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Effects of a Workplace Well-Being Program on Professional Quality of Life Among Health Care Personnel

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Background: A healthy, competent, and compassionate health care workforce is critical to ensure that health systems can deliver high-quality, safe patient care. Therefore, health care personnel need access to scalable, recurring, evidence-based training opportunities to bolster compassion, mitigate burnout, and enhance resiliency, ultimately improving their professional quality of life. This evaluation examined the reach, effectiveness, adoption, implementation, and maintenance of workplace-based well-being training opportunities offered by Atlanta's Resiliency Resource for frontline Workers (ARROW) program across two health systems.

Methods: ARROW formed through an academic practice partnership designed to introduce health care personnel to evidence-based mindfulness and compassion-based training opportunities: the Community Resiliency Model (CRM) and Cognitively-Based Compassion Training (CBCT). Trainees provided evaluation feedback immediately before, two weeks after, and three months after attending a CRM or CBCT event. The Short Professional Quality of Life Scale assessed compassion fatigue, burnout, and compassion satisfaction; the Connor-Davidson Resilience Scale assessed resiliency.

Results: ARROW hosted 59 training events that directly trained 761 health care personnel. Trainees' compassion fatigue scores, a key component of professional quality of life, decreased up to three months after engaging in programming by 0.32 points ($p = 0.005$, $d = -0.14$). Trainees who attended CBCT events were observed to have additional declines in compassion fatigue scores, by 0.45 points ($p = 0.016$, $d = -0.215$). No differences in burnout, compassion satisfaction, or resiliency were observed. ARROW mentored 68 health care personnel to become either CRM– or CBCT–certified instructors using a train-the-trainer approach. New trainers continued to offer well-being training opportunities and reached an additional 772 colleagues.

Conclusion: The findings from this evaluation indicate the broad reach and sustained impact ARROW had across health systems, engaging health care personnel in workplace well-being programming to bolster professional quality of life. Specifically, improvements in compassion fatigue scores following program participation corresponded to a small effect size; however, no changes in burnout, compassion satisfaction, or resiliency were seen after engaging in ARROW programming.

BACKGROUND

Problem Description

Diminished professional quality of life among health care personnel is pervasive, harmful, and costly, affecting the health of health care personnel, the quality of patient care, and the efficiency of care systems in which clinicians operate. *Professional quality of life* refers to individuals' positive and negative feelings about their work as helpers.[1,2] Professional quality of life is frequently assessed as a measure of workplace well-being in health care settings.[1,2] The negative milieu of compassion fatigue, burnout, and stress diminishes health care personnel's well-being and professional satisfaction.[3–5] Decreased professional quality of life has been linked to intent to leave and moral distress among health care personnel.[6,7] Declining professional satisfaction and burnout worsens the health of personnel, inhibits the delivery of safe patient care, and results in greater turnover within health systems, and higher operational costs.[8–10] Furthermore, compassion fatigue—an amalgam of burnout and secondary traumatic stress—results in increased absenteeism and turnover among health care personnel.[11,12] Concerted efforts are needed to improve the well-being of all personnel working in health care settings, given the team-based nature of care delivery.

Turnover among health care personnel due to diminished well-being is of particular concern among those practicing in the Southeastern United States (Southeast). Research indicates that as many as 30% of nurses in the

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Southeast consider leaving their jobs due to burnout, higher than elsewhere in the nation.[13] In the Southeast, like elsewhere, clinicians continue to provide and support the delivery of patient care under dangerous working conditions that have been further exacerbated due to COVID-19.[14] Many health care workers have experienced declines in their professional quality of life since the COVID-19 pandemic, which has coincided with an exodus of professionals from the health care workforce.[15,16] As such, systematic changes are needed within health systems to reduce threats to professional well-being, including addressing unsafe working conditions. Agile teams of content experts delivering urgently needed, rapid training on various psychomotor and emotional coping skills to health care personnel are common and became necessary across care settings during the pandemic while more prolonged system-level interventions to improve working conditions were still being developed.[17,18] Evidence-based interventions that incorporate these skills must be simultaneously implemented to mitigate factors threatening professional quality of life among clinicians and workers supporting health care delivery.

