al., 2021). Gender differences influence these patterns such that women report higher stress and tend to use both adaptive and maladaptive coping, whereas men more often rely on detachment or inhibition (Matud, 2004; Cholankeril et al., 2023). Importantly, research also shows that instrumental and peer support can be particularly effective coping resources for female physicians in medicine, enhancing skills, confidence and belonging, and buffering against stress and attrition (Laver et al., 2018; Varkey et al., 2012; Lin et al., 2019; Hedges et al., 2024; Schaechter et al., 2024). Social identity factors, including gendered expectation and minority status, further influence coping strategies and their consequences (Murray & Ali, 2016). Although coping and gender differences have been studied in the literature, including in medicine, coping has not explicitly been explored in the MCC research to date. Together, this suggests that MCC, which valorize toughness, dominance and overwork, often compromising safety in the pursuit of success, may interact with coping strategies, amplifying reliance on certain patterns for some groups. As such, we seek to explore the following:

**Research Question 2:** To what extent is MCC associated with certain coping strategies, and do these relationships differ by gender?

## Chapter 3: Methods

### Design

A cross-sectional survey design was used to investigate the relationship between MCC and multiple outcome variables, including mental health, well-being, burnout, harassment, and turnover intentions. Participants responded to a series of self-report measures assessing the primary constructs of interest. MCC, and all the outcome variables will be assessed using scales which were validated by previous research. In addition to the various scale items, demographic questions were included in the survey.

### Participants

The sample was composed of US based physicians in order to examine the impacts MCC within medicine. While our primary goal was to explore these dynamics broadly across the physician workforce, we were also interested in whether MCC might help explain pervasive gender disparities in medicine. As such, we aimed to recruit a gender representative sample, to facilitate meaningful comparisons between male and female physicians. Research by Dyrbye et al. (2011) highlights the importance of including a male comparison group, as it allows researchers to attribute observed challenges specifically to gender, rather than to the general experience of being a physician. In addition, participants were required to work in a hospital setting at least four days per week. This was meant to ensure a common work environment across specialties and to capture the experiences of physicians practicing in a fast-paced clinical setting, which may differ significantly from those working in alone in an office-based or private practice environments.

An a priori power analysis conducted in G\*Power (version 3.1) indicated that a minimum sample size of 153 participants would be required to detect a medium effect size ( $f^2 = 0.15$ ) with

95% power at an alpha level of .05 in a multiple linear regression model including seven predictors, one independent variable, and up to six covariates.

The sample consisted of 215 physicians. Just over half identified as male (59%), with 41% identifying as female and less than 1% identifying as non-binary. Most participants were between the ages of 25 and 44 (72%), with smaller proportions between 45 and 54 (17%), 55 and 64 (8%), and 65 or older (2%). The majority identified as White or Caucasian (66%), followed by Black or African American (14%) and Asian (13%); smaller proportions identified as Hispanic/Latino/a/x (7%), biracial/multiracial (0.5%), or American Indian/Alaska Native/Native Hawaiian/Other Pacific Islander (0.5%). Most participants reported a heterosexual orientation (92%), while 5% identified as gay or lesbian and 3% as bisexual. Physicians varied in years of practice experience, with 23% having 1–5 years, 25% 6–10 years, 21% 11–15 years, and 27% more than 15 years. A majority (60%) reported having a primary caregiving role. Participants represented a wide range of specialties, most commonly hospital medicine (19%), family medicine (18%), and internal medicine (15%), with smaller proportions across pediatrics (9%), emergency medicine (9%), surgery (7%), psychiatry (6%), and other specialties. Two-thirds reported working in gender-balanced units (64%), with about 21% in male-dominant contexts and 15% in female-dominant contexts. Physicians practiced in a variety of hospital types, including community hospitals (37%), academic/teaching hospitals (34%), private hospitals (27%), and Veterans Affairs or military hospitals (3%). See Table 1 for an overview of the participant demographic and professional characteristics. Of note, one participant identified as non-binary. Due to the small sample size, this individual was excluded from gender-based analyses, though their data were retained for descriptive statistics.

Overall, the sample was fairly representative of the U.S. physician workforce. Gender and age distributions were broadly aligned with national patterns (AAMC, 2025). Racial and ethnic representation was also similar, though the proportion of Black/African American physicians was slightly higher in our sample (13.5%) compared to national estimates (5.2%), while Asian physicians were somewhat underrepresented (13.0% vs. 18.8%). Specialty composition was somewhat representative, family medicine, internal medicine, and hospital medicine physicians comprised the largest groups in the sample, which reflects their prominence in the workforce, although pediatrics appeared slightly underrepresented and smaller subspecialties were less well captured. Finally, perceptions of gender composition within specialties may not fully reflect broader workforce realities. For instance, many specialties were reported as gender-balanced in our data, despite being predominantly male-dominated in practice (e.g., surgery) (See Appendix D).

**Table 1.**

*Participant Demographic Characteristics*

<b>Gender</b>	<b><i>n</i></b>	<b>%</b>
Male	126	58.6
Female	88	40.9
Non-binary	1	0.5
Other	-	-
Prefer not to disclose	-	-
<b>Age</b>		
21-24	-	-
25-34	82	38.1
35-44	74	34.4
45-54	36	16.7
55-64	18	8.4
65+	5	2.3

**Race/Ethnicity**

White or Caucasian	141	65.6
Black or African American	29	13.5
Asian	28	13.0
American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander	1	0.5
Hispanic or Latino/a/x	15	7.0
Biracial or Multiracial	1	0.5
Other	-	-
Prefer not to say	-	-

**Sexual Orientation**

Straight	198	92
Gay or Lesbian	10	4.7
Bisexual	7	3.3
Other	-	-
Prefer not to say	-	-

**Years of Experience**

Less than 1	9	4.2
1-5 years	49	22.8
6-10	53	24.7
11-15	45	20.9
More than 15	59	27.4

**Primary Caregiving Role**

Yes	132	60.0
No	86	40.0

**Specialty**

Family Medicine	38	17.7
Internal Medicine	33	15.3
Emergency Medicine	19	8.8
Hospital Medicine	41	19.1
Pediatrics	20	9.3
Surgery (General or Subspecialty)	16	7.4
Psychiatry	12	5.6
Obstetrics & Gynecology	9	4.2
Anesthesiology	5	2.3

Radiology	5	2.3
Oncology	5	2.3
Otolaryngologist (ENT)	4	1.9
Dermatology	3	1.4
Cardiology	2	0.9
Pathology	1	0.5
Endocrinology	1	0.5
Neurology	1	0.5
<b>Gender Composition</b>		
Mostly men	45	20.9
Gender balanced	138	64.2
Mostly women	32	14.9
<b>Type of Hospital</b>		
Academic or teaching hospital	69	34.2
Community hospital	74	36.6
Veterans Affairs (VA) or military hospital	5	2.5
Private hospital	54	26.7

*Note.* All demographic variables were reported out of the total sample of 215 participants, except for hospital type, which had 13 missing responses (n = 202)

## **Procedure**

Participants were recruited and compensated for their participation through Centiment, an online platform for panel research on targeted samples, like physicians. Centiment restricted recruitment to US based panelists who (a) indicated “Healthcare” as their industry, (b) identified “Doctor/Physician” as their job function, and (c) confirmed via a custom screening question that they were currently working in a hospital setting at least four days a week. Eligible individuals were directed to an online consent form, where they will be informed about the nature of the study, their rights as participants, and the conditions of compensation. Upon providing informed consent, participants were given access to the full survey. The survey began with a series of validated scales measuring the study’s primary variables, followed by the demographic questions.

To ensure data quality, Centiment required respondents to pass an embedded attention check in order to receive compensation. Responses failing this check or completed in less than 30% of the median completion time (i.e., “speeders”), were excluded prior to dataset delivery. As such, in the dataset provided, no participants failed the attention check, and all valid responses met completion-time criteria. The survey required responses to all items; therefore, no missing data were present.

## **Measures**

### ***MCC***

Masculinity Contest Culture (MCC) was assessed using the eight-item MCC scale (Glick et al., 2018). Participants responded to the prompt, “Thinking about your membership in your organization, please rate these statements regarding your experiences,” using a 5-point Likert scale ranging from 1 (“Not at all true of my organization”) to 5 (“Entirely true of my organization”) (Glick et al., 2018). Example items include, “In my work environment, admitting you don’t know the answer looks weak,” and “In my work environment, taking days off is frowned upon” (Glick et al., 2018). The 8-item MCC scale demonstrated high reliability ( $\alpha = .80$ ) (Glick et al., 2018). See Appendix A for the 8-item MCC Scale.

### ***Mental Health Symptoms***

Mental health was assessed using the four-item Patient Health Questionnaire (PHQ-4), which screens for symptoms of anxiety and depression (Kroenke et al., 2009). Participants responded to the prompt “Over the last two weeks, how often have you been bothered by...” using a four-point Likert scale ranging from “Not at all” to “Nearly every day” (Kroenke et al., 2009). Sample items included “Feeling nervous, anxious or on edge” and “Little interest or pleasure in doing things” (Kroenke et al., 2009). The PHQ-4 demonstrated good internal reliability of above ( $\alpha > .0.80$ ) (Kroenke et al., 2009). See Appendix B for the PHQ-4 Scale.

### ***Well-Being***

Well-being was assessed using the five-item Medical Outcomes Study (MOS) Short-Form General Health Survey, which is used to assess overall health, including five items related to psychological health (Stewart et al., 1988; Ware et al., 1992). Participants responded to the prompt, “Over the past month, how often have you felt...” using a six-point Likert scale, ranging from “Not at all” to “Nearly every day” (Stewart et al., 1998). Sample items included “I have been a very nervous person”, and “I have felt calm and peaceful” (Ware et al., 1992). The scale demonstrated strong internal consistency ( $\alpha = .83$ ) (Ware et al., 1992). See Appendix B for the MOS, Short Form Health Survey items.

### ***Experiences of Incivility***

Experiences of incivility was assessed using the five-item Workplace Incivility Scale (WIS), which is used to measure mistreatment at work (Cortina et al., 2001; Lim & Cortina, 2005). Participants responded to the prompt, “During the PAST YEAR, were you ever in a situation in which any of your supervisors or co-workers...”, using a five-point Likert scale, ranging from “Never” to “Very often” (Cortina et al., 2001). Sample items include, “addressed you in unprofessional terms, either publicly or privately” and “jokes at your expense” (Cortina et al., 2001). The WIS has demonstrated high internal consistency ( $\alpha = .92$ ). See Appendix B for the WIS.

### ***Burnout***

Burnout was assessed using the nine-item Maslach Burnout Inventory – Human Services Survey for Medical Personnel (Short Form) (MBI-HSS (MP) Short Form) (West et al., 2012), which was adapted from the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS, MP), which consists of 22 items (Maslach et al., 1996). The MBI-HSS (MP), Short Form, is used to measure burnout in medical professionals using three subscales,

emotional exhaustion, depersonalization and personal accomplishment, with three items each (West et al., 2012). Participants responded to the prompt, “The following nine statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about *your* job.”, using seven-point Likert, from “Never” to “Every day” (West et al., 2012). Sample items include, “I feel emotionally drained from my work” and “I deal very effectively with the problems of my patients” (West et al., 2012). The MBI-HSS (MP) demonstrated acceptable internal consistency ( $\alpha \geq .71$ ) (West et al., 2012). See Appendix B for the MBI-HSS (MP) Short Form.

