

**Mindful Medicine for Physician Women:
A Mindfulness Based Intervention
for Equity, Healing, and Care**

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MINDFUL MEDICINE FOR PHYSICIAN WOMEN

Abstract

COVID-19 has laid bare the gross disparities within the American health care system for both patients and medical professionals. As awareness of physician's risks to personal health and safety continue, the systemic disproportionate inequities imposed on women doctors, especially those who are mothers, are gaining critical attention.

This paper has three intentions to: 1) draw attention to the discrimination experienced by female physicians, especially within the context of COVID-19; 2) review a brief mindfulness-based intervention (MBI) pilot designed for women physicians to increase resilience and support collective agency; 3) present recommendations for future research and change in medical administrative policy for women physicians.

The on-line pilot, *Mindful Medicine for Physician Women* (MMPW) was delivered in three one-hour sessions over three weeks to 15 physician women, 10 of whom are mothers. The brief adaptation integrates practices from the Mindfulness Based Stress Reduction (MBSR) and Mindful Self Compassion (MSC) courses.

Pre and post measurements from two validated instruments, *The Brief Resilience Scale* (BRS) and *The Self-Compassion Scale* (SCS) showed statistically significant improvements ($p < .05$) in both Resilience and Self Compassion.

Keywords: Women Physicians, Physician Mothers, Resilience, Brief Mindfulness Based Interventions

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Mindful Medicine for Physician Women: A Mindfulness Based Intervention for Equity, Healing, and Care

Twenty years ago a study set off an alarm in medicine when findings revealed that white male doctors face a 70% higher suicide rate than other professionals in the United States (Frank et al., 2000). What this study failed to reveal was the even more alarming suicide rate in women physicians, 250% higher than the general population (Chesak et al., 2020; Templeton et al., 2019). Additionally, compared to other female professionals, the suicide risk for women physicians is 4.5 times higher - quadruple the rate for men (Schernhammer & Colditz, 2004).

Since the COVID-19 pandemic, physicians are experiencing significant increases in anxiety, depression, burnout, addiction, and post-traumatic stress disorder (El-Hage et al., 2020). These mental health issues are disproportionately experienced by women physicians, especially for those parenting children (Jones et al., 2020). Women doctors are more likely to hold clinical frontline positions, assume most household responsibilities, and contend with inflexible workplace expectations (Burden et al., 2015; Rouse et al., 2020). Their schedules do not accommodate pandemic-related limits on childcare options and expanded parental responsibilities imposed by school closures and remote learning.

Today, females comprise half the physician workforce. What is more, their contributions as women serve unique benefits to patients and larger healthcare systems. These include specialty choices in primary care, better patient outcomes, lower litigation risk, and patient retention in managed care plans (Bertakis & Azari, 2012; Henderson & Weisman, 2001). As COVID-19 threatens to escalate physician shortages, the need for retaining women in the medical workforce is imperative.

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Individual resilience training and systemic policy change are critical to effective recruitment and retention planning.

A dualistic view of burnout prevention holds healthcare policy makers accountable for redressing workplace inequities. On the other hand, health care systems place the burden of change on individual workers, offering them self-care focused wellness programs without addressing systemic disparities. The Mindfulness Based Intervention (MBI) pilot in this study aims to simultaneously address individual burnout prevention while confronting systemic policies of harm.

Concerns about the commodification of mindfulness into widespread secular adaptations, within both self-help and professional therapeutic arenas, have been increasingly voiced by social change advocates, as well as Buddhist scholars and teachers (Kabat-Zinn, 2017). Critics view secular mindfulness training as a vehicle for spiritual bypass – the fostering of a false refuge from the reality of personal and societal harm. In this view, mindfulness skills training for healthcare providers is seen as a palliative, at best, and an obfuscation of harm caused by systemic, institutionalized policies at worst.

Palliative or not, years of increasingly robust evidence support the impressive effectiveness of mindfulness-based Interventions (MBI) for physicians and other healthcare providers. Results from mindfulness training show measurable reductions in physician burnout, increases in job satisfaction, perceptions of personal well-being, and resilience to workplace stress (de Vibe et al., 2018; Gilmartin et al., H., 2017; Irving et al., 2009; Kemper, 2017; Mackenzie et al., 2006; Schroeder et al., 2018).

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COVID-19 – Turns Up the Heat on Physician Burnout, Especially for Women

The COVID-19 pandemic has now amplified long standing pressures on doctors that include overburdened schedules, decreased autonomy, and demands on productivity. Meanwhile, adding to these assaults pandemic-specific challenges include inadequate Personal Protective Equipment (PPE), anxiety about personal exposure infecting family members, chronic moral and ethical conflict along with increases in patient loss, and longer clinical shifts. For parents, these additional stressors at the work front are layered on to those at the home front resulting from school closures and vastly diminished childcare options.

As the COVID-19 pandemic approaches its ninth month, doctors continue to face the same issues they experienced from the start. Results from an October 2020 Medscape Survey of almost 7500 physicians, found that 64% of US physicians report experiencing a deepening of intense burnout, and 46% report experiencing the add on stress of loneliness and isolation. Lack of PPE continues to be one of the most significant contributors to stress and burnout (Kane, 2020).

According to the Medscape survey, fears about personal exposure to COVID are superseded by concern about infecting family members – especially true for the women physicians caring for children and/or elderly relatives (Kane, 2020). Overworked and fatigued, doctors are contending with a current resurgence of infected patients further elevating risk to themselves and their future in medicine (Rubin, 2020). This added to long standing workplace inequities, puts female physician health and their capacity to sustain their medical career at even further risk than their male peers (Hardy et al., 2020; Jones et al., 2020).