Available Knowledge

Systemic investments to provide access to scalable, recurring, evidence-based training opportunities known to effectively bolster compassion, mitigate burnout, and enhance resiliency are warranted to improve professional quality of life among health care personnel. Mindfulness and compassion-based interventions are meditative and contemplative practices that foster nonjudgmental intentional awareness and aid in cultivating emotion regulation, empathy, and warm-heartedness when faced with suffering and tribulations.[19] Mindfulness and compassion interventions have been found to improve well-being while reducing stress, anxiety, and depressive symptoms among health care workers.[20] Therefore, individual-level opportunities to learn how to cultivate resiliency and address symptoms that threaten professional quality of life, including compassion fatigue, are a key component of larger multipronged workplace well-being programs that health care system leaders can implement. Providing opportunities for health care personnel to gather, learn, and practice together new skills learned from mindfulness and compassion-based training events can help foster connection and community while simultaneously helping to build a culture of gratitude and recognition within health systems, as outlined by the US Surgeon General's recent report.[5] Although many meditation-based interventions have an established evidence base for improving professional quality of life, these approaches are often offered as adjunctive and individually oriented solutions that risk increasing the burden of already stressed employees, specifically when offered outside paid work hours. These factors may make intervention participation less feasible for those most in need. Paramount to enhancing the feasibility and scalability of these individual-level interventions are system-level approaches. Systematic approaches are needed to promote the integration and implementation of mindfulness and compassion-based interventions into health care personnel's practice settings as part of accessible and scalable workplace well-being programming. Building organizational capacity to host training activities for health care personnel to engage in and learn mindfulness-based approaches is warranted from a system level. Increasing access to well-being opportunities in the workplace can aid health systems striving to achieve the Quadruple Aim of supporting health care personnel to thrive in their workplace.[21]

Rationale and Aims

Burnout and job dissatisfaction remain elevated nationwide, yet in the Southeastern United States, the problem is acute. Facilities across Atlanta report higher rates than the national average among clinicians of intent to leave the field, which exacerbates the region's health care worker shortage.[22] In 2022 the US Health Resources and Services Administration (HRSA) awarded more than $68 million to universities, health care systems, and organizations to implement resiliency interventions aligned with the Surgeon General's *Advisory on Building a Thriving Health Workforce* for workplace mental health and well-being to optimize the health of the health care workforce.[5] In response, Atlanta's Resiliency Resource for frontline Workers (ARROW) program was formed. ARROW focused on engaging health care workers through a scalable and sustainable approach committed to building the infrastructure needed to enhance overall well-being among individuals providing care and those supporting the delivery of patient care within health systems across metro Atlanta.[23] Over two years, ARROW hosted recurring evidence-based mindfulness and compassion-based training events known to effectively improve compassion and well-being within two health systems and invited health care personnel to attend. To evaluate this program, a longitudinal multisite evaluation, guided by the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework, was used.[24]

METHODS

Context

The ARROW program was implemented at two large health systems in the Atlanta area, leveraging an academic practice partnership between our university and local health systems. One health system consists of a large public safety-net hospital caring for a medically underserved population. The facility is home to one of the nation's largest Level 1 trauma centers, with more than 150,000 emergency department encounters annually. The second health system that implemented ARROW was a large academic health system

that included 11 hospitals spanning urban and suburban areas of Atlanta. Content experts and clinician scientists from the university met routinely with operational leaders (for example, chief nursing officers, chief well-being officers) and program directors (for example, nurse or physician residency program directors) in each health system to design and plan ARROW programming as well as to evaluate implementation.

The ARROW program used Plan-Do-Study-Act (PDSA), a rapid cycle quality improvement methodology, to enable rapid collection and analysis of both quantitative and qualitative data, the results of which were applied for quality improvement and continuous feedback to ARROW stakeholders.[25] This iterative process ensured that ARROW programming was evaluated at each phase of implementation to ensure that diverse audiences' needs were met and that barriers to accessing well-being training events were identified to proactively guide future training opportunities. Based on available content experts' feedback from health system partners, existing research, and delivery format, two evidence-based interventions known to improve well-being were offered: Community Resiliency Model (CRM) training and Cognitively-Based Compassion Training (CBCT).

