

ORIGINAL
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Medicine in Motion: Addressing Physician Burnout Through Fitness, Philanthropy, and Interdisciplinary Community Building

Abstract: *Physician burnout is a public health crisis. Although recent studies underscore its prevalence, there are few rigorous studies examining its prevention, especially among medical students and residents. Prior interventions have centered on mindfulness techniques and flexible workload scheduling, yielding limited success. However, interventions that combine fitness with philanthropy and community building may be more effective. The purpose of this report is 2-fold: first, to provide a review of physician burnout and potential prevention mechanisms and, second, to present a case study of how Medicine in Motion (MiM) addresses these issues. MiM facilitates various athletic workouts, competitions, and other events for students and professionals in medicine, dentistry, nursing, and physical therapy to support wellness and charitable initiatives. This analysis identifies 4 barriers to physicians and those in the health care profession from participating in wellness activities: (1) insufficient awareness, (2) logistical challenges,*

(3) lack of purpose, and (4) absence of perceived support. To overcome these barriers, MiM provides a model toolkit for starting a grassroots movement against physician burnout that other health care institutions may emulate. Institutions should provide financial support for these wellness programs. Future research is needed to evaluate

Physician burnout has been declared a public health crisis by many professional medical societies. This syndrome of fatigue, cynicism, and impaired performance at work was first described in 1974, but not studied in the United States until 2011.^{1,2} Dyrbye et al found that burnout among medical providers

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these combined exercise, philanthropic, and community building efforts.

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begins and peaks early in a physician's career, with 56% of medical students, 60% of residents, and 51% of physicians meeting criteria for burnout, 7% to 19% higher than age-matched controls.³ The same group of researchers discovered that burnout

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prevalence in 2017 remains similar to 2011, with physicians still at risk.⁴

The effects of physician burnout extend beyond doctors themselves, resulting in increased medical errors, lower patient satisfaction, higher health care costs, and decreased quality of patient care.⁵⁻¹¹ This analysis reviews the prevention of physician burnout and discusses the founding of MiM (Medicine in Motion), a grassroots, nonprofit organization dedicated to addressing burnout through fitness, philanthropy, and interdisciplinary community building.

Review of Physician Burnout Prevention

Despite recent studies in physician burnout prevention and reduction, there is a need for additional research, especially among medical students and residents.¹² A commonly cited systematic review and meta-analysis by Panagioti et al included 19 controlled studies through May 2016 on 1550 physicians. Interventions ranged from 2 weeks to 9 months in duration, and the majority (12 of 19) of studies delivered physician-directed interventions using mindfulness techniques, followed by simple organization-directed interventions that adjusted work schedules (5 of 19). The review found these wellness interventions resulted in small but significant reductions in physician burnout.¹³ However, such results also indicated that there is vast room for improvement. A void therefore exists for rigorous research and novel interventions in physician burnout prevention. Combining exercise, philanthropy, and community building in a synergistic fashion may address this issue.

It is well established that exercise reduces mortality risk, cardiovascular disease, stroke, and diabetes; however, there is limited research on whether exercise improves physician burnout and mental health. Only 1 of the 19 studies included in the previously mentioned systematic review and meta-analysis by Panagioti et al centered on physical activity.¹³ That study by Panagioti et al

found that 245 residents and fellows who participated in a team-based, incentivized exercise program at the Mayo Clinic in Rochester, Minnesota, reported significantly higher quality of life compared to 383 nonparticipants with the same access to exercise facilities. The exercise program consisted of a 12-week, voluntary, self-directed exercise program that awarded points for self-reported exercise participation and improvements in fitness goals such as leg press strength. Weekly individual and team point totals were emailed to participants and prizes were given to those with the most points. Though program participants also reported decreased burnout compared to nonparticipants (24% vs 29%, $P = .17$), results lacked statistical significance due to inadequate sample size. Furthermore, in a 2017 systematic review looking at the relationship between exercise and burnout among health care workers, Naczenski et al found consistently strong evidence of a negative relationship between physical activity and burnout.¹¹ Finally, a cross-sectional study of 1.2 million people in the United States found that individuals who exercised had 1.49 (43.2%) fewer days of poor mental health monthly than individuals who did not exercise. The largest associations between mental health and exercise were seen for popular team sports, cycling, and aerobic and gym activities.¹⁴