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The high cost of physician burnout is far from limited to the individual sufferers and their families. Medical systems experience substantial financial loss due to burnout in the form of physician error and costly litigation, physician turnover, and decreased productivity due to reduced clinic hours. Current estimates put the figure at 4.6 billion dollars annually (Dyrbye et al., 2019).

Women Physician Recruitment and Retention Risk

Prior to COVID-19 physician shortages were already being felt nationwide. Population growth, an aging demographic, and increased access to health care through the Affordable Care Act (ACA) all challenge medicine's capacity to meet current and future expected demand (Cooper et al., 2002; Doescher et al., 2000; Kirch & Petelle, 2017; Petterson et al., 2012). According to data published June 26, 2020 by the Association of American Medical Colleges (AAMC), primary care physician shortages are estimated to be as high as 55,200 by 2033. Those figures are encompassed within data predictions of an overall shortfall between 54,100 and 139,000 of all physicians (primary and specialty) (Kerschner, 2019; Zhang et al., 2020). The fact that half the physician workforce is comprised of women and that they hold a dominant presence in primary care specialties underscores the importance of recruiting and retaining them in medicine (Kletke et al., 1990; Ku, 2011; Xierali et al., 2012).

Equally germane to the recruitment and retention of women doctors is consideration of why women are concentrated in specialties that hold less prestige and pay less, e.g. pediatrics and family practice (Kletke et al., 1990; Ku, 2011). Some studies suggest an individually focused explanation for this, citing the internalized gender-socialization of women. In this view, women absorb and align with societal

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values that associate female identity with care giving roles and greater capacity for compassion than men (Glick & Fiske, 1999; Ridgeway & Correll, 2004; Rudman & Glick, 2001). Findings from this research suggest that women tend toward careers with high intrinsic reward offered by service-oriented jobs, e.g. helping others, while men prefer jobs that emphasize leadership and high extrinsic rewards, e.g. prestige and income (Perrone et al., 2009). In accordance with this view, women physicians “prefer” people oriented specialties, such as pediatrics, family practice, and obstetrics-gynecology, while men gravitate toward the “higher tech” fields of surgical specialties, radiology, and pathology (Santos et al., 2016).

In Ku’s 2011 investigation of gender difference in physician specialty choice, she questions the above perspective and brings to light systemic factors influencing women’s specialty choices (Ku, 2011). Her work cites specific systemic barriers imposed on women, especially mothers, who are raising a family and carrying most of the weight of household responsibility (Altieri et al., 2019; Fetterolf & Rudman, 2014; Hariton et al., 2018; Umstattd, 2020; Worthington et al., 2019). When forming career preferences, family and domestic considerations are more present for women than men medical students and residents (Ku, 2011). Though gender gaps in professional employment are narrowing, cultural expectations still assign the majority of housework and childcare to women (Fetterolf & Rudman, 2014). Even among dual-earner heterosexual couples, women continue to shoulder most of the domestic responsibilities (Cerrato & Cifre, 2018; Peterson & Gerson, 1992). It has also been found that women in heterosexual couples tend to prioritize their partners’/husbands’ careers in making employment choices (Giménez-Nadal et al., 2019; Pixley & Moen, 2003; Sperandio &

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Devdas, 2015). The absence of policies to adequately support parents with young children, are found to present a disproportionate disincentive for female physicians to choose specialties requiring additional intensive training and workload, such as cardiology and radiology. In light of expected demand, these specialties lose their appeal especially for mothers (Hardy et al., 2020; Khan et al., 2020).

Alternatively, the COVID-19 pandemic may present a different form of threat to physician retention, particularly for parents. Academic and furloughed doctors are finding they have more time at home with their families. Academic travel is significantly curtailed and replaced by teleconferencing. Clinicians not in the frontlines are furloughed or are finding their clinical workload reduced. Telehealth options have grown exponentially allowing doctors to practice remotely from their homes. With childcare options severely limited and schools indefinitely transformed into remote education platforms, the need for parental presence in the home is substantially increased. Physicians formerly bound to long clinic days followed by afterwork hours of charting during family time are seeing a positive shift in work-family balance. Work satisfaction, a strong correlate with resilience, could decrease for physicians returning to former work schedules after appreciating more time with children and family (Mangiavacchi et al., 2020; Shanafelt et al., 2014; Szender et al., 2015).

COVID-19 and the Female Medical Student Experience

The impact of COVID-19 is felt by medical students in unique ways as they simultaneously function in the role of learner and provider. In a recent study, researchers investigated the difference in mental health effects on trainees exposed to patients being tested for COVID-19. Comparative measures were made between those

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students exposed to patients being tested for COVID-19 and those not exposed to tested patients. Levels for depression, anxiety, stress, burnout, and professional fulfillment were evaluated for 393 students. Perceived life stressors such as, childcare, home schooling, personal finances and work-life balance were also measured in both groups.

The exposed group had elevated measures in stress (29.4% vs. 18.9%) and were more likely to experience burnout (46.3% vs. 33.7%). Most notably, female students bearing childcare responsibilities measured highest in all categories and reported the lowest measures for work-family balance (Kannampallil et al., 2020). Another recent COVID-19 study showed significantly elevated levels of anxiety and depression in medical students compared to pre-pandemic measures. Consistent with a growing body of research, results are finding elevated symptoms for depression and anxiety in medical students and these are most severe for women (Sartorao Filho et al., 2020).