During the Plan component of the PDSA, the ARROW team met with health system leaders and stakeholders on a routine basis to outline potential audiences to engage in well-being interventions and calibrate the delivery of programming. This included planning dedicated time in communal spaces within facilities to offer training opportunities and communicating with health care personnel when ARROW programming was being offered. ARROW team members met with operational and unit managers to ensure that paid professional development time was provided for workers during their shifts to attend programming. Training opportunities were provided on a rotating schedule, including weekends, to accommodate shift workers. In addition, ARROW programming was incorporated into didactic sessions of existing training programs for nurse residents, physician residents, and advanced practice provider fellowships. As part of the Do aspect of this PDSA approach, the ARROW team provided training opportunities in CRM or CBCT to health care personnel while capturing process and outcome measures, as outlined below. These data were then analyzed as part of the Study component of PDSA. This required examining monthly survey data to understand trainee feedback and trends in outcomes across interventions, audiences, settings, and expert trainers. Listening sessions were held with trainees to determine challenges to attending events and using skills after. Listening sessions were conducted as virtual focus groups, with trainees selected using a convenience sampling approach. Sessions were recorded and transcribed for coding, using both inductive and deductive codes. This analysis informed the Act phase during which training materials were updated, and ARROW programming was adapted within the same practice settings and to other clinical units across both health systems.

To ensure adoption and sustainability, ARROW leveraged a train-the-trainer model to increase access to well-being programming and optimize professional quality of life metrics. The Centers for Disease Control and Prevention (CDC) states that train-the-trainer models are "intended to engage master trainers in coaching new trainers that are less experienced with a particular topic or skill, or with training overall."[26] CDC also notes that the train-the-trainer model "can build a pool of competent instructors who can then teach the material to other people."[26] The multiplicative approach enables a rapid expansion of the number of experts in an organization who are well versed in materials and confident in disseminating new knowledge to others. This model is commonly used in education and clinical practice settings.[27,28] Using quality improvement approaches, the ARROW program was able to plan, implement, and adapt a series of training events in rapid succession. This exposed health care personnel to mindfulness and compassion-based training opportunities while identifying embedded advocates in workplaces to undergo rigorous training, supported by ARROW and managers, to become certified experts, thus supporting long-term programming. These newly certified trainers, embedded in the health systems, were then positioned to offer training events in CRM or CBCT to colleagues.

Training Opportunities Implemented to Support Well-being

Community Resiliency Model (CRM). CRM is an evidence-based, mindfulness-based approach, emphasizing attunement to interoceptive and exteroceptive signaling cues for regulating autonomic responses to stress.[29] CRM was derived from somatic psychotherapy and self-stabilization interventions using body sensation awareness. Body sensation awareness is called interoception and is a key component of mindfulness.[30] Awareness of internal body sensation occurs in the insular cortex and adjacent brain structures, which serve as cerebral centers regulating emotional regulation, empathy, and social interaction.[31] CRM teaches six skills to enhance attention control while tracking body sensations before and after using the techniques.[32] Implementing these techniques may attenuate the immediate impact of stressors. The CRM model has been implemented across several settings and populations, and using CRM skills has been found to be associated with improved well-being, resiliency, and physical symptoms of stress.[33,34] As part of the ARROW programming, CRM skills were introduced over a 60- to 90-minute session, giving participants a brief overview of concepts and an opportunity to apply skills. CRM expert trainers were certified through the Teacher Training Program offered by the Trauma Resource Institute, the developers of CRM, which includes an inten-

sive 40-hour didactic and applied practice course followed by months-long mentorship at their workplace implementing CRM.[35]

Cognitively-Based Compassion Training (CBCT). CBCT is a highly researched and protocolized compassion meditation intervention that follows a six-module protocol. Although secular in presentation, CBCT is derived from Tibetan Buddhist mind-training practices.[36] Whereas mindfulness-based practices emphasize developing and maintaining a nonjudgmental stance toward thought processes and emotional reactions, CBCT practices apply a cognitive, analytic approach that entails challenging one's unexamined thoughts and emotions toward other people.[37,38] Within the Tibetan Buddhist tradition, concentrative and mindfulness practices are typically employed as useful preliminary techniques for establishing the focus and awareness necessary to engage in specific compassion practices. For this reason, CBCT begins with practices to cultivate mindful awareness. The training protocol is highly iterative, such that after the six modules are completed, each trainee's daily meditation practice begins with a brief period of concentration and mindfulness to calm and focus the mind. This is followed by analytical practices designed to challenge unexamined assumptions regarding feelings and actions toward others, with a focus on generating spontaneous empathy and compassion for themselves and others.