### ***Turnover Intentions***

Turnover intentions were measured by two items from Munsch et al. (2018); “Taking everything into consideration, over the last year how often did you seriously consider quitting your current job”; and “Taking everything into consideration, how likely is it that you will make a genuine effort to find a new job with another employer within the next year?”. Participants responded using a seven-point Likert, ranging from “very unlikely” to “very likely” (Munsch et al., 2018). See Appendix B for the items pertaining to turnover intentions.

### ***Career satisfaction***

Career satisfaction was measured by three items from Munsch et al. (2018); “All in all, how satisfied are you with your current job?”; “Knowing what you know now, how likely would you do this same job”; and “How likely are you to recommend this job to someone else?”. The first item was assessed using a 7-point scale ranging from 1 (very dissatisfied) to 7 (very satisfied), while the remaining two items were rated on a 7-point scale from 1 (very unlikely) to 7 (very likely) (Munsch et al., 2018). These items have demonstrated high internal consistency ( $\alpha = .85$ ) (Munsch et al., 2018). See Appendix B for the three career satisfaction items.

### ***Self-Rated Job Performance***

Self-rated job performance was assessed using two items by Glick et al. (2018); “I am satisfied with my work performance”, and “I am performing at work to my full potential”. Participants were asked to respond using a four-point Likert scale, from “None of the time” to “All of the time” (Glick et al., 2018). These items have demonstrated high internal consistency ( $\alpha = .80$ ) (Glick et al., 2018). See Appendix B for the two items on work performance.

In addition to the main study measures above, the following exploratory measure was also included in the study.

### ***Coping***

Coping strategies were assessed using an adapted version of the Mini COPE inventory consisting of 14 items by Carver (1997); “I’ve been turning to work or other activities to take my mind off things”, and “I’ve been giving up trying to deal with it”. Participants were asked to respond using a four-point Likert scale, from “I haven’t been doing this at all” to “I’ve been doing this a lot”. See Appendix B for the adapted 14-items Mini Cope. Consistent with prior conceptualizations, these strategies can be categorized as adaptive problem-focused (active coping, planning, instrumental support), adaptive emotion-focused (positive reframing, acceptance, emotional support), context-dependent adaptive strategies (humor, religion), and maladaptive strategies, which may be avoidant (self-distraction, denial, substance use, behavioral disengagement) or emotion-focused (self-blame, venting) (Carver, 1997).

### ***Demographic Variables***

Demographic information was collected as part of the study, including gender, race, age, sexual orientation, parental role, medical specialty, years of experience and size of work context. See Appendix C for demographic questions.

## **Attention Checks**

To ensure data quality, an attention check was embedded in the study (Abbey & Meloy, 2017). Participants were informed via recruitment materials on Centiment and the Qualtrics consent form that failing these checks would result in withheld compensation. An example item instructed participants to select a specific response (e.g., “Agree”) to confirm attentiveness. See Appendix C for attention check item.

## Chapter 4: Results

### Descriptive Statistics and Correlations

All measures demonstrated acceptable to good internal reliability, ( $\alpha=.65$  to  $.89$ ) (See Table 2). Skewness and kurtosis values for all study variables were within recommended thresholds ( $|\text{skew}| < 2$ ,  $|\text{kurtosis}| < 7$ ), suggesting no severe violations of normality (Tabachnick & Fidell, 2019). In addition, visual inspections of histograms and Q–Q plots supported the assumption of normality (Tabachnick & Fidell, 2019).

Table 2. presents the means, standard deviations, reliabilities, and correlations among study variables. As expected, masculinity contest culture (MCC) was positively associated with mental health symptoms ( $r = .35, p < .01$ ), burnout ( $r = .33, p < .01$ ), experiences of incivility ( $r = .47, p < .01$ ), and turnover intentions ( $r = .28, p < .01$ ), and negatively associated with well-being ( $r = -.33, p < .01$ ), career satisfaction ( $r = -.21, p < .01$ ), and self-rated job performance ( $r = -.15, p < .05$ ).

Consistent with prior research, mental health symptoms were positively correlated with burnout ( $r = .65, p < .01$ ), experiences of incivility ( $r = .55, p < .01$ ), and turnover intentions ( $r = .39, p < .01$ ), negatively correlated with well-being ( $r = -.77, p < .01$ ), satisfaction ( $r = -.32, p < .01$ ), and performance ( $r = -.18, p < .01$ ). Well-being was negatively correlated with burnout ( $r = -.73, p < .01$ ) and positively correlated with satisfaction ( $r = .47, p < .01$ ) and performance ( $r = .44, p < .01$ ). Burnout was positively correlated with experiences of incivility ( $r = .54, p < .01$ ) and turnover intentions ( $r = .46, p < .01$ ), and negatively correlated with satisfaction ( $r = -.51, p < .01$ ) and performance ( $r = -.48, p < .01$ ).

Among possible demographic covariates, being a caregiver was positively related to satisfaction ( $r = .19, p < .01$ ) and performance ( $r = .22, p < .01$ ), and negatively related to burnout

( $r = -.14, p < .05$ ), while older age was associated with better well-being ( $r = .16, p < .01$ ) and lower mental health symptoms ( $r = -.18, p < .01$ ), and experiences of incivility ( $r = -.17, p < .01$ ). Years of experience showed a similar pattern, correlating positively with well-being ( $r = .24, p < .01$ ), satisfaction ( $r = .19, p < .05$ ), and self-rated performance ( $r = .20, p < .01$ ).

One-way ANOVAs were conducted to examine whether the five categorical demographic variables (race/ethnicity, sexual orientation, specialty, workplace gender composition, and hospital type) were associated with study outcomes. Masculinity contest culture (MCC) did not significantly differ by any demographic variable (all  $ps > .05$ ). Experiences of incivility differed by workplace gender composition,  $F(2, 212) = 4.78, p = .009, \eta^2 = .04$ . Post hoc comparisons indicated that physicians in mostly male workplaces reported significantly more incivility than those in gender-balanced workplaces; no other pairwise differences were significant. Burnout varied by sexual orientation,  $F(2, 211) = 4.85, p = .009, \eta^2 = .04$ , by specialty,  $F(7, 180) = 3.53, p = .001, \eta^2 = .12$ , and by gender composition,  $F(2, 212) = 5.37, p = .005, \eta^2 = .05$ . Gay and lesbian physicians reported higher burnout than straight physicians. Across specialties, emergency medicine and psychiatry physicians reported higher burnout than OBGYN physicians. In terms of gender composition, physicians in mostly male workplaces reported higher burnout than those in gender-balanced workplaces. Well-being was also associated with gender composition,  $F(2, 212) = 5.41, p = .005, \eta^2 = .05$ , such that physicians in gender-balanced workplaces reported greater well-being than those in mostly male workplaces. Mental health differed by sexual orientation,  $F(2, 211) = 3.80, p = .024, \eta^2 = .04$ , with gay and lesbian physicians reporting poorer mental health than straight physicians. Turnover intentions also varied by sexual orientation,  $F(2, 211) = 6.11, p = .003, \eta^2 = .06$ , with gay and lesbian physicians indicating higher turnover intentions than straight physicians. Satisfaction was related to sexual orientation,  $F(2, 211) = 3.75, p = .025, \eta^2 = .03$ , and

gender composition,  $F(2, 212) = 6.81, p = .001, \eta^2 = .06$ . Straight physicians reported higher satisfaction than gay and lesbian physicians, and physicians in gender-balanced workplaces reported higher satisfaction than those in mostly male workplaces. Finally, performance differed by race/ethnicity,  $F(3, 209) = 2.91, p = .035, \eta^2 = .04$ , by specialty,  $F(7, 180) = 3.39, p = .002, \eta^2 = .12$ , and by gender composition,  $F(2, 212) = 5.33, p = .006, \eta^2 = .05$ . Black physicians reported higher performance than Asian physicians. Across specialties, OBGYN physicians reported higher performance than several other specialties (including psychiatry, family medicine, internal medicine, and emergency medicine). In terms of workplace composition, physicians in gender-balanced workplaces reported higher performance than those in mostly male workplaces. No outcomes were significantly associated with hospital type.

The above five categorical variables with multiple levels were dummy coded for use as covariates in regression analyses when they were significantly related to the dependent variable. Reference categories were selected based on theoretical and empirical precedent in the literature to provide meaningful comparison groups. Although gender and caregiver status are also categorical, these variables were binary (0/1) and thus entered directly into the models without dummy coding. Specialty was not dummy coded, as it included too many distinct categories without a meaningful reference point; it was examined descriptively only. Details of dummy coding and reference categories are provided for each covariate in the tables where they were used. In addition, to contextualize these findings, Appendix D provides cross-tabulations among the categorical demographic variables (e.g., gender and caregiver status, specialty and workplace gender composition).

**Table 2.***Means, Standard Deviations and Correlations for Study Variables*

	<i>n</i>	<i>M</i>	<i>SD</i>	<i>α</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. MCC	215	2.95	0.79	0.77	-											
2. Mental Health Symptoms	215	1.69	0.70	0.84	.35**	-										
3. Well-Being	215	3.78	0.74	0.80	-.33**	-.77**	-									
4. Burnout	215	2.95	1.16	0.84	.33**	.65**	-.73**	-								
5. Incivility Experiences	215	2.08	0.89	0.89	.47**	.55**	-.49**	.54**	-							
6. Turnover Intentions	215	0.47	0.22	0.65	.28**	.39**	-.31**	.46**	.44**	-						
7. Career Satisfaction	215	4.06	0.87	0.83	-.21**	-.32**	.47**	.51**	-.32**	-.30**	-					
8. Job Performance	215	3.25	0.61	0.70	-.15*	-.18**	.44**	-.48**	-.25**	-.13*	.57**	-				
9. Gender	215	0.41	0.49	-	-.08	.12	-.12	.10	.08	.30	-.10	-.02	-			
10. Caregiver Status	215	0.61	0.49	-	.03	.03	.09	-.14*	.03	.02	.19**	.22**	-.10	-		
11. Age	215	3.02	1.05	-	-.04	-.18**	.16**	-.04	-.17**	-.03	-.06	0.02	-.17**	-.01	-	
12. Years of Experience	215	3.45	1.23	-	-.04	-.19**	.24**	-.1	-.12*	-.02	.19*	.20**	-.25**	.23**	.76**	-

*p* < .05 \*; *p* < .01\*\*

Note. Gender: Male = 0, Female = 1; Caregiver status: No = 0, Yes = 1

## **Hypothesis Tests**

All hypothesis testing was conducted using IBM SPSS Statistics, Version 31, with the PROCESS macro v.5 (Hayes, 2022; Hayes, 2025). PROCESS uses regression models to test main effects and interactions while adjusting for covariates. This approach allowed us to examine our primary hypotheses (H1–H7) as well as the moderation hypotheses (H8.1-H8.7). Given all predictors and covariates were entered into a single model, moderation results for H8.1-H8.7 are reported alongside the relevant main effect and interaction outcomes. To streamline presentation, one table for each outcome variable provides the pertinent coefficients, and significance tests for all variables, including both main effects and interaction effects. Consistent with Becker (2005), only demographic variables significantly related to the outcomes were included as covariates, based on correlations for continuous variables and one-way ANOVAs for categorical variables. The covariates retained for each outcome are reported in the regression tables.