The preponderance of research on student stress and burnout in medical education does not differentiate by gender. One area of research, however, has uncovered an important and pervasive barrier to education success, particularly for females. Imposter Syndrome (IS) was the strongest predictor of general psychological distress in a study of medical, dental, nursing, and pharmacy students, 30% of whom scored as impostors (Followell, 2011; Oriel et al., 2004). Women experience the highest levels of IS, double that of their male peers (Legassie et al., 2008). Characterized by chronic feelings of self-doubt and fear of being discovered as an intellectual fraud, IS

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prevents the sufferer from acknowledging personal accomplishment, competence, or skill without minimizing its worth or negating its value entirely (Chandra et al., 2019).

Findings indicate IS sufferers are less likely to speak up or volunteer answers and information than their non-IS effected peers. Within the context of a highly competitive and often shaming style of pedagogy, IS can impose significant limitations to important facets of learning through dialog and verbal exchange with teachers and peers.

The disproportionate number of women experiencing IS and the fact that they comprise half of medical school classes is likely to have far reaching impacts on the recruitment and retention of women in medicine. Cited as a causative factor in the lack of women in senior healthcare leadership positions, IS prompted the Health and Care Women Leaders Network to hold a “tweetchat” on the subject in March 2018 (Grossman, 2020). The prevalence of IS makes a compelling argument for shifting the historically rigid and marginalizing paradigm of medical education (Grossman, 2020).

COVID-19 Adds to Disproportionate Stress for Women Residents

Residency is a time of intense challenge, long hours, and unpredictable schedules. Under the siege of COVID-19, residents must contend with significant transformations in medical education delivery, patient care experience, and networking opportunities that once supported career decisions and specialty choices. A survey administered in 2020 used GAD (General Anxiety Disorder) scores to measure changes in surgical residents since the pandemic. Findings indicate an overall significant rise in anxiety levels ranging from moderate to severe (Collins et al., 2020). Regarding personal health risk, most residents, especially first year students, reported more

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concern about infecting loved ones rather than their own risk of contracting COVID-19 (Collins et al., 2020). Although senior residents face more exposure risk to COVID-19 than newer residents, 90% reported more concern regarding disruptions in the progress of their medical education due to a decline in general surgical cases since COVID-19 (Collins et al., 2020).

Graduate medical education restrictions on extramural rotations due to COVID-19 may disproportionately disadvantage women and other residents and fellows who rely on these experiences for specialty or subspecialty exposure, letters of recommendation, and networking with potential sponsors (Jones et al., 2020). Prior to COVID-19, recruitment experiences for women relied heavily on meeting women faculty and potential mentors, hearing women fellows' and faculty's experiences with pregnancy and early motherhood, learning about program culture toward women (Jones et al., 2020; Khan et al., 2020). These avenues are no longer easily accessed in person and are not well replicated on virtual platforms.

In a large survey of U.S. medical residents, having a role model was one of the most highly rated professional development needs identified, and was cited as especially important to women pursuing careers in traditionally male dominant specialties such as cardiology (Accreditation Council for Graduate Medical Education, 2014). Networking and mentoring opportunities were also found to be critical components in the successful recruitment and integration of women into male-dominant specialties. Since the pandemic, in-person affinity group gatherings and professional meetings have either been eliminated or have shifted to on-line platforms. The technical

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nature of virtual gatherings tends to diminish the spontaneity of informal conversations that enhance professional networking in face-to-face settings.

Starting in residency, women and especially mothers, bear what some refer to as a triple whammy of interpersonal and structural discrimination, rigid work expectations, and high debt (Hardy et al., 2020). Their advanced education and professional status does not protect women physicians from the same inequities that impact most working mothers in the United States (Hardy et al., 2020). In residency, the peak childbearing time, women are expected to meet the same arduous demands as their male peers, more often than not without the support of a full-time “at-home” parent.

Residency typically requires a full 10+ hour day of clinical work, lecture attendance, and intense home study. Additional hours are spent adjusting to newly assigned workplaces requiring them to meet practice-defined metrics, navigate a new health care system, contend with the electronic medical record, and learn the referral patterns unique to their resident setting. These demands disproportionately impact mothers of young children (Hardy et al., 2020). Support for young parents is an essential ingredient for physician retention considering that 40% of medical students start families during residency (Worthington et al., 2019). Despite the obvious need, there is little or no support for work conflicts related to pregnancy, family leave, and returning to work (Worthington et al., 2019; Gottenborg et al., 2018). Maternity leave is inadequate or nonexistent (Juengst et al., 2019), lactation support varies (Cantu et al., 2018; Melnitchouk et al., 2018; Miller et al., 1996), absence of childcare, and inflexible shift schedules all mount up to an especially heavy burden on resident and physician mothers (Scully et al., 2017).

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Administrative policies place the responsibility for maternal and family related stress squarely on the shoulders of the individual physician, and most often this is borne by mothers (Adesoye et al., 2017). Doctor mothers are expected to find their own solutions to inadequate paid leave, no lactation accommodation at work, no childcare, and schedule inflexibility (Juengst et al., 2019; Shrier et al., 2007).

COVID-19 – Further Undermining Academic Career Advancement for Women

Hallmarks of career advancement in medicine are the assumption of leadership roles and the regular publication of research. The intense workload of academic practice presents a clear disincentive to any physician putting family time first but is especially true for physician mothers (Fetterolf & Rudman, 2014; Giménez-Nadal et al., 2019; Lyttelton et al., 2020). Women's underrepresentation in both leadership positions and authorship is clearly evidenced when only 22% of women physicians are full professors, 18% hold department chairs, and only 17% of medical school deans are women (Lewiss et al., 2020). Although women's numbers are equal to men in the physician workforce they are bumping their heads against glass ceilings.