CBCT has been used among patients and clinicians and has been shown to improve self-compassion and reduce depressive symptoms.[36,39,40] Furthermore, CBCT has been linked to reductions in inflammatory markers and increased neural activity subsequently associated with enhanced empathy.[36,41] As part of ARROW programming, CBCT was offered either as an eight-hour immersive training day onsite or across several weeks (for example, one hour per week for eight weeks). Becoming a CBCT trainer requires participating in a six-month CBCT Teacher Certification program. This apprenticeship-style credential process was designed to provide high-quality teaching of CBCT while maintaining fidelity.[42]

Measures

Evaluation metrics were collected from trainees immediately prior to initiation of a training event and again at two weeks and then three months after the training event (Appendix 1, available in online article). Evaluation measures were estimated to take approximately 10 minutes to complete. Trainees were asked to voluntarily scan a QR code to access evaluation feedback forms prior to the training that connected to REDCap–based evaluation forms. At follow-up, trainees were e-mailed individualized evaluation feedback forms via a secure REDCap link that anonymized their feedback to evaluators. Trainees received continuing education credits for attending a training event. In addition, a $25 gift card was sent to individuals providing evaluation feedback at three months. Process and outcome data that spanned reach, efficacy, adoption, implementation, and maintenance (RE-AIM) were used throughout this multipronged evaluation. The RE-AIM framework, developed as an implementation science tool to help translate scientific evidence into practice, provides a set of dimensions to consider when developing and reporting indicators.[24]

The Short Professional Quality of Life Scale (sProQOL) is a reliable and valid nine-item measure used to assess the self-reported quality of life health care professionals may feel concerning their work.[43,44] Respondents reflect on how often they experience different emotions related to their work on a five-point scale ranging from 1 (never) to 5 (very often). Responses are summed to compute three distinct scores: Compassion Fatigue, Burnout, and Compassion Satisfaction. Compassion Fatigue, also referred to as Secondary Traumatic Stress, captures feelings driven by fear and work-related trauma. Burnout refers to feelings of exhaustion, frustration, and anger toward work. Higher Compassion Fatigue and Burnout scores indicate poor professional quality of life. Compassion Satisfaction refers to the positive aspects and pleasure individuals derive from their work. Higher scores indicate greater satisfaction.

The Connor-Davidson Resilience Scale 2-item (CD-RISC-2) is a self-assessment tool for measuring individual resiliency.[45] Respondents are asked to report their ability to adapt and bounce back when facing hardship on a five-point scale, ranging from 0 (not true at all) to 4 (true nearly all the time). The two-item scores are summed to provide a total score, where higher scores indicate greater resiliency.

Before engaging in training activities, trainees reported demographic and occupational characteristics that included age, race, sex, occupation, and years in the occupation. Occupation was operationalized into categories based on standardized profession categories and modified based on providers' scopes of practice. For example, "nursing" included nurses and nurse managers, while "advanced practice providers and physicians" included nurse practitioners, physician assistants, pharmacists, and physicians. The ARROW program had no restrictions on which personnel or occupations were invited to participate in training activities, given the need to support the wide range of teams employed within the health systems.

Analysis

Descriptive statistics, including means and standard deviations (±), were computed for continuous variables, and frequencies and percentages were calculated for categorical variables. Linear mixed-effects models were constructed to estimate changes in metrics over time after attending a training event.[46] To optimize model fit, parsimonious models with fixed effects for time and training type and a random effect to account for collinearity within trainees' follow-up data were used. Mixed-effects models account

Table 1. Characteristics of Trainees

Characteristic	Overall ($N = 622$)
Sex, *n* (%)	
Male	93 (15.0)
Female	529 (85.0)
Race, n (%)	
White	261 (42.0)
African American	293 (47.1)
Asian	59 (9.5)
Multiple or Other Races	9 (1.4)
Age, mean (SD)	37.6 (13.5)
Occupation, *n* (%)*	
Nursing	344 (55.3)
Advanced Practice Providers and Physicians	59 (9.5)
Public Health	30 (4.8)
Paraprofessional and Behavioral Health	74 (11.9)
Allied Health Professionals	46 (7.4)
Other Health Care Personnel	69 (11.1)
Years in Health Care Occupation, mean (SD)	8.0 (9.9)
Training Type Attended	
Community Resilience Model Training	456 (73.3)
Cognitively-Based Compassion Training	166 (26.7)