### ***Hypothesis 1: Mental Health Symptoms***

The overall regression model was significant,  $R = .44$ ,  $R^2 = .19$ , Adjusted  $R^2 = .16$ ,  $F(8, 204) = 6.14$ ,  $p < .001$ . Among the covariates, sexual orientation was a significant covariate: physicians identifying as gay and lesbian reported increased mental health symptoms ( $B = 0.58$ ,  $SE = 0.21$ ,  $t(204) = 2.75$ ,  $p = .007$ ). Other demographic controls were not significant (all  $ps > .05$ ). Controlling for these variables, masculinity contest culture (MCC) was a significant positive predictor ( $B = 0.27$ ,  $SE = 0.08$ ,  $t(204) = 3.56$ ,  $p < .001$ ) of mental health symptoms. Thus, Hypothesis 1 was supported: MCC was positively associated with mental health symptoms among physicians (See Table 3).

### ***Hypothesis 8.1: MCC x Gender – Mental Health Symptoms***

The interaction between MCC and gender was included to test Hypothesis 8.1. Results revealed that the MCC  $\times$  Gender interaction was nonsignificant ( $B = 0.10$ ,  $SE = 0.12$ ,  $t(204) = -0.89$ ,  $p = .374$ ). Thus, Hypothesis 8.1 was not supported: gender did not moderate the relationship between MCC and mental health symptoms (See Table 3).

**Table 3.**

*Regression Analyses Predicting Mental Health Symptoms from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	.82	.25	3.27	.001
Caregiver Status	.10	.09	1.04	.298
Gender Balanced	-.14	.12	-1.19	.236
Mostly Women	-.03	.15	-.19	.846
Gay and Lesbian	.58	.21	2.75	.007
Bisexual	-.10	.27	-.37	.710
MCC	.27	.08	3.56	< .001
Gender	-.10	.35	-.28	.782
MCC x Gender	.10	.12	.89	.374

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Caregiver status coded 0 = no, 1 = yes. Reference group for sexual orientation is heterosexual (straight). Reference group for workplace gender composition is mostly men.

***Hypothesis 2: Well-Being***

The overall regression model was significant,  $R = .48$ ,  $R^2 = .23$ , Adjusted  $R^2 = .20$ ,  $F(7, 206) = 8.78$ ,  $p < .001$ . Among the covariates, years of experience ( $B = 0.13$ ,  $SE = 0.06$ ,  $t(206) = 2.18$ ,  $p = .030$ ) and working in gender-balanced workplaces ( $B = 0.25$ ,  $SE = 0.12$ ,  $t(206) = 2.07$ ,  $p = .040$ ) were associated with higher well-being. Controlling for these variables, MCC was a significant negative predictor of well-being,  $B = -0.16$ ,  $SE = 0.08$ ,  $t(206) = -2.00$ ,  $p = .047$ . Thus, Hypothesis 2 was supported: MCC was negatively associated with physician well-being (see Table 4).

***Hypothesis 8.2: MCC x Gender – Well-Being***

To test moderation, the MCC × Gender interaction was examined. The interaction was significant,  $B = -0.33$ ,  $SE = 0.12$ ,  $t(206) = -2.70$ ,  $p = .008$ . Simple slopes analyses showed that MCC was negatively related to well-being for both men ( $B = -0.16$ ,  $SE = 0.08$ ,  $p = .047$ ) and women ( $B = -0.48$ ,  $SE = 0.09$ ,  $p < .001$ ), with a significantly stronger negative association among women (see Figure 2). Thus, Hypothesis 8.2 was supported: gender moderated the relationship between MCC and well-being, such that women physicians experienced greater declines in well-being under higher MCC as compared to men physicians (see Table 4).

**Table 4.**

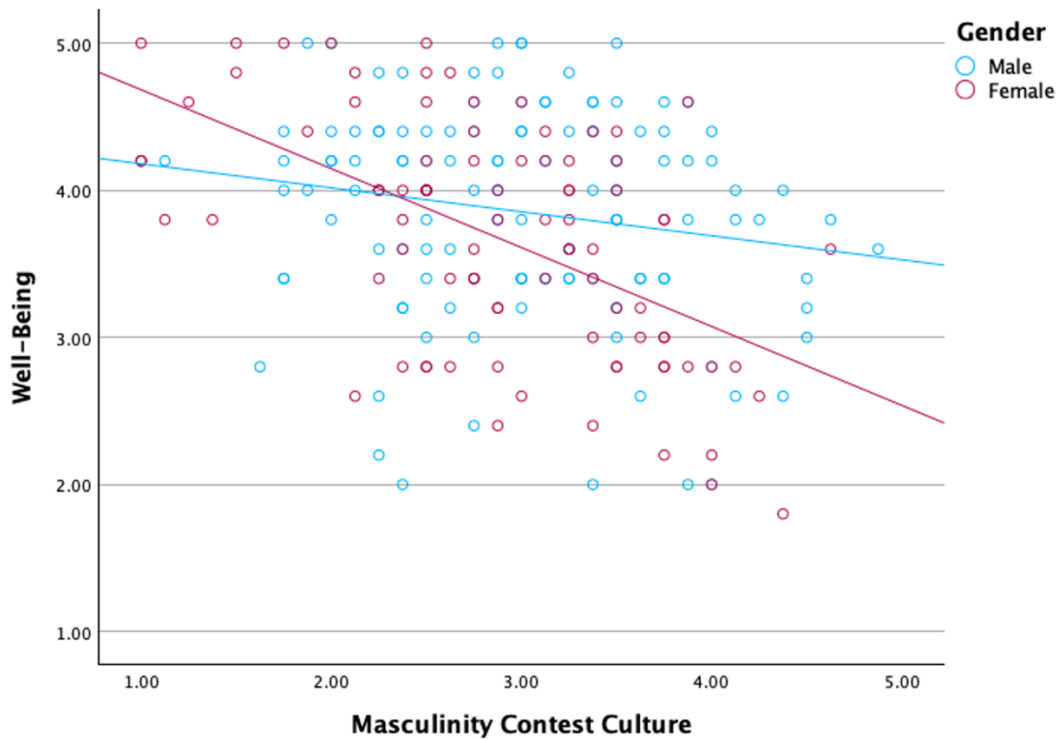
*Regression Analyses Predicting Well-Being from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	3.69	.31	11.91	<.001
Age	-.01	.07	-.10	.919
Years of Experience	.13	.06	2.18	.030
Gender Balanced	.25	.12	2.07	.040
Mostly Women	-.02	.16	-.10	.917
MCC	-.16	.08	-2.00	.047
Gender	.86	.36	2.36	.019
MCC x Gender	-.33	.12	-2.70	.008

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Reference group for workplace gender composition is mostly men.

**Figure 2.**

*Gender as a Moderator between MCC and Well-Being*



### ***Hypothesis 3: Burnout***

The overall regression model was significant,  $R = .46$ ,  $R^2 = .21$ , Adjusted  $R^2 = .18$ ,  $F(8, 204) = 6.87$ ,  $p < .001$ . Among the covariates, sexual orientation was significant: physicians identifying as gay and lesbian reported higher burnout than those who reported being straight ( $B = 1.01$ ,  $SE = 0.35$ ,  $t(204) = 2.93$ ,  $p = .004$ ). In addition, there was a marginal effect of workplace gender composition, with physicians in gender-balanced workplaces reporting lower burnout than those in mostly-male workplaces ( $B = -0.35$ ,  $SE = 0.19$ ,  $t(204) = -1.82$ ,  $p = .071$ ). Controlling for covariates, masculinity contest culture (MCC) was a significant positive predictor of burnout ( $B = 0.34$ ,  $SE = 0.12$ ,  $t(204) = 2.74$ ,  $p = .007$ ). Thus, Hypothesis 3 was supported: MCC was positively associated with physician burnout (see Table 5).

### ***Hypothesis 8.3: MCC x Gender – Burnout***

To test moderation, the MCC  $\times$  Gender interaction was examined. The interaction was not significant ( $B = 0.30$ ,  $SE = 0.19$ ,  $t(204) = 1.58$ ,  $p = .115$ ), indicating that the positive association between MCC and burnout did not differ between men and women physicians. Therefore, Hypothesis 8.3 was not supported (see Table 5).

**Table 5.**

*Regression Analyses Predicting Burnout from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	2.18	.41	5.28	<.001
Caregiver Status	-.23	.15	-1.53	.128
Gender Balanced	-.35	.19	-1.82	.071
Mostly Women	.07	.25	.29	.772
Gay and Lesbian	1.01	.35	2.93	.004
Bisexual	-.25	.45	-.56	.578
MCC	.34	.12	2.74	.007
Gender	-.66	.57	-1.15	.250
MCC x Gender	.30	.19	1.58	.115

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Caregiver status coded 0 = no, 1 = yes. Reference group for sexual orientation is heterosexual (straight). Reference group for workplace gender composition is mostly men.

***Hypothesis 4: Experiences of Incivility***

The overall regression model was significant,  $R = .53$ ,  $R^2 = .28$ , Adjusted  $R^2 = .26$ ,  $F(6, 207) = 13.40$ ,  $p < .001$ . Among the covariates, age was negatively associated with experiences of incivility ( $B = -0.13$ ,  $SE = 0.05$ ,  $t(207) = -2.52$ ,  $p = .013$ ), such that older physicians reported experiencing less incivility. Workplace gender composition was also significant, with physicians in gender-balanced workplaces reporting lower incivility experiences than those in mostly-male workplaces ( $B = -0.35$ ,  $SE = 0.14$ ,  $t(207) = -2.51$ ,  $p = .013$ ). Controlling for covariates, masculinity contest culture (MCC) was a significant positive predictor of incivility experiences ( $B = 0.45$ ,  $SE$

= 0.09,  $t(207) = 5.04, p < .001$ ). Thus, Hypothesis 4 was supported: MCC was positively associated with physician incivility experiences (see Table 6).

***Hypothesis 8.4: MCC x Gender – Experiences of Incivility***

The MCC × Gender interaction was included to test Hypothesis 8.4. The interaction was not significant ( $B = 0.14, SE = 0.14, t(207) = 1.02, p = .308$ ), indicating that the positive association between MCC and experiences of incivility did not differ between men and women physicians. Therefore, Hypothesis 8.4 was not supported (see Table 6).

**Table 6.**

*Regression Analyses Predicting Incivility from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	1.34	.35	3.78	<.001
Age	-.13	.05	-2.52	.013
Gender Balanced	-.35	.14	-2.51	.013
Mostly Women	-.19	.18	-1.06	.292
MCC	.45	.09	5.04	<.001
Gender	-.30	.42	-0.73	.469
MCC x Gender	.14	.14	1.02	.308

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Reference group for workplace gender composition is mostly men.

***Hypothesis 5: Turnover Intentions***

The overall regression model was significant,  $R = .35, R^2 = .12, \text{Adjusted } R^2 = .10, F(5, 207) = 5.73, p < .001$ . Among the covariates, sexual orientation was significant: physicians identifying as gay and lesbian reported higher turnover intentions than their heterosexual counterparts ( $B = 0.21, SE = 0.07, t(207) = 3.14, p = .002$ ). Controlling for covariates, masculinity contest culture (MCC) was a significant positive predictor of turnover intentions ( $B = 0.07, SE = 0.02, t(207) = 2.92, p = .004$ ). Thus, Hypothesis 5 was supported: MCC was positively associated with physician turnover intentions (see Table 7).