Fallout from COVID-19 is adding substantial new barriers for women in mid-career advancement. Since the first months of the pandemic most academic, industry, government basic science, and clinical research has been redirected to COVID-19 (Weiner et al., 2020). The focus of clinical trials is now limited to testing life-saving therapies. Most other trials have been put on pause and continuing trials have been closed to new enrollment (Weiner et al., 2020). In addition to research disruptions impinging on the careers of physician-scientists, many have also been required to shift efforts from research and into direct patient care.

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Unsurprisingly, early data reveals a particularly precipitous drop in scholarly work among women since the pandemic (Madsen et al., 2020). Pre-Post pandemic analysis indicate a strong correlation between the reduction in first authorships and reduced options for child-care along with increased frontline demands both at work and at home (Bennett et al., 2019; Madsen et al., 2020).

Women in the United States continue to be the primary caregivers and the parent who supervises children's homework, arranges family activity schedules, plans/prepares meals, and assumes most domestic chores (Jolly et al., 2014; Shah et al., 2018; Wiler et al., 2019). Without institutional policies to support balancing financial and familial pressures, having children significantly obstructs women's career progress in medical academia (Hardy et al., 2020). The COVID-19 pandemic further amplifies the pre-existing discrimination against women and working mothers.

A June 2020 report in The New York Times showed that women in the general population, especially mothers are being edged out of their careers as childcare options diminish and schools transform to on-line remote learning platforms requiring adult support, especially in the early grades (Heggeness, 2020). Women medical researchers are no exception to these pressures which amplify the already entrenched constraints. Consistent with research on women in the general population, current data indicates that females in academic medicine shoulder more of the burden of domestic labor within their households than do men. One study of an elite sample of NIH-funded physician-researchers showed that women spent 8.5 hours more per week on parenting and domestic tasks than their male peers (Jolly, 2014). Research shows a similar imbalance is true even in dual-career academic couples (Derrick et al., 2019). The

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decrease in women authorships since COVID-19 is likely due to pressures compounded by imbalances in domestic responsibilities and disproportionately impacting women academics (Viglione, 2020).

Women pursuing advancement are often met with other barriers including stereotyping. Viewing women as best suited to the “soft skills” category of teachers and mentors, fuels the systemic factors discouraging women from pursuing the “hard skills” category of researchers (Hardy et al., 2020; Wong, 2020). Women are disproportionately represented on clinician-educator tracks, for example. Time-intensive teaching and mentoring responsibilities, especially with increased use of virtual platforms since COVID-19, reduce women’s availability for conducting research and assuming roles in clinical operations (Andersen et al., 2020; Mayer, 2014). The time consuming tasks associated with education tracks are found to significantly limit women physicians’ capacity to pursue the kinds of professional roles deemed essential to obtaining senior leadership appointments (Hardy et al., 2020). The absence of women in leadership all but ensures the continuation of inequities and institutional barriers to career advancement for physician women, especially mothers.

COVID-19 Amplifies Disproportionate Financial Barriers for Women Physicians

The underrepresentation of women in academia and the more highly compensated specialty practices, combined with overall salary disparities adds to a disproportionate financial burden placed on women physicians (Hannawi & Al Salmi, 2018; Lo Sasso et al., 2011). This becomes especially problematic as women begin education loan repayment. There exists a 39% difference in salaries between male and female doctors even after accounting for specialty, work-home balance, work hours, and

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call duty (Hardy et al., 2020). In 2016, the average physician debt at graduation was \$251,600, roughly compounding to \$526,434 to \$696,654 at payback (Apaydin et al., 2018; Butkus et al., 2018; Lo Sasso et al., 2011; Lo Sasso et al., 2020).

Loan repayment typically occurs at a time when costs for childcare and raising a family also begin. Unlike men, career track and specialty choices made by women physicians are frequently linked to these concerns. The combination of high debt, salary disparity, workload and family planning are drivers that are more present for women physicians than men when making career decisions (Durán et al., 2006). Results from these compromises are strong contributing factors in female doctor work dissatisfaction and burnout (Spickard Jr et al., 2002; West et al., 2018).

Women also cite these factors for choosing less expensive and more flexible careers in medicine, such as physician assistant, adding to the growing shortage of physicians nationwide (Biscardi et al., 2013; Bourne et al., 2012; Cooper et al., 2002; (Kimball & Resneck Jr, 2008). The impact of debt, salary disparities, and barriers to career advancement are equally pertinent to gay, straight, bisexual, and transgender women. Same sex female physician couples face the double impact of these negative forces. More studies are needed, but gender minority discrimination and harassment for these groups is a likely contributor to their isolation, burnout, and subsequent career termination.

In addition to institutionalized forms of discrimination women physicians also face disproportionate impacts of direct and indirect interpersonal aggression (Frank et al., 1998). In a recent survey of 1,065 physicians, women were more likely to report being humiliated or ridiculed in connection with their work, to have their opinions ignored, to

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be excluded from conversations, to have information withheld that affects their performance, to have their good work persistently unrecognized, to have someone else taking credit for their work, and to be given unmanageable workloads (Cohen et al., 2008; Vargas et al., 2020; Wong, 2020).

Physician Shortages and the Risk of Losing the Unique Contributions of Women Physicians

The Physician Work Life Study, a nationally representative random stratified sample of 5,704 physicians (32% women) in primary and specialty nonsurgical care revealed important differences between men and women physician patient care. Practice style, time spent with patients, communication differences, type of patients drawn to female doctors, are among these and are shown to positively benefit patient health outcomes, and managed care enrollment status (Linzer et al., 2000). The findings make a compelling argument to address gender disparities in order to ensure recruitment and retention of women physicians.