While the relationship between philanthropy and burnout has not been explored, donating one's time, resources, and money has been associated with improved physical health, mental health, and sense of community—all factors intertwined with physician burnout. With respect to physical health, engaging in socially supportive behaviors like volunteering and philanthropic giving has been associated with reduced blood pressure,^{15,16} lower stress levels,¹⁷ and decreased mortality rates.^{17,18} Regarding mental health, charitable acts have been shown to enhance neural activity in reward processing areas of the brain,¹⁹ and have been tied to lower rates of depression,^{20,21} increased overall happiness,²² and increased life

satisfaction.²³ Furthermore, altruism is contagious and fosters community.²⁴ Because physical health, mental health, and community all affect health care provider burnout, philanthropy may be an attractive mechanism to improve well-being and mitigate physician burnout.²⁵⁻²⁷

Limited research exists regarding the impact of community building and mentorship on burnout.^{28,29} However, available studies on burnout in students and residents highlight the negative association between social support and mentorship with burnout.³⁰ Dyrbye et al showed that greater perceived support from faculty is associated with increased medical student resilience to, and recovery from, burnout.³¹ Trainees without a self-identified mentor are significantly more likely to report burnout.²⁹ Social events and maintaining a sense of community among coworkers have been shown to be protective against burnout and increase quality of life among vascular surgery residents and emergency workers.^{26,27}

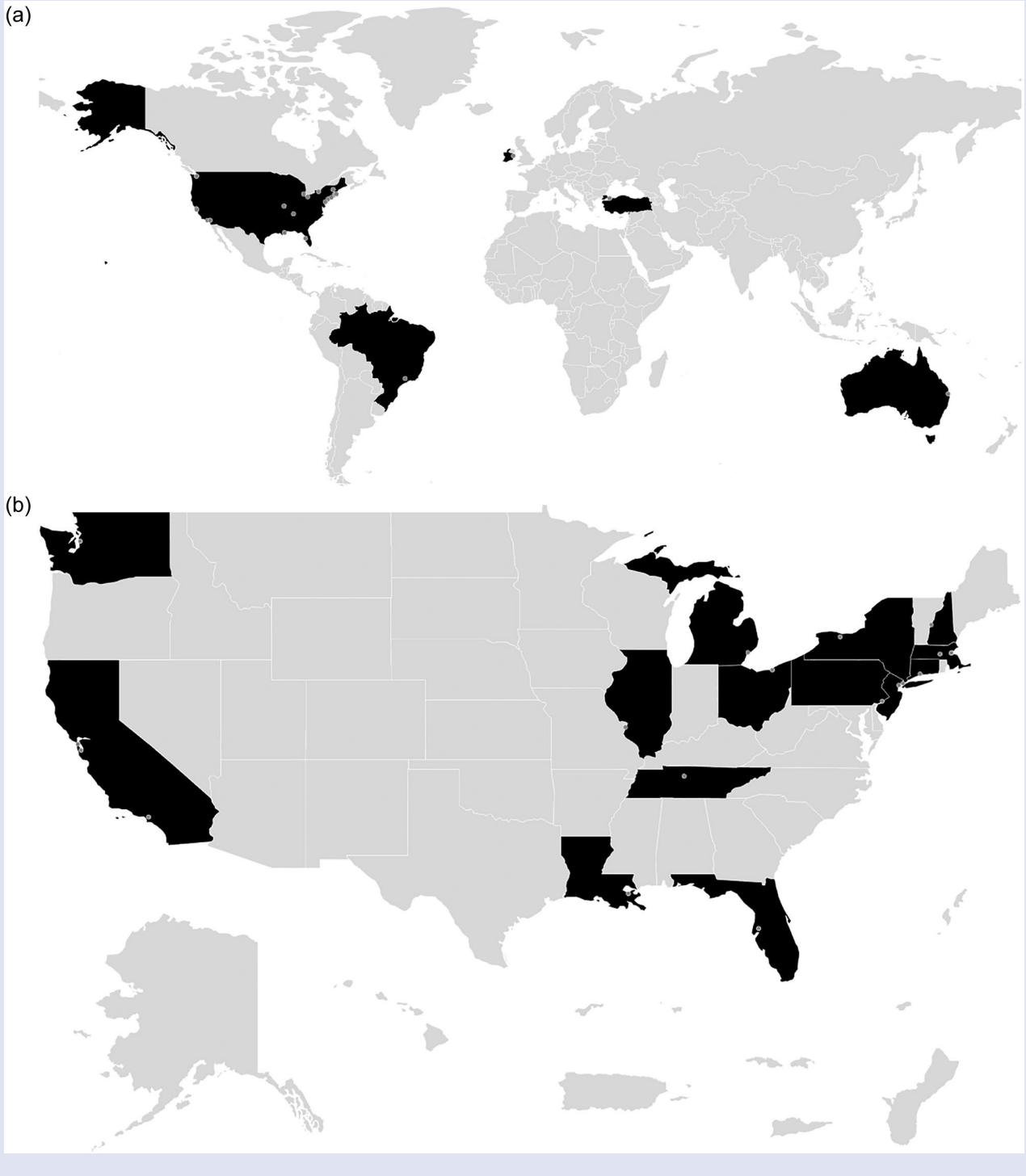
Explored below, via a case study, is how these methodologies could be put into practice.