### ***Hypothesis 8.5: MCC x Gender – Turnover Intentions***

The MCC × Gender interaction was included to test Hypothesis 8.5. The interaction was not significant ( $B = 0.01$ ,  $SE = 0.04$ ,  $t(207) = 0.16$ ,  $p = .876$ ), indicating that the positive association between MCC and turnover intentions did not differ between men and women physicians. Therefore, Hypothesis 8.5 was not supported (see Table 7).

**Table 7.**

#### *Regression Analyses Predicting Turnover Intentions from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	.25	.07	3.33	.001
Gay and Lesbian	.21	.07	3.14	.002
Bisexual	-.06	.09	-.68	.497
MCC	.07	.02	2.92	.004
Gender	.01	.11	.10	.924
MCC x Gender	.01	.04	.16	.876

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Reference group for sexual orientation is heterosexual (straight).

### ***Hypothesis 6: Career Satisfaction***

The overall regression model was significant,  $R = .41$ ,  $R^2 = .17$ , Adjusted  $R^2 = .14$ ,  $F(8, 204) = 5.14$ ,  $p < .001$ . Several covariates were significant. Physicians identifying as gay and lesbian reported lower satisfaction than their heterosexual counterparts ( $B = -0.65$ ,  $SE = 0.27$ ,  $t(204) = -2.45$ ,  $p = .015$ ). Caregivers reported higher satisfaction than non-caregivers ( $B = 0.26$ ,  $SE = 0.12$ ,  $t(204) = 2.24$ ,  $p = .026$ ). Physicians working in gender-balanced workplaces also reported greater satisfaction than those in mostly-male workplaces ( $B = 0.37$ ,  $SE = 0.15$ ,  $t(204) = 2.46$ ,  $p = .015$ ). After accounting for these covariates, MCC was not a significant predictor of satisfaction ( $B = -0.09$ ,  $SE = 0.10$ ,  $t(204) = -0.90$ ,  $p = .371$ ). Thus, Hypothesis 6 was not supported.

### ***Hypothesis 8.6: MCC x Gender – Career Satisfaction***

The MCC × Gender interaction was significant ( $B = -0.30$ ,  $SE = 0.15$ ,  $t(204) = -2.01$ ,  $p = .046$ ). Simple slopes analysis revealed that MCC was not significantly related to satisfaction for men ( $B = -0.09$ ,  $SE = 0.10$ ,  $t(204) = -0.90$ ,  $p = .371$ ) but was negatively related for women ( $B = -0.38$ ,  $SE = 0.11$ ,  $t(204) = -3.43$ ,  $p = .001$ ) (see Figure 3). Thus, Hypothesis 8.6 was supported: MCC was negatively associated with career satisfaction for women physicians, but not for men (see Table 8).

**Table 8.**

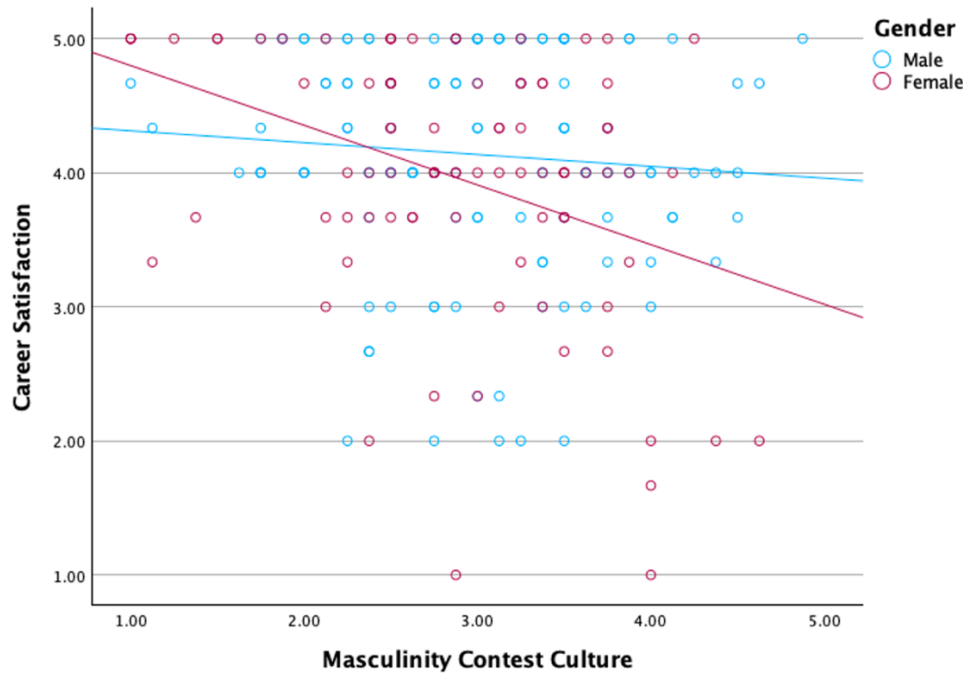
*Regression Analyses Predicting Career Satisfaction from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	3.97	.32	12.44	<.001
Caregiver Status	.26	.12	2.24	.026
Gender Balanced	.37	.15	2.46	.015
Mostly Women	.13	.19	.67	.507
Gay and Lesbian	-.65	.27	-2.45	.015
Bisexual	.24	.35	.69	.492
MCC	-.09	.10	-.90	.371
Gender	.74	.44	1.67	.096
MCC x Gender	-.30	.15	-2.01	.046

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Caregiver status coded 0 = no, 1 = yes. Reference group for sexual orientation is heterosexual (straight). Reference group for workplace gender composition is mostly men.

**Figure 3.**

*Gender as a Moderator between MCC and Career Satisfaction*



***Hypothesis 7: Self-Rated Job Performance***

The overall regression model was significant,  $R = .45$ ,  $R^2 = .20$ , Adjusted  $R^2 = .16$ ,  $F(10, 203) = 5.18$ ,  $p < .001$ . Several covariates were significant predictors of self-rated performance. Caregivers reported higher performance than non-caregivers ( $B = 0.18$ ,  $SE = 0.08$ ,  $t(203) = 2.21$ ,  $p = .028$ ). Physicians working in gender-balanced workplaces also reported higher performance than in mostly-male workplaces ( $B = 0.21$ ,  $SE = 0.10$ ,  $t(203) = 2.08$ ,  $p = .038$ ). In addition, years of experience was positively related to performance ( $B = 0.08$ ,  $SE = 0.03$ ,  $t(203) = 2.35$ ,  $p = .020$ ). Controlling for covariates, MCC was not a significant predictor ( $B = 0.06$ ,  $SE = 0.06$ ,  $t(203) = 0.96$ ,  $p = .336$ ). Thus, Hypothesis 7 was not supported.

***Hypothesis 8.7: MCC x Gender – Self-Rated Job Performance***

The  $MCC \times Gender$  interaction was significant ( $B = -0.36$ ,  $SE = 0.10$ ,  $t(203) = -3.52$ ,  $p < .001$ ). Simple slopes analysis indicated that MCC was not related to self-ratings of performance for men ( $B = 0.06$ ,  $SE = 0.06$ ,  $t(203) = 0.96$ ,  $p = .336$ ), but was negatively associated with self-

ratings of performance for women ( $B = -0.29$ ,  $SE = 0.08$ ,  $t(203) = -3.82$ ,  $p < .001$ ) (See Figure 4). Thus, Hypothesis 8.7 was supported: MCC was negatively associated with self-rated job performance for women physicians, but not for men (see Table 9).

**Table 9.**

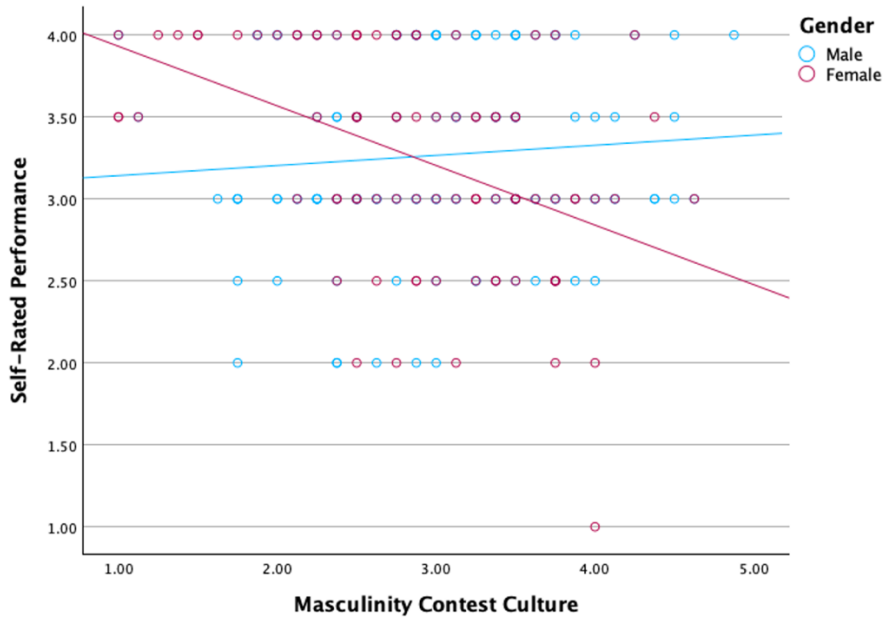
*Regression Analyses Predicting Self-Rated Performance from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	2.51	0.25	9.91	<.001
Caregiver Status	0.18	0.08	2.21	.028
Years of Experience	0.08	0.03	2.35	.020
Gender Balanced	0.21	0.10	2.08	.038
Mostly Women	-0.02	0.13	-0.16	.875
Black/African American	0.13	0.12	1.11	.267
Asian	-0.13	0.12	-1.08	.281
Hispanic or Latino/a/x	0.15	0.15	0.99	.323
MCC	0.06	0.06	0.96	.336
Gender	1.12	0.31	3.68	<.001
MCC x Gender	-0.36	0.10	-3.52	<.001

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women. Caregiver status coded 0 = no, 1 = yes. Reference group for sexual orientation is heterosexual (straight). Reference group for workplace gender composition is mostly men. Reference group for race is White/Caucasian.

**Figure 4.**

*Gender as a Moderator between MCC and Self-Rated Performance*



## Exploratory Analyses

### *Caregiving Status as Moderator*

All of the relationships tested in Hypotheses 1 through 7 were examined with caregiving status as a moderator. None of the interactions were significant (all  $p$ s  $>.05$ ), with the exception of turnover intentions (see Table 10 and Figure 5). The MCC  $\times$  Caregiver interaction significantly predicted turnover intentions ( $B = 0.08$ ,  $SE = 0.04$ ,  $t(208) = 2.05$ ,  $p = .041$ ). Simple slopes analysis showed that MCC was positively associated with turnover intentions for caregivers ( $B = 0.10$ ,  $SE = 0.02$ ,  $t(208) = 4.46$ ,  $p < .001$ ), but not for non-caregivers ( $B = 0.02$ ,  $SE = 0.03$ ,  $t(208) = 0.72$ ,  $p = .470$ ). These findings suggest that MCC was positively associated with turnover intentions for physicians with caregiving responsibilities, but not for non-caregivers.