The Affordable Care Act (ACA) prompted several trends in medical practice that represent specialties favored by women. These include an increased need for primary care physicians, integrative medical clinics, and an increased focus on prevention education and screenings (Fazeli Dehkordy et al., 2019; Fortune, 2016; McMurray et al., 2000). These trends are expected to continue and even expand as more underserved people are enrolled in health insurance plans.

As noted earlier, women physicians are more likely to choose a practice in primary care settings. Studies show they also pay more attention to preventive services, health education counseling, and the psychosocial needs of patients (Delgado et al.,

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1993; Kreuter et al., 1995; Lurie et al., 1997; McMurray et al., 2000). Communication styles, compared to those of men in the study, were cited as factors contributing to better patient compliance and better health outcomes for patients of women doctors. The study analysis showed that women physicians spend more time with their patients, make more eye contact, smile more often, and ask more questions compared to their male colleagues. Patients also asked more questions of their female doctors than they did of their male doctors (Hall et al., 1994). Patients of female doctors were less likely to disenroll from managed care plans (Weissman & Teitelbaum, 1987) and women doctors have fewer incidents of malpractice litigation (Taragin et al., 1992).

Other findings show that female patients prefer female physicians for their care, (Kerssens et al., 1997; Thorne, 1994) and these women patients are more likely than male patients to have depression and complex psychosocial issues requiring additional attention to their medical needs (Linzer et al., 1996). Perhaps this accounts for the extra time women doctors spend with patients.

Burnout for women physicians is more likely to be rooted in a lack of workplace control in comparison to men (Rizvi et al., 2012). Important to physician retention, it has been found that women doctors reduce their odds of burnout by 40% when they have the support of colleagues, a spouse or a significant other in helping balance work and home responsibilities.

Three Proven Strategies for Burnout Prevention and Mitigation

Mindfulness Training Mitigates Physician Burnout

The causal factors of physician burnout are rooted in the culture of medical practice which itself is deeply embedded in the larger social and economic structure

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based on profit. The MMPW pilot in this study includes acknowledgment of the external causative factors of burnout while also providing accessible skills to mitigate them both in day-to-day practices and at systemic levels.

Time limitations imposed on physician schedules can present barriers to participation in traditional six and eight-week MBI courses, i.e. Mindfulness Based Stress Reduction (MBSR) (Irving et al., 2009), and Mindful Self Compassion (MSC) (Neff & Dahm, 2015). Even before the pandemic, the appeal for abridged on-line MBIs had been gaining attention (Economides et al., 2018; Glück & Maercker, 2011; Mrazek et al., 2019). Positive results from brief MBIs have proven comparable to longer course outcomes and are particularly effective when mindfulness is combined with training in self-compassion (Burgess et al., 2017; Scarlet et al., 2017; Sinclair et al., 2017; Seppala et al., 2014). Results from MBIs integrating both mindfulness and compassion are particularly effective for mitigating such factors as burnout, stress, anxiety, guilt, secondary trauma and compassion fatigue (Conversano et al., 2020; Duarte & Pinto-Gouveia, 2017; Follette et al., 2015; Germer & Neff, 2015; Raab, 2014; Thieleman & Cacciatore, 2014; Wong, 2020).

This is particularly relevant in consideration of the traumatizing impact of COVID-19 on health care workers. A cross-sectional analysis between May and June 2020, analyzed 140 health care workers during the outbreak between May and June 2020. Among these 41.3% had symptoms for secondary traumatic stress, 56% for emotional exhaustion 56.0%, and 48.9% for depersonalization (Marzetti et al., 2020). The prevalence of secondary traumatic stress in the frontlines was highest at 47.5%

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compared to those working in other units (30.3%). Unsurprisingly, secondary traumatic stress was even higher (67.1%) for those exposed to patient deaths (Marzetti, 2020).

Self-Compassion Mitigates Physician Burnout

The values of service, excellence, curative competence, and compassion are interconnected and implicit in medical culture. They also contribute to burnout factors of perfectionism, self-blame, and imposter syndrome. Mindfulness and self-compassion offer skills for 1) acknowledging suffering rather than avoiding its presence; 2) training to effectively increase distress tolerance and equanimity in response to stress; 3) recognizing and interrupting harmful self-referential cognitive loops of self-blame and perfectionism. Mindfulness and self-compassion training, reframes perception appraisal of difficulties as personal faults, expanding this constricted, narrow view into a broader perspective, thereby decreasing tendencies of globalized over-personalization of perceived faults (Neff & Dahm, 2015).

In a 2019 pre-pandemic study of clinicians who face frequent uncertainties and challenges in their clinical practice, the relationship between self-compassion and professional wellbeing as measured by self-report on work engagement, exhaustion, and professional life satisfaction was examined. Fifty-seven physicians participated, 65% of whom were women family medicine practitioners in their early-career stage of practice. Results indicated that self-compassionate physicians experienced more positive work engagement, felt less emotionally, physically, and cognitively exhausted due to work demands, and were more satisfied with their professional life than physicians who exhibited less compassion toward themselves in uncertain and challenging times (Babenko et al., 2019).

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Self-efficacy is also found to increase with self-compassion training, an important factor in mitigating the negative impact of imposter syndrome described earlier (Babenko, 2019; Iskender, 2009). People with higher levels of self-compassion are less critical of themselves and less likely to be anxious or depressed and report greater life satisfaction (Neff et al., 2007; Neff & Dahm, 2015). Self-compassion training also increases the capacity to dwell less on hardships and obstacles while increasing awareness of the positive aspects of difficulties (Kemper et al., 2019).