* Occupation categories: *Nursing* includes registered nurses and nurse managers. *Advanced Practice Providers and Physicians* includes nurse practitioners, physicians, physician assistants, and pharmacists. *Public Health* includes health administrators, researchers/scientists, program and research coordinators, and operation managers. *Paraprofessional and Behavioral Health* includes pastoral/spiritual care clinicians, social workers, certified nursing assistants, counselors, recovery coaches, licensed mental health professionals, psychologists, and behavioral health specialists. *Other Allied Health Professionals* includes physical therapists, occupational therapists, speech therapists, nutritionists/dietitians, and medical assistants. *Other Health Care Personnel* includes law enforcement officers, office/support staff member, phlebotomy technician, public safety officer, technician, police officer, surgical tech, patient safety manager, training manager, communications, director of Office of Well-Being, and emergency medical service providers.
SD, standard deviation.

for missing data over time and enable the computation of group-level trends, thus allowing the inclusion of all trainees' evaluation data even if individual-level metrics are not available at all follow-up points.[46] Interaction terms between time and training type were examined but were not statistically significant. A threshold of $p < 0.05$ was used to determine statistical significance. Effect sizes for significant findings, shown using Cohen's *d*, were determined based on the covariance parameter estimates of the unstructured matrix within models. Anonymized data were exported from REDCap to Excel for analysis and uploaded into SAS. Analyses were conducted in SAS (SAS Institute Inc., Cary, North Carolina).

Ethical Considerations

Due to the program evaluation nature of this work, the local Institutional Review Board determined that these activities were not human subjects research (#00004013).

RESULTS

Reach

Between March 2022 and May 2024, 761 out of 956 invited health care personnel attended a training event. A total of 622 trainees (81.7% of the total number of attendees) provided evaluation data (Table 1). Of these, most identified as female (85.0%) and Black or African American (47.1%), with a mean age of 37.6 years. More than half of those who provided evaluation data were nurses (55.3%). However, personnel from various professional backgrounds engaged in training opportunities, including but not limited to pharmacists, physicians, nurse practitioners, physician assistants, technicians, and public safety officers. Trainees reported an average of 8.0 years of experience in health care.

Effectiveness

Mixed-effects models indicated that, on average, trainees' sProQOL Compassion Fatigue scores improved after engaging in any programmatic offerings hosted by ARROW (Table 2). Up to three months following the training, individuals reported a significant decline in Compassion Fatigue scores, regardless of the type of training attended ($\beta = -0.32$, 95% confidence interval [CI] -0.55 to -0.10, $p = 0.005$, $d = -0.1$) (Figure 1). Individuals attending a CBCT event were observed to have additional improvements in Compassion scores ($\beta = -0.45$, 95% CI: -0.82 to -0.08, $p = 0.016$, $d = -0.16$). No differences in sProQOL Burnout, sProQOL Compassion Satisfaction, or CD-RISC-2 scores were observed over time.

Table 2. Mixed-Effects Model Estimating Change in Outcomes over Time

	sProQOL Compassion Fatigue			sProQOL Burnout			sProQOL Compassion Satisfaction			CD-RISC-2		
	β	95% CI	*p*	*β*	95% CI	*p*	*β*	95% CI	*p*	*β*	95% CI	*p*
Intercept	6.75	6.53 –6.96	< .001	8.26	8.03 –8.49	< .001	11.74	11.53 –11.95	< .001	6.20	6.08 –6.32	< .001
Time												
Baseline (reference)												
2 weeks	-0.17	-0.43 –0.08	0.173	-0.06	-0.36 –0.24	0.682	0.06	-0.24 –0.36	0.679	0.00	-0.16 –0.15	0.951
3 months	-0.32	-0.55 – -0.10	0.005	-0.01	-0.30 – 0.28	0.946	-0.04	-0.31 –0.22	0.745	0.07	-0.08 –0.23	0.338
Training Type												
CRM (reference)												
CBCT	-0.45	-0.82 – -0.08	0.016	-0.84	-1.27 – -0.42	< .001	0.78	0.40 –1.16	< .001	0.43	0.22 –0.65	< .001

sProQOL, Short Professional Quality of Life Scale; CD-RISC-2, Connor-Davidson Resilience Scale 2-item; CI, confidence interval; CRM, Community Resiliency Model; CBCT, Cognitively-Based Compassion Training.