**Table 10.**

*Regression Analyses Predicting Turnover Intentions from MCC and Caregiving Status*

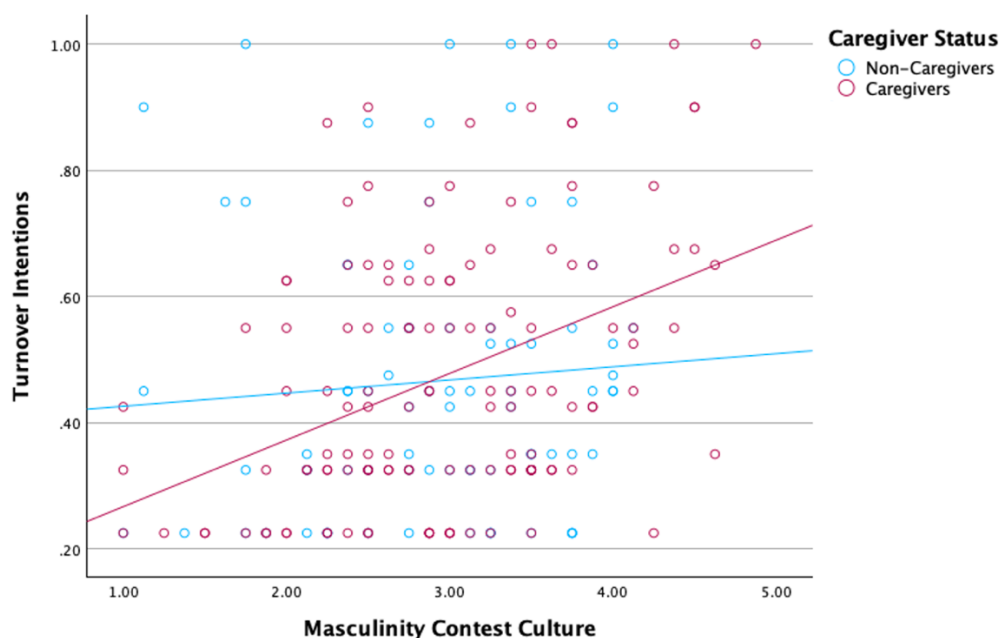
<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	.39	.09	4.26	<.001
Gay and Lesbian	.19	.07	2.90	.004

Regression Input	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Bisexual	-.08	.08	-1.00	.321
MCC	.02	.03	.72	.470
Caregiving Status	-.22	.11	-1.87	.062
MCC x Caregiving	.08	.04	2.05	.041

Note. N = 215. MCC = Masculinity Contest Culture. Caregiver status coded 0 = no, 1 = yes. Reference group for sexual orientation is heterosexual (straight).

**Figure 5.**

*Caregiving Status as a Moderator between MCC and Turnover Intentions*



### ***Coping Strategies***

Bivariate correlations indicated that masculinity contest culture (MCC) was positively associated with several maladaptive coping strategies, including self-distraction ( $r = .15, p < .05$ ), denial ( $r = .19, p < .01$ ), behavioral disengagement ( $r = .19, p < .01$ ), venting ( $r = .18, p < .01$ ), and self-blame ( $r = .17, p < .05$ ). Additionally, gender was also related to particular coping strategies, one adaptive, and one maladaptive, such that women reported greater use of

instrumental support ( $r = .21, p < .01$ ) and self-blame ( $r = .20, p < .01$ ) compared to men. In addition, caregiver status was positively associated with the use of religion as a coping strategy ( $r = .24, p < .001$ ). Age and years of experience were consistently negatively related to several coping strategies, including self-distraction, social and instrumental support, venting, positive reframing, humor, acceptance, and self-blame (all  $ps < .05$ ).

**Table 11.***Correlations Matrix to Exploring Coping Strategies in Relation to MCC and Gender*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. MCC	2.95	0.79	-																			
2. Gender	0.41	0.49	-.08	-																		
3. Caregiving Status	0.61	0.49	.03	-.10	-																	
4. Age	3.02	1.05	-.04	-.17*	-.01	-																
5. Years of Experience	3.45	1.23	-.04	-.25**	.23**	.76**	-															
6. Coping 1	2.33	0.99	.15*	.03	.01	-.23**	-.13	-														
7. Coping 2	2.51	0.97	.10	.13	.02	-.04	-.05	.44**	-													
8. Coping 3	1.56	0.85	.19**	-.03	.07	-.05	-.01	.25**	.27**	-												
9. Coping 4	1.38	0.69	.10	-.01	.01	-.07	-.05	.162*	.10	.39**	-											
10. Coping 5	2.48	1.01	-.01	.09	-.03	-.29**	-.26**	.18**	.27**	.16*	.14*	-										
11. Coping 6	2.42	1.00	-.01	.21**	.06	-.30**	-.26**	.26**	.24**	.14*	0.12	.76**	-									
12. Coping 7	1.56	0.89	.19**	.08	.01	-.10	-.03	.33**	.13*	.52**	.41**	.19**	.27**	-								
13. Coping 8	1.84	0.92	.18**	.06	.09	-.16*	-.10	.25**	.17*	.39**	.36**	.30**	.30**	.45**	-							

14. Coping 9	2.54	1.03	-.08	-.02	.12	-.17*	-.10	.27**	.30**	.17*	.15*	.40**	.36**	.14*	.30**	-					
15. Coping 10	2.6	1.06	.11	.12	.05	-.11	-.20**	.27**	.45**	.14*	.05	.44**	.46**	.12	.25**	.53**	-				
16. Coping 11	2.27	1.08	.07	-.01	-.05	-.16*	-.14*	.24**	.25**	.24**	.20**	.28**	.31**	.22**	.31**	.38**	.31**	-			
17. Coping 12	2.65	0.98	.09	.02	.08	-.21**	-.19**	.36**	.36**	.15*	.12	.32**	.34**	.14*	.28**	.52**	.47**	.53**	-		
18. Coping 13	2.44	1.13	.04	.07	.24**	-.10	.02	.20**	.18**	.17*	.02	.23**	.28**	.14*	.19**	.36**	.31**	.11	.30**	-	
19. Coping 14	1.84	0.92	.17*	.20**	.02	-.26**	-.23**	.28**	.13	.30**	.35**	.17*	.24**	.43**	.45**	.16*	.22**	.30**	.22**	.13*	-

$p < .05$  \*;  $p < .01$  \*\*

Note.  $N = 215$ , Gender: Male = 0, Female = 1; Caregiver status: No = 0, Yes = 1; Coping 1 = Self-Distraction, Coping 2 = Active Coping, Coping 3 = Denial, Coping 4 = Substance Use, Coping 5 = Use of Social Support, Coping 6 = Use of Instrumental Support, Coping 7 = Behavioral Disengagement, Coping 8 = Venting, Coping 9 = Positive Reframe, Coping 10 = Planning, Coping 11 = Humor, Coping 12 = Acceptance, Coping 13 = Religion, Coping 14 = Self-Blame.

To further examine these associations, we conducted moderation analyses using linear regression to test whether gender moderated the relationship between MCC and coping, controlling for age and years of experience when relevant.

**Behavioral Disengagement.** The overall model predicting behavioral disengagement was significant,  $F(3, 210) = 6.06, p = .001, R^2 = .08$ . The interaction between MCC and gender was significant ( $B = .42, SE = .15, t = 2.79, p = .006, 95\% CI [.12, .72]$ ). Conditional effects indicated that MCC was unrelated to behavioral disengagement among men ( $B = .04, SE = .10, p = .67$ ) but was positively associated among women ( $B = .46, SE = .11, p < .001$ ) (See Table 14, Figure 8).

**Table 12.**

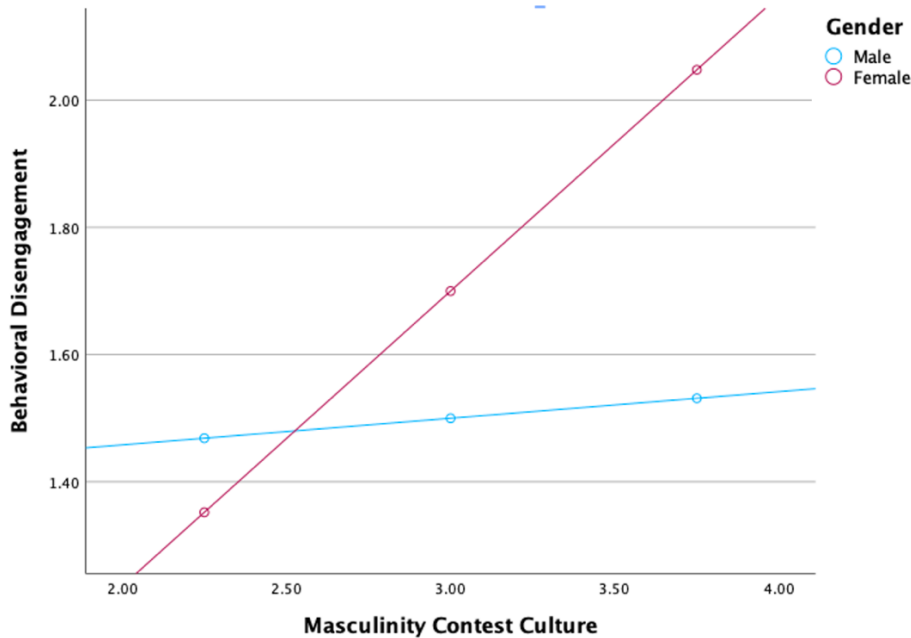
*Regression Analyses Predicting Behavioral Disengagement from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	1.37	0.31	4.45	<.001
Gender	-1.07	0.46	-2.31	.022
MCC	0.04	0.10	0.42	.674
MCC x Gender	0.42	0.15	2.79	.006

*Note.* N = 214. MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women.

**Figure 6.**

*Gender as a Moderator between MCC and Behavioral Disengagement*



**Self-Blame.** The overall model predicting self-blame was significant,  $F(5, 208) = 7.19, p < .001, R^2 = .15$ . The interaction between MCC and gender was significant ( $B = .41, SE = .15, t = 2.66, p = .009, 95\% CI [.11, .71]$ ). Conditional effects indicated that MCC was not significantly associated with self-blame among men ( $B = .02, SE = .10, p = .82$ ), but was positively associated among women ( $B = .43, SE = .12, p < .001$ ).

**Table 13.**

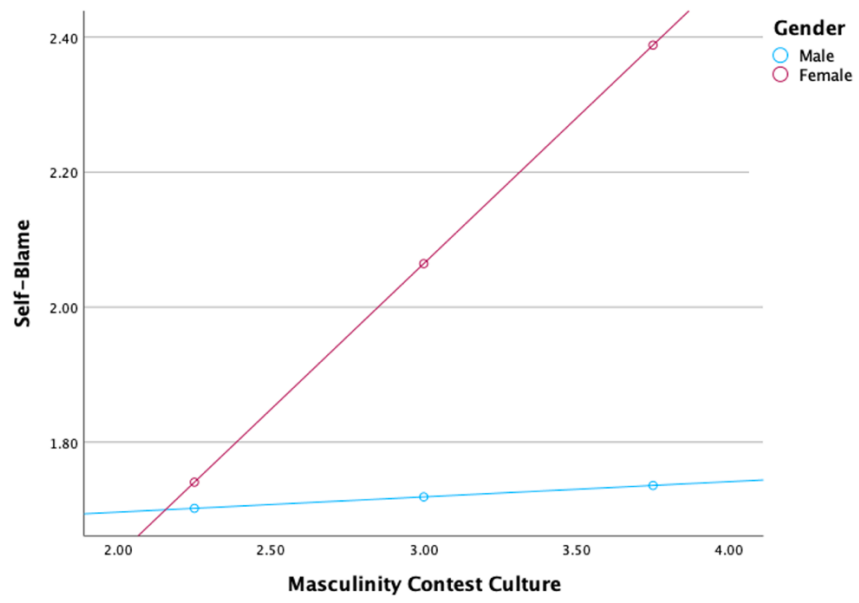
*Regression Analyses Predicting Self-Blame from MCC and Gender*

<b>Regression Input</b>	<b><i>B</i></b>	<b><i>SE</i></b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	2.26	0.38	5.95	<.001
Age	-0.21	0.09	-2.44	.016
Years of Experience	0.01	0.08	0.15	.881
Gender	-0.88	0.47	-1.88	.061
MCC	0.02	0.10	0.22	.823
MCC x Gender	0.41	0.15	2.66	.009

*Note.*  $N = 214$ . MCC = Masculinity Contest Culture. Gender coded 0 = men, 1 = women.