Medicine in Motion: Addressing Physician Burnout Through Fitness, Philanthropy, and Interdisciplinary Community Building

MiM is a 501(c)(3) nonprofit organization founded by 4 medical students dedicated to promoting healthy lifestyles and wellness, fundraising for medical research and charity, and building community among interdisciplinary health care providers. MiM facilitates various athletic competitions and other events for students and professionals in medicine, dentistry, nursing, and physical therapy to support wellness and charitable initiatives. Since its inaugural year in 2017-2018, the organization has involved over 1000 participants in various running races, bike rides, triathlons, and obstacle course races and has raised over \$70 000

Figure 1.

World (a) and US (b) map illustrating the extent of Medicine in Motion chapters.



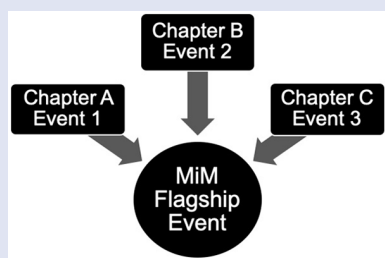
for both medical charities and initiatives addressing racism and social determinants of health. MiM is now an

international nonprofit with a growing number of chapters at various health care institutions spanning the continental

United States and abroad including Turkey, Brazil, South Africa, and Australia (Figure 1a and b).

Figure 2.

The operating model of Medicine in Motion. Each chapter spearheads their own fitness events that other chapters may join. Individual chapter events provide training and raise awareness for the flagship event and philanthropic cause organized by the overarching Medicine in Motion organization.



In a typical year, individual MiM chapters spearhead local fitness and wellness events in preparation for a final flagship event organized by the umbrella organization (Figure 2). The local chapter events provide training and raise awareness for the flagship event, which ordinarily takes place in late summer or early fall and is dedicated toward a medicine-related cause. The operating model of MiM is founded on the premise that while health care provider professionals and students are generally aware of the physical health benefits of exercise and interested in participating in fitness events, there are often significant barriers to actual participation such as unawareness of fitness opportunities, logistical challenges, lack of purpose, and absence of perceived support (Table 1).

To reach providers at all levels of training and raise awareness about future events, MiM uses multiple channels of communication. Email listservs and social media, particularly Instagram, have been critical for outreach, both for increasing participation in events and forming new chapters. For example, a single post on the medical school Instagram profile highlighting MiM generated many chapter requests and spurred connections that led to further chapter recruitment. MiM contacts social media

influencers specializing in medicine and fitness to promote events and grow its audience. Its website (medmotion.org) is the hub for all its activities, providing contact information, event calendars, and photo albums highlighting prior events.

Logistical barriers to participation include registration costs and organizational challenges. To address these concerns, MiM leverages its robust participant numbers by negotiating lower registration fees with event directors. Furthermore, to ensure that attendance is the only requirement for participation, MiM organizes all logistical considerations and transportation of personnel, equipment (eg, bikes), and provisions (eg, postevent drinks and snacks) using its tax exemption status to further minimize cost.

To foster a sense of participatory purpose, MiM amalgamates philanthropy, team building, and fitness into a coherent whole. By designating a challenging flagship event, MiM motivates participants to engage in year-round training through a variety of other athletic events. These flagship events also spur charitable fundraising initiatives such as creating community-service oriented training videos, contacting local businesses to donate raffle items, soliciting employer match programs, and designing interchapter fundraising competitions. The organization uses fundraising software from Donorbox to accept online donations with low processing fees³² and is registered with AmazonSmile, enabling 0.5% of members' Amazon purchases to be donated to MiM.³³ Beyond charitable fundraising, MiM frequently holds postevent socials to provide networking and mentorship opportunities. Workplace culture has been identified as a foundational factor for workplace wellness in health care institutions,³⁴ and bulk-ordering discounted MiM-branded athletic apparel, cycling jerseys, and flags have been essential to establishing a team-oriented culture at—and outside of—MiM events. Indeed, the MiM brand-name was designed to prioritize an inclusive team culture, promoting events that encourage diversity, inclusiveness, and mental balance.