Peer Support Mitigates Burnout and Fosters Collective Agency

Facilitated colleague support groups are also shown to be a viable, low-cost, preventive intervention to mitigate burnout and distress for mothers in high-stress professional settings such as hospitals. Results show increases in personal benefit, greater engagement at work, and attenuated stress associated with parenting (Luthar et al., 2017). Peer support is equally effective in clinical and academic medicine, especially for women (Gunasingam et al., 2015). At the systemic level, evidence supports peer support as an effective strategy for creating policy change, interrupting structural and systemic harm, and promoting change at administrative, institutional levels (Armenakis et al., 1993; Hu et al., 2012; Moore et al., 2020; Shapiro & Galowitz, 2016). Lack of workplace control is strongly linked to burnout for women physicians and effectively addressed through peer support groups (Dyrbye et al., 2020; Shanafelt et al., 2017). An important component of MMPW peer discussions included prompts that suggested actions proven to support organizational change in their clinical departments and larger systems (Boyle, 2016; Buchanan et al., 2007; Chreim et al., 2010).

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Method

Participant Recruitment

A total of 15 actively practicing physician women participated in the pilot study. They were recruited from an informal Face Book physician mothers' group and email outreach to 300 medical providers throughout Portland who participated in mindfulness trainings offered by Mindful Medicine, an independent non-profit organization for professional healthcare providers. Inclusion criteria were a) female identified; b) employment in direct patient care; c) licensed MD or DO.

Procedures and Participant Demographic

Recruitment and data collection occurred between May and August 2020. Baseline assessments were delivered and completed via email in conjunction with registration forms. A total of 15 physicians registered for the course and 10 attended all three sessions and completed both pre- and post-test measurements.

The average age of participants was 45, the youngest being 33 and the oldest 54. Ten of the participants were currently parenting children ranging in age from 15 months to 18 years old. Two physicians were breastfeeding. Practice specialties included pediatrics (3), family medicine (4), obstetrics/gynecology (1), breast surgery (1), neurodevelopmental disability (1). Participant ethnicities included Caucasian (7), Mexican (1), Taiwanese (1), Caucasian/Japanese (1).

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Intervention

The MMPW intervention was a modified adaptation of MBSR and MSC with added elements of brief mindfulness skills for use at work and home. These elements included: Appreciative inquiry – a practice of identifying positive elements in negative patient encounters (Krasner & Epstein, 2010; Shanafelt, 2009); GRACE – an acronym for a brief mindful grounding practice (Gather, Remember, Attune, Compassion, Engage) (Halifax, 2014); and peer sharing in the Healing Circle style of uninterrupted one-at-time individual responding to a prompt offered by the group facilitator (Mehl-Madrona & Mainguy, 2014).

The three one-hour classes introduced mindfulness in relation to medical practice, emphasizing the integration of mindfulness and self-compassion into professional and personal relationships. The facilitator has extensive training and experience teaching several MBI curricula including MBSR and MSC to medical professionals. Following the end of the three-week series participants were invited to continue attending weekly groups on a drop-in basis.

The MMPW three sessions followed the framework outlined by the Zen Peacemakers as articulated by Roshi Bernie Glassman (Glassman, 1996) and included experiential practice, peer support in small and large groups, and brief didactic elements on internal and external causative factors of stress and burnout. Section One - *Not Knowing*, introduced concepts of attunement to mind-body-emotion awareness; the influence of personal perception appraisal in response to factors outside the control of participants, i.e. societal, institutional, and systemic contributors to burnout in women physicians. Section Two - *Bearing Witness* introduced practices for self-regulation, i.e.

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breath and body awareness practices from MBSR (Irving et al., 2009), self-compassion practices from MSC (Neff & Dahm, 2015); and the GRACE model as developed by Roshi Joan Halifax (Halifax, 2014). Section Three - *Compassionate Action* introduced the concept of Appreciative Inquiry and peer support as developed by Krasner and Epstein (Krasner et al., 2009) as well as factors associated with moral injury and moral resilience in medical practice (Rushton, 2017). Participants created phone reminders of three mindfulness and self-compassion practices they identified as most likely to use and three intentional actions they will take to support their personal resilience at work and home.

Joanna Macy's 4-part Spiral in *The Work that Reconnects* (Macy & Brown, 2014) informed the progression of instruction. The instructional elements were presented in a pattern of acknowledgment of gratitude for what is present, grief for what has been lost, seeing with new eyes for new possibilities, and transforming despair/powerlessness through skillful action.

Measures

The Brief Resilience Scale (BRS) is a 6-item measure designed to assess the ability to bounce back or recover from stress (Smith et al., 2008). Items are rated on a 5-point Likert-type scale with higher scores indicating greater resilience. The BRS has good internal consistency, a single factor structure, and demonstrated expected correlations with a variety of constructs including perceived stress.

The Self-Compassion Scale (SCS; Neff, 2003a) is the most widely used measure of self-compassion. Self-compassion, as measured by the SCS, is robustly linked to psychological health (Macbeth & Gumley, 2012; Zessin et al., 2015). The SCS is

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currently understood as exhibiting a higher-order structure comprised of 6 first-order factors – self-kindness, self-judgment, mindfulness, common humanity, isolation, over-identification and one second-order overall self-compassion factor.

Data Analysis and Results

In comparison to baseline measurements, there were statistically significant improvements on four measured factors: Resilience, Self-Judgment, Self-Kindness and Mindfulness. Two additional factors trending toward significance were Overall Self-Compassion and Over-Identification - defined as a tendency to negatively exaggerate and over personalize a perceived failure.

The following table outlines pre and post measurement results for the 10 participants completing the course.