**Figure 7.**

*Gender as a Moderator between MCC and Self-Blame*



## Chapter 5: Discussion

In recent years, physician attrition has increased significantly, raising concerns about the broader culture of medicine, and its role in contributing to adverse outcomes in medicine, including poor mental health and well-being, burnout, mistreatment and career dissatisfaction (Shanafelt et al., 2015; West et al., 2018). These issues are particularly salient for women physicians, who experience increased risk of suffering from the above outcomes (Adesoye et al., 2017; Templeton et al., 2019).

In medicine, research and interventions have overwhelmingly targeted the symptoms or downstream outcomes of culture, such as burnout, mistreatment, or attrition, rather than the root cause itself: *the culture of medicine* (Shanafelt et al., 2019). While individual-level approaches offer valuable insight, they are often fragmented and limited in scope (Shanafelt et al., 2019). A broader, more systemic focus on culture, including the behaviors that are normalized and rewarded, provides a more comprehensive understanding of the challenges within medicine (Monton et al., 2025).

This study addresses this gap by applying the MCC theoretical model to medicine for the first time, with two main objectives. First, to investigate the relationship between MCC and physician outcomes, including mental health, well-being, burnout, experiences of incivility, turnover intentions, satisfaction, and performance. Second, to examine gender differences in the experiences of MCC and these outcomes, to highlight how the organizational culture of medicine may disproportionately impact female physicians, helping to explain the existing disparities in medicine.

As predicted, our study results revealed that higher levels of MCC were associated with adverse outcomes for physicians. Specifically, higher MCC predicted lower well-being, increased

mental health symptoms (anxiety and depression), burnout, experiences of incivility, and turnover intentions.

In addition, gender moderated the relationship between MCC and well-being, career satisfaction and self-rated performance. MCC was more strongly negatively associated with well-being for women physicians compared to men. For career satisfaction and self-rated performance, the main effects of MCC were not significant, but interactions with gender were, suggesting that MCC was negatively associated with career satisfaction and self-rated job performance among women physicians but not men.

Exploratory analyses revealed that MCC was positively associated with turnover intentions among physicians with caregiving responsibilities, but not among non-caregivers. Lastly, with respect to coping, MCC was positively associated with behavioral disengagement and self-blame among women physicians but not among men.

### **Theoretical Contributions**

This research contributes to the existing literature in a few meaningful ways. First, it extends the MCC framework to medicine. Although MCC has been examined in domains such as law enforcement, consulting and sport (Monton & Block, 2025; Regina & Allen, 2022; Rawski & Workman-Stark, 2018), it has not yet been examined in medicine. The framework offers a systematic way of advancing our understanding of the medical culture. Grounded in four norms, concealing vulnerability, demonstrating unrelenting strength and stamina, prioritizing work above all else, and engaging in toxic competition and dominance over peers (Berdahl et al., 2018), MCC provides valuable insight into the behaviors that are normalized within medicine and their negative outcomes. Our findings suggest that these norms are resonant in medicine and contribute to adverse outcomes, including heightened mental health symptoms, burnout, experiences of incivility,

turnover intentions, and diminished well-being. Notably, this study suggests that the culture of medicine may be the underlying cause of many challenges facing the physician workforce, including turnover and attrition. While prior research has often examined these outcomes in isolation, this work highlights the cultural dynamics which underpin them. By shifting the focus upstream, moving beyond symptoms to address the culture itself, this study provides a rationale for organizational and systemic change with the potential to foster healthier, safer and more inclusive environments for physicians. Given the high attrition rates in medicine and the looming physician shortage, this research underscores the urgent need to address the culture of medicine, as doing so may mitigate many of its harmful consequences.

Second, this study examined gender as a moderator between MCC and outcomes. Specifically, MCC was negatively associated with well-being for both men and women, though the adverse impact was more severe for women. In contrast, only women reported declines in career satisfaction and self-rated performance in MCC contexts, while men were unaffected. These results suggest that MCC disproportionately undermines women's experiences in medicine, aligning with prior research showing that masculinity contests place greater burdens on women, who face both heightened pressures to conform and backlash when they deviate from gendered expectations (Alonso, 2018; Berdahl et al., 2018; Matos et al., 2018; Workman-Stark, 2021a). Although turnover intentions were high among both male and female physicians in MCC contexts, the disproportionate negative effects on women's well-being, satisfaction, and self-rated performance may contribute to their greater likelihood of leaving the physician workforce.

Relatedly, a noteworthy finding was that physicians identifying as gay and lesbian appeared to fare worse across several outcomes. Compared to their heterosexual counterparts, they reported higher levels of mental health symptoms, burnout, and turnover intentions, as well as

lower career satisfaction. This pattern suggests that, alongside female physicians, those identifying as gay and lesbian may face distinct challenges in medicine, where their identities may be penalized for deviating from both narrow physician ideals and hegemonic norms of masculinity (Nye, 1997). These findings align with existing evidence that MCC environments pose distinctive challenges for women and minoritized groups (Alonso, 2018; Berdahl et al., 2018; Matos et al., 2018; Workman-Stark, 2021a), while suggesting that similar vulnerabilities related to sexual orientation may also impact physicians' experiences in medicine.

Conversely, older physicians in our study reported higher levels of well-being and were less likely to report experiences of incivility, indicating that age was negatively associated with these outcomes. This buffering effect may stem from accumulated professional capital, reduced exposure to competitive dynamics, and/or a shift in values and priorities over the career span. Another possible explanation is that, given MCC environments are hierarchical, physicians with more experience may occupy senior ranks, granting them privilege and shielding them from some of these dynamics. Research by Monton et al. (2024) found that through processes of socialization, senior or veteran members of organizations increasingly internalize the MCC over time. A similar process may be occurring here. Nonetheless, these findings highlight the importance of considering life course and career stage, as vulnerabilities and resilience to stressors may evolve across the trajectory of a physician's career.

Another interesting finding, from our results was the role of gender composition. The results indicated that physicians in male-dominated workplaces reported significantly higher levels of incivility experiences and burnout, and lower well-being, satisfaction, and performance compared to those in gender-balanced workplaces, suggesting that gender composition meaningfully influences physicians' workplace experiences and outcomes. This aligns with

broader organizational scholarship showing that employees in gender-balanced workplaces report greater satisfaction than those in gender-skewed contexts (Olafsdottir & Einarsdottir, 2024), and that unbalanced gender composition can heighten psychosocial strain, competition, and stress (Clark et al., 2022; Jonsson et al., 2013; Elwér et al., 2014). Within medicine, research shows that women working in male-dominated units experience more harassment, discrimination, and lower organizational support (Konrad et al., 2010), suggesting that skewed gender representation may disproportionately reinforce harmful cultural norms.

Third, our study identified caregiving responsibilities as a relevant demographic variable, one that has yet to be explored within the MCC literature. Caregiving status moderated the relationship between MCC and turnover intentions, with caregivers more likely to consider leaving than non-caregivers. Notably, in our sample, caregivers included both men and women, suggesting that caregiving penalties are not limited to women alone. This finding adds nuance to gender differences by highlighting how MCC may be exacerbating work–family conflict and undermining well-being across genders, while still disproportionately disadvantaging those expected to shoulder greater care burdens.

Adding further nuance, in our study, caregiving status was also negatively correlated with burnout, such that caregivers reported less burnout than non-caregivers. Therefore, caregiving status appeared to play a dual role, as it was negatively correlated with burnout, suggesting a potential protective effect, yet simultaneously associated with increased turnover intentions. This paradox adds to the literature by demonstrating how caregiving may function as a role demand with mixed consequences. While it may offer meaning and resilience that buffer against burnout, it may also generate competing commitments that render exit a more viable option when organizational culture becomes toxic. Integrating caregiving into MCC theory underscores how

the norm of ‘put work first’ (Berdahl et al., 2018) penalizes individuals managing competing role demands, consistent with evidence in medicine that professional obligations are expected to take precedence over personal commitments, even at the expense of health and well-being (Frank & Segura, 2009).

Lastly, in our study, MCC was correlated with maladaptive coping styles, including self-distraction, denial, behavioral disengagement, venting, and self-blame, that mirror and reinforce underlying norms. Research in the medical field has also documented similar patterns of coping, where physicians are more likely to adopt maladaptive strategies under demanding conditions (McCain et al., 2018; Dehon et al., 2021). To our knowledge, coping strategies have not yet been examined within the MCC literature, yet they may offer critical insight into how toxic MCC dynamics may be sustained and reinforced over time, while also highlighting how physicians attempt to manage their circumstances. Further analyses revealed that women, not men, relied more on behavioral disengagement and self-blame as coping strategies. Self-blame is especially problematic, as it can lead female physicians to internalize systemic dysfunction as personal failure, compounding both psychological harm and gender inequities. Taken together, these findings demonstrate that maladaptive coping strategies may contribute to the maintenance of MCC dynamics and the perpetuation of gender inequities.

### **Practical Implications**

This research suggests that the culture of medicine operates as a MCC. Conceptualizing it in this way reframes challenges such as burnout, attrition and compromised well-being as systemic outcomes of deeply entrenched cultural dynamics, rather than as byproducts to be managed in isolation. Accordingly, meaningful progress requires addressing the culture itself. Transforming organizational and systems-level culture is a complex undertaking that demands more than

surface-level or piecemeal interventions (Block & Noumair, 2017). It necessitates confronting the historical structures and deeply entrenched assumptions that continue to shape the practice of medicine today (Schein & Schein, 2017; Shanafelt et al., 2019).

Culture operates across levels of visibility, from observable behaviors and rituals to tacit, taken-for-granted assumptions that silently guide meaning and behavior (Schein & Schein, 2017). Over time, the shared beliefs and practices that once helped groups adapt to external challenges become institutionalized and passed to newcomers, generating stability and a sense of identity (Schein, 2010). Yet, these same assumptions can harden into constraints, perpetuating inequities and resisting change.

Gersick's (1991) concept of deep structure reminds us that social systems are built on foundational choices made early in their formation. These choices about who belongs, and how authority is exercised, and what is valued, become embedded over time, shaping subsequent norms and practices long after the original conditions have changed (Gersick, 1991). In medicine, these early design choices were made largely by and for white, heterosexual men, which means the profession's deep structure reflects their priorities, assumptions, and experiences (Chen et al., 2022a; Nye, 1997). As Nye (1997) demonstrates, medicine and science were organized as masculine "fields of honor", where credibility and authority were rooted in male-coded norms of independence, bravery and dominance.

Foster and Kaplan (2001) build on this, with their concept of invisible architecture, the taken-for-granted rules, routines, and mental models that quietly guide behavior. Over time, they argue, these invisible structures can "lock in", producing what they call cultural lock-in, a gradual stiffening of organizational systems that ossifies decision-making and reinforces the status quo (Foster & Kaplan, 2001, as cited in Block & Noumair, 2017). Once locked-in, even well-

intentioned efforts to diversify or modernize can be undermined because the very architecture of the system resists adaptation (Block & Noumair, 2017).