A final barrier to entry is the absence of perceived support from participants' home institutions. This may manifest in several ways, including difficulty acquiring financial support or as an engrained cultural belief that a health care provider's call to care for others supersedes time for self-care. However, it is well established that institutional investment in physician wellness initiatives yields positive investment returns in multiple forms: (1) decreased physician burnout; (2) increased productivity, quality, and safety of care; and (3) greater patient satisfaction.³⁵ A recent study conducted by Seward et al found explicit support from institutional leadership was critical for health care employees to feel comfortable participating in workplace-associated wellness activities.³⁴

To obtain both financial and institutional support for activities, MiM employs a wide variety of strategies. These include presenting at medical societies such as the Massachusetts Medical Society Taskforce on Physician Burnout, garnering features by news outlets to underscore the importance of self-care and exercise for mental health, and partnering with institutional wellness organizations such as the Massachusetts General Hospital Center for Physician Well-being. Additionally, the MiM Board of Advisors is composed of several physicians who assist in the development of institutional partnerships. Importantly, advisors compete in triathlons and races sponsored by MiM, modeling positive work-life balance for trainees. When seeking institutional support or advertisement for events within hospitals, maintaining a database of wellness champions and connections at chapter institutions has proven useful. On a more local level, university student interest groups can work with their governing councils to seek financial and institutional support for their own MiM events. Finally, word of mouth from members who have participated in MiM events and encourage participation from their friends and colleagues is one of the most effective ways to promote participation.

Table 1.

The Medicine in Motion Toolkit for Addressing Burnout Through Fitness, Philanthropy, and Community Building.

Barrier to exercise	Domain	Tools
Insufficient awareness of opportunities	Communication	Social media (Instagram)
		Listserv
		Website
Logistical challenges	Participation incentives	Event contracts
	Planning	501c3 nonprofit status
		Group transport
Lack of purpose	Philanthropy	Music videos
	Team building	Service videos
		Donation matching
		Contact local businesses
		Flagship event
		Chapter competitions
		Post-event socials
		Mentoring
		Team apparel and bulk ordering
		Brand-name
Lack of perceived support for participation	Institutional support	Faculty advisors
		Professional societies
		Chief wellness officer database
		Press and media releases
		Student groups

Group Fitness During COVID-19

Physical distancing due to COVID-19 has challenged the MiM operating model. For the 2020-2021 year, MiM initiated a “MOVE” campaign to virtually promote physical activity while supporting organizations that fight social injustices and address racism as a public health crisis. The campaign includes a series of virtual fitness events that raise money for organizations that fight racial injustices.

For example, MiM chapters will host workouts and speaker series via Zoom with suggested donations of \$5 for each class. Additionally, creative events such as providing GPX files so participants may route a run in the shape of “BLM” and post a picture to social media allows participants to support Black Lives Matter while simultaneously maintaining physical distance but social connectedness with other participants. The Move Campaign’s flagship event is a virtual Promise Run with different

distances in memory of George Floyd, Breonna Taylor, and Ahmaud Arbery. Participants can share their activities on MiM social media to virtually run “alongside” peers and colleagues.

Future Directions

As MiM continues to grow, the organization will develop several initiatives in research, grant acquisition, communication, and mentoring. To formally assess MiM’s impact, the

MEDMOTION trial is a randomized controlled trial currently under institutional review board review that will examine the effects of group exercise classes on physician burnout and sense of community among students, residents, fellows, and attending physicians. Consistent with 9 recent systematic reviews on medical burnout and wellness interventions,^{11,13,30,36-41} this will be the first study of a wellness intervention that integrates medical students with residents or attending physicians. It will also be one of few interventional wellness studies involving students, and one of few that stratifies by gender and race. Furthermore, MiM aims to build an endowment to provide funding for seed grants that support new chapters with start-up packages (eg, a flag and T-shirts) and kick-off event funding. Finally, as MiM graduates more students to residency programs, the organization will develop a mentorship model based on interdisciplinary connections made at future events.

Conclusion

This report provides a review of physician burnout prevention mechanisms, potential barriers to wellness event participation, as well as several tools used by MiM to launch a movement combating this phenomenon. Using MiM as a model, health care institutions and their employees may benefit from supporting and promoting the practices of grassroots exercise campaigns targeting burnout. An investment of this sort would include marketing, organizational assistance, and funding incentives for participation and engagement. Future research like the developing MEDMOTION trial is needed to evaluate whether these combined exercise, philanthropic, and community building efforts are successful in combating physician burnout, albeit, the initial findings appear promising.

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Ethical Approval

Not applicable, because this article does not contain any studies with human or animal subjects.

Informed Consent

Not applicable, because this article does not contain any studies with human or animal subjects.

Trial Registration

Not applicable, because this article does not contain any clinical trials.

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