Table 1. Pre and post course Self-Compassion and Resilience scores

	Pre	Post			
	Mean (SD)		df	t	p
Self-Compassion Sum Score	3.09 (.56)	3.58 (.80)	8	-2.187	.06
Self Kindness*	2.93 (.75)	3.67 (.67)	8	-2.257	.05
Self Judgement*	3.04 (.75)	2.38 (.71)	8	2.425	.04
Common Humanity	3.25 (.71)	3.58 (.96)	8	-1.120	.30
Isolation	2.72 (.95)	2.39 (1.29)	8	1.333	.22
Mindfulness*	3.53 (.49)	3.97 (.83)	7	-2.411	.05
Over Identification	3.82 (.77)	3.04 (.91)	6	2.354	.06
Resilience*	15.88 (5.08)	19.63 (4.27)	7	-3.319	.01

*Statistically significant difference

Discussion

Results demonstrate that MMPW was effective in improving resilience, as well as three self-compassion sub-scales: mindfulness, self-kindness and self-judgment. Worth noting for the relative small sample and brevity of the intervention are two additional measures trending toward significance at $p < .06$: over-all self-compassion and over-identification. The intervention occurred three months into the COVID-19 pandemic, an increasingly stressful time for all participants at work and home. Due to inadequate PPE, mothers were contending with fears for their safety and that of their children while also experiencing increased workload, school closures, diminished childcare options, and increased presentation of psychosocial anxieties in their patients.

The MMPW participant experience echoed much of what researchers describe as a “triple whammy” for female physicians. Each of the women in the study described experiences of structural discrimination, inadequate family leave, inadequate support for their return to work – especially for lactation accommodation and rigid work schedules. Two of the women cited incidents of sexual harassment and all were experiencing the pressure of repaying high student loan debt. All were in a dual-income couple and navigating the stressors of shared child and domestic responsibilities.

MMPW was unique in three ways: the brevity of the training; the live interactive online format; and the specific focus on physician women, the majority of whom were mothers. The results were comparable to other brief MBIs as well as lengthier curricula that show increased resiliency and reduced burnout factors in participating health professionals (Asuero et al., 2014; Ekman & Krasner, 2017; Kemper, 2017; Schroeder et al., 2018).

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A 2017 literature review of 14 brief mindfulness interventions for healthcare providers, for example reported positive changes in levels of stress, anxiety, mindfulness, resiliency, and burnout symptoms (Gilmartin et al., 2017). A study lending strong support to the value of brief MBI was conducted at the Mayo Clinic and cited significant improvements in perceived stress and anxiety following a single 90 minute mindfulness training and two follow-up phone calls (Gilmartin et al., 2017; Sood et al., 2011). An on-line mindfulness training for health care workers delivered in three one-hour modules also showed significant improvements in mindfulness measures, but did not measure directly for resilience and self-compassion factors associated with burnout (Kemper, 2017).

MMPW demonstrates unique value in its accessibility and benefits for stressed physician mothers. The positive results suggest these benefits are equivalent to longer, more expensive in-person training (Wolever et al., 2012). This is important as other strategies, including in-person training and duty hour restriction for residents, have not proven to be effective in reducing burnout (Oakley et al., 2014).

Limitations

Although this study holds promise as an effective intervention, it has several limitations and invites additional questions for future investigation. The participants were self-selected and all but two had some prior exposure to mindfulness training. It would be interesting to test effectiveness with people who are brand new to mindfulness concepts. Additionally, responses to the measurement tools were self-report and the study lacked the benefit of comparison to a randomized control group.

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The curriculum would further benefit from an objective research study to test replication value as this iteration was developed, facilitated, and evaluated by the author of this paper. Follow up evaluations at three- and six-month intervals could help determine the lasting benefits of the intervention. Anecdotally, those participants continuing to participate in the on-going weekly mindfulness sessions have stated that these reinforce their continued and expanded use of the practices. Lastly, a larger research sample would offer a more reliable and informative assessment of the intervention outcomes. It would also be helpful to test the intervention's effectiveness for men and non-physician healthcare workers as well as women with non-heterosexual binary identities.

There is a comparative scarcity of research on physician women and even fewer studies on the impact of MBIs on physician women and mothers. Given that women comprise half the physician workforce and physician shortages are growing, it is important to study the unique ways to recruit and retain women in medicine. More studies of women physicians choosing to reduce their hours or leave their medical careers completely would support a better understanding of the barriers and inform strategies for retaining them.

It is also important to note that research on gender difference is usually viewed as a binary variable and gender identity or sexual orientation of the physician is not considered. In addition to the need for research on physician women, challenges faced by women physicians who are sexual or gender minorities, such as those in the LGBTQ+ and transgender communities is wanting. Additionally, the intersection of race,

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age, minority status, and ethnicity are all important areas of study on burnout and women physician retention.

Conclusion

The disincentivizing of women in medicine, whether manifesting in abandoning a medical education, reducing clinical hours, or quitting an established medical career, represents substantial loss to patient care and the health system at large. Mindfulness training is an excellent, empirically proven strategy for supporting resilience and reducing burnout in physicians. However, it is an oversimplification to presume that burnout solutions rest on the physicians themselves via various forms of mindfulness and self-compassion training.

The harsh reality of the disproportionate, systemic stress on physicians and most other healthcare workers has been laid bare by the COVID-19 pandemic. A recent study from the UK, for example shows that health care workers and their families account for one in six hospital COVID-19 cases (Shah et al., 2020). While current data is not yet available for US physicians, there is every reason to expect similar numbers as medical professionals continue to struggle with inadequate PPE, long work hours, and public misinformation about preventative measures.

Physician mothers experience the increased COVID burden as one more layer of added weight to salary inequities, glass ceilings (physician fathers advance far more frequently than women) and inadequate support for pregnancy, family leave, childcare, and flexibility in return-to-work expectations during their first year following childbirth (Butkus et al., 2018; Riska, 2011).