Applied to medicine, this cultural lock-in helps explain why the profession has been so slow to diversify. The invisible architecture built to serve a narrow portion of the population, heterosexual men, continues to dictate who is seen as credible, who advances, and whose contributions are valued. This misalignment with today's increasingly diverse workforce creates predictable inequities, women and LGBTQ+ physicians often experience disproportionate harm and suffering in MCC environments because the system was never designed with them in mind. While we cannot undo the initial choices that shaped medicine's deep structure, we can leverage organizational development to make visible the invisible architecture that maintains inequality and to create more inclusive organizational cultures (Block & Noumair, 2017).

A first, organizational-level intervention requires the intentional development of an organizational holding environment, a psychologically containing space where members can surface and work through the anxieties inherent in dismantling deeply entrenched cultural systems (Kahn, 2001; Mobasseri et al., 2024; Petriglieri & Petriglieri, 2020). Making the deep structure of the organization visible and open to reflection requires first creating the conditions for psychological safety, so that all members, and particularly those from marginalized and underrepresented identities, can participate fully in this process (Edmondson et al., 2018).

Within medicine, this involves creating spaces that help physicians collectively surface and confront the field's invisible architecture. Structured dialogues and facilitated learning communities can support this process by inviting reflection on how cultural assumptions around heroism, endurance, and suppression of vulnerability perpetuate inequities and undermine physician well-being. Importantly, this approach shifts the focus from "fixing" marginalized

individuals to cultivating the organization's capacity for learning and growth (Mobasseri et al., 2024). Petriglieri and Petriglieri (2010) refer to this as "identity workspaces" (p. 44), organizational contexts that enable members to engage with, rather than defensively avoid, the identity threats provoked by confronting oppressive structures. These spaces foster sensemaking, reduce defensiveness, and allow individuals, particularly those in dominant groups, to confront how their identity investments sustain systemic inequities (Petriglieri & Petriglieri, 2010; Mobasseri et al., 2024).

As a result, members are able to cultivate more integrated views of themselves and the collective, recognizing that addressing inequities requires reintegrating aspects of organizational identity, such as compassion, vulnerability, and interdependence, that have been suppressed by the prevailing MCC (Brown & Starkey, 2000; Kahn, 2001; Senge, 2006). In other words, both the organization and its members must be re-humanized. When designed intentionally, organizational holding environments can help members at all levels metabolize the discomfort of confronting bias, privilege and systemic inequities (Mobasseri et al., 2024). This intervention targets the deepest layers of culture, seeking to realign it with values of humanity and inclusion, while recalibrating its deep structure to the demands of a rapidly changing social and organizational landscape.

Aligned with the above, would be to ensure that equity and inclusion are directly embedded into institutional policies, practices, and training, centering the very conditions that determine whose needs are centered and whose are overlooked. Policies and programs must hold those at the margins in focus, ensuring that systems and structures account for their realities including women, caregivers, LGBTQ+ individuals, and although not salient in our study, physicians from racially

minoritized, lower socioeconomic status, neurodivergent identities and/or those with differing abilities.

Evidence that gender-balanced workplaces are associated with higher well-being and lower burnout further underscores the importance of retaining diverse physicians and creating environments where all can thrive. To this end, medical schools, residency programs, and hospital systems can integrate MCC awareness into leadership training, professional development, and well-being initiatives. By explicitly addressing MCC norms, institutions can foster healthier medical environments.

Based on our findings, organizations must also specifically ensure that there are policies and supports in place for work-family integration (flexible scheduling, parental leave, eldercare supports), which is critical for retention. Without these intentional policies and practices, physicians with caregiving responsibilities may opt to leave medicine because they have meaningful lives and obligations outside of work. Inequities within MCCs further compound this issue, as certain groups, such as women and physicians identifying as gay and lesbian, remain especially vulnerable to harm. Tailoring organizational strategies with these disparities in mind is essential to advancing equity, sustaining well-being, and strengthening the overall effectiveness of the medical system.

In addition to the above, leaders play a critical role in shaping healthy, equitable, and inclusive organizational culture. Culture change begins with those who hold the most power; leaders must examine how their own behaviors, decisions and identities contribute to maintaining the status quo and model the openness and learning required for the organization to evolve (Alderfer, 1991; Schein & Schein, 2017; Shapiro & Carr, 1991). Senior leaders play a particularly pivotal role in constructing inclusive work environments by doing three things, articulating

compelling reasons to engage in the emotionally demanding work of culture change, establishing structures and processes to sustain that work, and modeling vulnerability and self-reflection by publicly acknowledging their own learning and biases (Ely & Meyerson, 2010; Mobasser et al., 2024). In medicine, this includes white men in positions of power, who must be actively called into the work of equity and inclusion, rather than positioned outside of it.

Further, research demonstrates that leaders play a pivotal role in fostering equitable and inclusive organizational cultures. Inclusive leaders actively manage power and status differences to create environments where all members feel valued, respected, and able to contribute authentically (Perry et al., 2020). By cultivating belonging, fairness, and openness, through inviting diverse perspectives and addressing exclusionary behaviors, they reduce mistreatment and strengthen psychological safety across teams (Perry et al., 2020). Similarly, research indicates that perceptions of fairness and justice can buffer the effects of MCCs on harm (Workman-Stark, 2020, 2021b), while transformational leaders may further mitigate these effects by reducing microaggressions, and in some cases, psychological distress (Richer & Workman-Stark, 2025). Through inclusive and transformational leadership practices, status hierarchies are disrupted, power is shared, and members from all backgrounds can contribute fully. By cultivating inclusive climates and cultures, leaders diminish the conditions that give rise to MCCs and foster organizational environments that promote learning, equity, and mutual respect.

Lastly, and perhaps most central to systems-level change, is the Hippocratic Oath. The Oath underpins the medical profession, emphasizing a physician's duty to act in the patient's best interest, exemplified by the principle "to help, or at least to do no harm" (Askitopoulou, 2024, p. 174). Although critical, this basic assumption, central to the field of medicine, has often overlooked the health and well-being of the healers themselves. As a result, physicians have put

their own needs, and often health aside in order to uphold this principle. Perhaps it is time to explicitly broaden the Hippocratic Oath's mandate to "do no harm" beyond patients to include physicians and other stakeholders in the medical system, allowing medicine to reorient itself toward honoring the humanity of its workforce alongside its patients. Doing so acknowledges that sustaining a healthy, diverse, and inclusive profession depends on cultural change that is as integral to medicine as patient care itself.

### **Limitations and Future Research Directions**

This study had a few limitations which are worth noting. This study utilized a cross-sectional, survey design, which enabled the identification of relationships between our variables of interest, but does not allow us to make causal claims. While experimental designs may not be feasible for studying constructs such as organizational culture, future research could employ longitudinal or multi-method approaches to better establish directionality and strengthen causal inferences.

Although the use of Centiment yielded a high-quality sample, which was diverse and fairly representative of the US physician population, it is worth noting participants self-selected and were compensated, which may have influenced their motivation and responses, thereby potentially limiting generalizability. In addition, a few sample-related constraints are worth noting. Certain specialties had very low representation, restricting our ability to explore differences across specialities. Moreover, variation in norms and practices across specialties, hospital types, and organizational contexts were not captured. These subcultural dynamics may meaningfully influence experiences of MCC and warrant deeper examination in future research. Existing research has shown that MCC is contextual and may be enacted in distinct ways across professions (Reid et al., 2018). For example, surgery and pediatrics may differ in the extent to which MCC

norms are experienced and enacted, potentially leading to different patterns of outcomes. Qualitative methods are particularly well-suited to examining how MCC is enacted, enforced, reinforced, and by whom, as demonstrated in recent research by Monton et al. (2024). Interviews with physicians could yield more nuanced insights into their daily lived experiences within MCC contexts. Moreover, because MCC workplaces are inherently hierarchical, expanding the scope to include other key constituents, such as nurses, residents, and even patients, would further enrich understanding of how MCC is perpetuated and confronted across the broader medical ecosystem.

Additionally, limitations in reported gender composition prevented meaningful analysis of this variable, despite its clear importance in understanding MCC. For example, although surgery is a specialty that is predominantly male-dominated, this was not reflected in participants' reports of perceived gender composition in our sample. Emerging evidence suggests that gender composition meaningfully influences how organizational cultures are experienced. Employees in gender-balanced workplaces report higher satisfaction and commitment than those in male- or female-dominated contexts, with men in particular showing lower well-being in male-dominated environments (Olafsdottir & Einarsdottir, 2024). Research with physicians similarly finds that women working in male-dominated units report greater gender harassment, discrimination, and reduced organizational support (Konrad et al., 2010). Cross-national and health-focused studies further demonstrate that skewed gender ratios exacerbate stereotyping, strain, and health risks (Clark et al., 2022; Jonsson et al., 2013; Elwér et al., 2014). Given that MCCs are especially prevalent in male-dominated fields (Berdahl et al., 2018) and disproportionately harm women through outcomes such as diminished well-being and self-group distancing (Veldman & Vial, 2025), skewed gender ratios may amplify MCC dynamics and backlash (Kuchynka et al., 2018). These findings underscore the need for future research to incorporate more robust and objective

indicators of gender composition and to examine how this factor conditions the enactment and consequences of MCC across medical specialties.

Given gender was a central focus of this study, we included items to capture data from physicians identifying as male, female, and non-binary. Unfortunately, only one non-binary physician participated in the study, requiring their exclusion from analyses due to insufficient sample size. This limitation reflects a broader challenge in both medicine and organizational research, the persistent underrepresentation of non-binary and gender-diverse individuals. Importantly, given that gay and lesbian physicians in our sample reported worse outcomes than their heterosexual counterparts, the lack of gender diverse representation is a critical gap. Future research should prioritize intentional recruitment and sampling strategies to ensure adequate representation of gender-diverse physicians, whose perspectives are likely to provide unique insights into how MCC may disproportionately affect them. Aligned with the call for more expansive gender representation future research should also more closely examine caregiving responsibilities. Our findings underscore the critical role caregiving plays in shaping physicians' experiences within MCC contexts. Closer attention to how caregiving responsibilities intersect with gender, gender composition, specialty, and other contextual variables would yield important insights into the dynamics of physician well-being and retention in medicine.

One final limitation is our exploratory analyses of coping, which relied on a shortened version of the Mini-COPE (Carver, 1997), with a single item representing each coping strategy. Single-item indicators may limit reliability and content validity, which constrains the interpretability and generalizability of our findings. Nonetheless, these preliminary results underscore the importance of examining coping in greater depth. Future research should utilize more comprehensive measures to capture both adaptive and maladaptive strategies and investigate

how these responses may reinforce or disrupt MCC norms. Longitudinal and mixed-methods designs, in particular, could clarify whether specific coping patterns serve as protective buffers against strain or, conversely, perpetuate harmful cultural dynamics.

Finally, future research would benefit from intervention studies. While emergent scholarship continues to document the prevalence and adverse outcomes of MCC across occupations, the field must move beyond this to begin to assess and develop strategies and solutions. Intervention studies at the organizational and policy level, such as leadership training, work-family integration supports, or culture audits, could demonstrate how raising awareness of MCC and implementing disruption strategies could improve physician well-being, retention and equity. This work is critical for addressing MCC and creating workplaces that are healthier and more inclusive.

## **Conclusion**

This study sought to advance understanding of the culture of medicine through the lens of MCC. Specifically, it examined the relationship between MCC and physician outcomes, including mental health, well-being, burnout, incivility, turnover intentions, satisfaction and performance. It also explored gender differences in experiences of MCC to highlight how the culture of medicine may disproportionately affect women physicians in distinct ways.

As hypothesized, higher levels of MCC were associated with adverse physician outcomes. MCC was associated with lower well-being, higher anxiety and depression, burnout, experiences of workplace incivility, and intentions to leave the profession. Gender emerged as a significant moderator, such that women physicians experienced more pronounced negative effects of MCC on well-being than men. While MCC did not directly predict career satisfaction or performance, its interaction with gender indicated that these outcomes negatively impacted women physicians,

but not men. Exploratory findings also revealed that MCC was positively related to turnover intentions among physicians with caregiving responsibilities, and to maladaptive coping strategies, particularly behavioral disengagement and self-blame, among women physicians.

Together, these findings suggest that the culture of medicine can be understood as a MCC, one that undermines physician well-being, equity and longevity in the profession. Accordingly, meaningful progress requires addressing the culture itself by challenging the historical structures and entrenched assumptions that continue to shape the medical profession today. Only then can we begin to foster healthier, more inclusive, and equitable environments within medicine. Healing this culture begins with centering physicians' humanity, ensuring that those who dedicate their lives to caring for others are, in turn, cared for by the systems they serve.

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# Appendix A

## Independent Variable

### **Masculinity Contest Culture (MCC)** (Glick et al. 2018)

Instructions: Please indicate how true each statement is of your work environment.

In my work environment...

#### Show No Weakness

1. Admitting you don't know the answer looks weak
2. Expressing any emotion other than anger or pride is seen as weak

#### Strength and Stamina

3. It's important to be in good physical shape to be respected
4. People who are physically smaller have to work harder to get respect

#### Put Work First

5. To succeed you can't let family interfere with work
6. Taking days off is frowned upon

#### Dog Eat Dog

7. You're either "in" or "you're out" and once you're out, you're out
8. If you don't stand up for yourself people will step on you

Five-Point Likert Scale: 1 = Not at all true of my work environment to 5 = Entirely true of my work environment

# Appendix B

## Dependent Variables

### **Mental Health – PHQ-4** (Kroenke et al., 2008)

Instructions: Over the last 2 weeks, how often have you been bothered by the following problems?

1. feeling nervous, anxious or on edge?
2. not being able to stop or control worrying?
3. little interest or pleasure in doing things
4. feeling down, depressed, or hopeless?

Four-Point Likert Scale: 0 = Not at all | 1 = Several days | 2 = More than half the days | 3 = Nearly every day

### **Well-Being – SF-36 Mental Health Subscale** (Stewart et al., 1988)

Instructions: During the past month, how often have you experienced the following?

1. I have been a very nervous person. (RS)
2. I have felt so down in the dumps that nothing could cheer me up. (RS)
3. I have felt calm and peaceful.
4. I have felt downhearted and blue. (RS)
5. I have been a happy person.

Six-Point Likert Scale: 1 = All of the time to 6 = None of the time

### **Incivility Experiences – Workplace Incivility Scale** (Cortina et al., 2011; Lim & Cortina et al., 2005)

Instructions: During the past year, were you ever in a situation in which any of your supervisors or co-workers:

1. Ignored or excluded you from professional camaraderie
2. Doubted your judgment on a matter over which you had responsibility
3. Addressed you in unprofessional terms, either publicly or privately
4. Paid little attention to your statement or showed little interest in your opinion
5. Made demeaning or derogatory remarks about you

Five-Point Likert Scale: 1 = Never to 5 = Very Often

### **Burnout – MBI-HSS (MP) Short Form** (West et al., 2012)

Instructions: How often do you feel the following?

Emotional Exhaustion (EE):

1. I feel emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel fatigued when I get up in the morning and have to face another day on the job.
4. I feel burned out from my work.
5. I feel like I'm at the end of my rope.

Depersonalization (DP):

6. I feel I treat some patients as if they were impersonal objects.
7. I've become more callous toward people since I took this job.

Personal Accomplishment (PA):

8. I deal very effectively with the problems of my patients.
9. I feel I'm positively influencing other people's lives through my work.

Six-Point Likert Scale: 0 = Never | 1 = A few times a year or less | 2 = Once a month or less | 3 = A few times a month | 4 = Once a week | 5 = A few times a week | 6 = Every day

**Turnover Intentions** (Munsch et al., 2018)

Instructions: Please indicate how strongly you agree or disagree with the following statements

1. "Taking everything into consideration, over the last year how often did you seriously consider quitting your current job"
2. "Taking everything into consideration, how likely is it that you will make a genuine effort to find a new job with another employer within the next year?"

Five Point Likert Scale: 1 = Very Unlikely to 5 = Very Likely

**Job Satisfaction** (Munsch et al., 2018)

Instructions: Please indicate your level of agreement or satisfaction.

1. "All in all, how satisfied are you with your current job?"

Five Point Likert Scale: 1= Very Dissatisfied to 5 Very Satisfied

2. "Knowing what you know now, how likely would you do this same job"
3. "How likely are you to recommend this job to someone else?"

Five Point Likert Scale: 1= Very Unlikely to 5 Very Likely

**Self-Rated Work Performance** (Glick et al., 2018)

Instructions: Over the past month, how often do the following apply to you?

1. "I am satisfied with my work performance"
2. "I am performing at work to my full potential"

Four-point Likert Scale: 1 = None of the time to 4 = All of the time

### **Brief Cope - Mini Cope** (Carver, 1997)

Instructions: The following items deal with ways you've been coping with a recent difficult or stressful work situations. Please indicate how often you've been doing each of the following things.

1. Self-Distraction – "I've been turning to work or other activities to take my mind off things."
2. Active Coping – "I've been concentrating my efforts on doing something about the situation I'm in."
3. Denial – "I've been saying to myself 'this isn't real.'"
4. Substance Use – "I've been using alcohol or other drugs to make myself feel better."
5. Use of Emotional Support – "I've been getting emotional support from others."
6. Use of Instrumental Support – "I've been getting help and advice from other people."
7. Behavioral Disengagement – "I've been giving up trying to deal with it."
8. Venting – "I've been saying things to let my unpleasant feelings escape."
9. Positive Reframing – "I've been trying to see it in a different light, to make it seem more positive."
10. Planning – "I've been trying to come up with a strategy about what to do."
11. Humor – "I've been making jokes about it."
12. Acceptance – "I've been learning to live with it."
13. Religion – "I've been trying to find comfort in my religion or spiritual beliefs."
14. Self-Blame – "I've been blaming myself for things that happened."

Four-Point Likert:

- 1 = I haven't been doing this at all
- 2 = I've been doing this a little bit
- 3 = I've been doing this a medium amount
- 4 = I've been doing this a lot

# Appendix C

## Demographic Questions

1. What is your gender?
  - Male
  - Female
  - Non-binary
  - Other (please specify): \_\_\_\_\_
  - Prefer not to say
  
2. What is your age?
  - 21-24
  - 25-34
  - 35-44
  - 45-54
  - 55-64
  - 65 or older
  - Prefer not to say
  
3. How would you describe your race/ethnicity? Select all that apply.
  - White or Caucasian
  - Black or African American
  - Asian
  - American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander
  - Hispanic or Latino/a/x
  - Biracial or Multiracial
  - Other (please specify): \_\_\_\_\_
  - Prefer not to say
  
4. What is your sexual orientation?
  - Straight
  - Gay or Lesbian
  - Bisexual
  - Other / Prefer to self-describe: \_\_\_\_\_
  
5. How many years have you been practicing medicine?
  - Less than 1 year
  - 1–5 years
  - 6–10 years
  - 11–15 years
  - More than 15 years

6. Are you the primary caregiver to any children or dependents?
- Yes
  - No
7. What is your current medical specialty? (Select one)
- Family Medicine
  - Internal Medicine
  - Emergency Medicine
  - Hospital Medicine
  - Pediatrics
  - Surgery (General or Subspecialty)
  - Psychiatry
  - Obstetrics & Gynecology
  - Anesthesiology
  - Radiology
  - Cardiology
  - Oncology
  - Pathology
  - Dermatology
  - Endocrinology
  - Otolaryngologist (ENT)
  - Neurology
  - Other (please specify): \_\_\_\_\_
10. Which of the following best describes the type of hospital where you primarily work?
- Academic or teaching hospital
  - Community hospital
  - Veterans Affairs (VA) or military hospital
  - Private hospital
  - Other or specialty hospital (please specify): \_\_\_\_\_
11. What best describes the gender make up for your physician colleagues that you interact with daily?
- Mostly men
  - Mostly women
  - Gender balanced

**Attention Checks**

- For this question, please select "Somewhat agree" to demonstrate that you are paying attention.

## Appendix D

### Demographic Crosstabulations

#### Gender x Caregiving Status

Gender	Non-Caregiver	Caregiver	Total
Male	43	83	126
Female	39	49	88
Total	82	132	214

#### Gender x Gender Composition

Gender	Gender Balanced	Mostly Men	Mostly Women	Total
Male	89	18	19	126
Female	48	27	13	88
Total	137	45	32	214

#### Gender x Sexual Orientation

Gender	Heterosexual	Gay and Lesbian	Bisexual	Total
Male	119	6	1	126
Female	78	4	6	88
Total	197	10	7	214

#### Age x Caregiver Status

Age Group	Non-Caregiver	Caregiver	Total
25–34	43	39	82
35–44	14	60	74
45–54	11	25	36
55–64	10	8	18
65+	5	0	5
Total	83	132	215

## Gender x Specialty

Specialty	Men	Women	Total
Hospital Medicine	27	14	41
Family Medicine	19	19	38
Internal Medicine	19	14	33
Pediatrics	11	9	20
Emergency Medicine	14	5	19
Surgery (General or Subspecialty)	10	6	16
Psychiatry	5	6	11
Obstetrics & Gynecology	4	5	9
Oncology	1	4	5
Radiology	4	1	5
ENT	3	1	4
Anesthesiology	3	1	4
Dermatology	2	1	3
Cardiology	1	1	2
Endocrinology	1	0	1
Neurology	1	0	1
Pathology	0	1	1
Anesthesia	1	0	1
Total	126	88	214

## Specialty x Gender Composition

Specialty	Gender Balanced	Mostly Men	Mostly Women	Total
Hospital Medicine	29	5	7	41
Family Medicine	26	8	4	38
Internal Medicine	25	6	2	33
Pediatrics	7	3	10	20
Emergency Medicine	14	5	0	19
Surgery (General or Subspecialty)	9	6	1	16
Psychiatry	7	2	3	12
Obstetrics & Gynecology	5	1	3	9
Oncology	3	2	0	5
Radiology	3	2	0	5
ENT	4	0	0	4
Anesthesiology	2	2	0	4

<b>Specialty</b>	<b>Gender Balanced</b>	<b>Mostly Men</b>	<b>Mostly Women</b>	<b>Total</b>
Dermatology	1	0	2	3
Cardiology	1	1	0	2
Anesthesia	0	1	0	1
Endocrinology	1	0	0	1
Neurology	0	1	0	1
Pathology	1	0	0	1
<b>Total</b>	<b>138</b>	<b>45</b>	<b>32</b>	<b>215</b>