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The COVID-19 pandemic has introduced enormous change globally, but most of the associated elements of social injustice are not new, only exacerbated. Society is experiencing disproportionate numbers of deaths of poor, Indigenous, and people of color. Working-class women, over-represented in essential care work roles including nursing, elderly care, childcare, food service and domestic labor are not only more at risk of contracting COVID-19, they are dying from it. Job loss and working from home adds to the double burden of unequal domestic labor even for white, relatively affluent women. These institutionalized, accepted injustices against women point to a system that permits injustice to all beings not seen as essential to the profit-driven goals of the dominant paradigm.

Lessons from COVID-19 are an opportunity to acknowledge and bring attention to these inequities and those caused by the commodification of healthcare (Robertson & Travaglia, 2020). The pressures exerted on health care providers stem from systemic, institutionalized policies and priorities defining success as efficiency and profit growth (Churchill, 1999; Huang et al., 2018; Pellegrino, 1999). These injustices are not limited to healthcare and are evident in COVID-19's crushing impact on education, private non-profit and government sponsored social services. Any sincere effort to mitigate this harm requires consideration of the foundational assumptions behind profit-driven mentalities. Medicine currently offers a powerful example of the damage caused by pitting productivity and profit against the care of people and workers.

Nine months into the COVID-19 pandemic, the popular pandemic slogan, "In It Together" rings increasingly hollow. Even in more liberal public welfare systems such as Canada's, the impact and response to COVID-19 is both gendered, racialized and

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class-related and simply exacerbating pre-pandemic social and health disparities (Bryant et al., 2020).

Long established patterns of power that undergird social and health inequalities are now becoming acutely felt by doctors – who are mostly white and employed in one of the highest paid, most socially prestigious professions. Their positions of relative privilege afford possibilities to protect those who are more vulnerable and least able to defend themselves. Race, education, and financial status are not enough to cover up the realities of unequal treatment of both healthcare workers and their patients. Interventions to address these issues at individual and policy levels are critical. Arguably more critical is the need to address the political assumptions promoting and reinforcing the destructive “logic” of profit driven, deregulated, “trickle-down” economics, especially as applied to health care (Bryant et al., 2020; Churchill, 1999; Huang et al., 2018; Pellegrino, 1999; Rushton, 2017; Rushton et al., 2017; Stonnington & Files, 2020; Wong, 2020).

Recommendations at the Micro Level

This list is suggested by the referenced article on hospitalists and adapted to be generalized for addressing gender disparities experienced by all women physicians (Bryant et al., 2020).

1. Prepare for pandemic surge capacity.
2. Provide adequate PPE.
3. Provide childcare resources.
4. Provide on-call back up for physician mothers.

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5. Address salary disparity by gender, race, religion, sexual orientation, ethnicity, age, or disability status.
6. Closely monitor burnout as it relates to gender disparities.
7. Include women and mothers in wellness planning initiatives.
8. Include mothers in developing supportive policies for pregnancy, maternity, and return to work accommodations that recognize family responsibilities.
9. Educate all women physicians about gender disparities.
10. Provide peer support and collaborative teams to address the disparities.
11. Address academic structures that disproportionately threaten progress toward promotion for women, i.e. extending deadlines for promotion or tenure.
12. Reward increased efforts in clinical and administrative contributions.
13. Compensate providers caring for COVID-19 patients by providing hazard pay, paid sick leave, medical and supplemental life insurance, and strong workers' compensation protections for physicians who become ill at work.

Recommendations at the Macro Level

These recommendations are adapted from a feminist perspective on tools for implementing global economic and social change for women. Organizational and systemic change requires strategies that include all players (Shanafelt et al., 2017; Shanafelt & Noseworthy, 2017).

1. Gender responsive budgeting would include women in all pandemic planning from top administrative task forces down to departmental budgeting in government and private health care organizations. The policy tool of gender responsive budgeting has been successfully implemented in developing

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countries around the world with the aim to offset gender inequities triggered by the pandemic. This analytical approach is in line with the United Nation's fifth Sustainable Development Goal: Gender Equity (Viswanath & Mullins, 2020).

2. Reframing parenting, healthcare, and our current education system. The responsibilities of caring for the health and well-being of children is largely viewed as a familial duty. Against decades of best-practice recommendations in child pedagogy, children are typically required to sit for hours in schools and classrooms segregated by age, ability, and the socioeconomic status of the parents. The commodification of education has further reduced the human collaborative exploratory style of learning to a system that operates at the convenience of business working hours and equates education success with standardized test scores. The causative factors of failure rates of poor and ethnic minority children go largely unaddressed. As in healthcare, productivity measures are not true measures of effectiveness in education nor wellness in patients and the physicians attending them.

COVID-19 has opened many eyes to the inequities of the health care system.

The horrific and grueling experience of frontline doctors combined with the millions of deaths and economic loss to people in our communities has served to expose the broader societal levels of social injustice. The intersectionality of injustices imposed on parents, workers, and the beings of our planet has gained more visibility in 2020 through the inadequate response to pandemic, media exposure of police brutality, and domestic climate catastrophes associated with fires, hurricanes, drought, and flooding. White affluent professionals are in a relatively safe position to take a stand

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against the inequities and disparities promulgated by an exploitive profit-driven system. Leveraging their unique position of power in the style of historic labor and social justice movements, physicians could provide a model for demanding social change. As change agents, physicians and the medical field can lead the way toward a reorganization of our societies, workplaces, and institutions into an embodied interconnective organism of care (Kelly & Senior, 2020).

"Wherever the art of medicine is loved, there is also a love of humanity" (Hippocrates, 430 BCE).

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