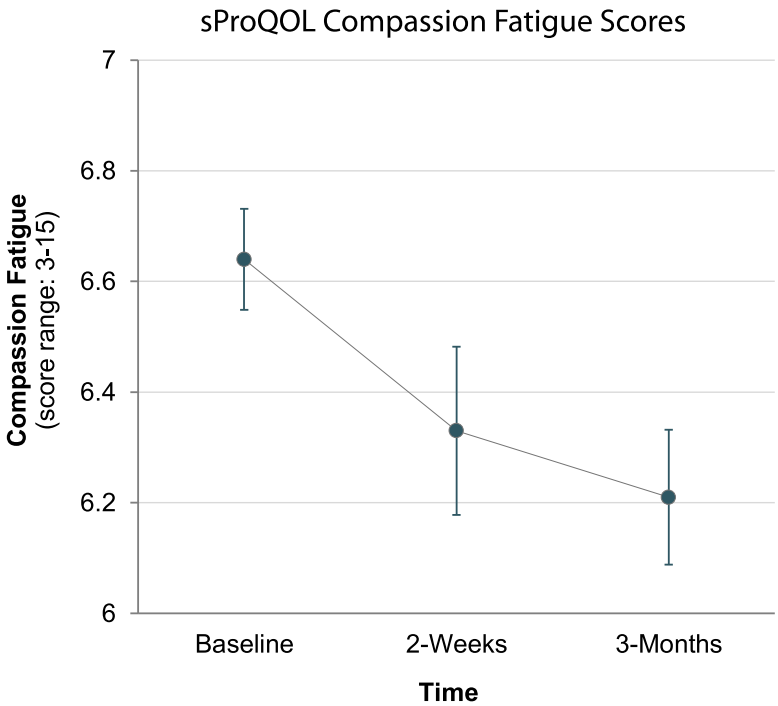


Figure 1: As shown here by the plotted means and standard errors, the Short Professional Quality of Life Scale (sProQOL) Compassion Fatigue scores improved over time after engaging in Atlanta's Resiliency Resource for frontline Workers (ARROW) programming.

Adoption and Implementation

During this same period from March 2022 to May 2024, 59 training events were held; 66.1% of these were CRM events, and 33.9% were CBCT events. Approximately half of the training events were held at each health system, with an average of 2 events per month hosted by ARROW. Most events were held during the day, with 13.6% of training events offered during evening and night shifts. The average number of trainees per event was 12.9. Most trainees attended a CRM event (73.3%), and approximately a quarter of trainees attended a CBCT Event (26.7%). Among the 412 trainees who provided evaluation feedback at three months, 83.0% reported using skills learned from ARROW training events, indicating strong adoption.

Maintenance

As part of ARROW's train-the-trainer approach, 57 health care personnel have engaged in rigorous training to be certified as CRM instructors, with an additional 11 certified as CBCT instructors. Collectively, these individuals have hosted 44 training events in their workplaces, reaching 772 coworkers. After attending peer-led training events, all personnel were asked to provide anonymous feedback and rate their likelihood of recommending the training to their col-

leagues, from 0 (not at all likely) to 10 (extremely likely). Among the 772 respondents who engaged in peer-led training, the average rating score was 9.2 out of 10 (± 1.7), and 89.4% (682/763) agreed or strongly agreed that "After this training, I feel prepared to incorporate skills learned into my daily practice to improve well-being."

DISCUSSION

This analysis found the ARROW program had a broad reach following successful implementation and adoption, with engagement in training activities associated with improvements in trainees' professional quality of life. In two years, the ARROW program had substantial reach to diverse groups of health care personnel across multiple health systems. The scope and scale of the ARROW program expand on previous programming targeted at workers on individual health care units or delivered to specific occupations.[9] Unlike previous work examining the utility of mindfulness and compassion-based training for health care personnel, which have been limited to single-site or small occupation-specific samples, the ARROW program broadly scaled and made training opportunities accessible to various personnel across health care settings.[47] ARROW engaged frontline health care personnel that included nurses, physicians, advanced practice providers, and key personnel critical to the safe delivery of high-quality patient care, including public safety officers and administrators.

Engagement in any ARROW programming, regardless of duration or mechanism (that is, CRM, CBCT), was associated with improved professional quality of life scores. Although seemingly marginal, even modest reductions in compassion fatigue can amount to critical long-term changes to health system outcomes, such as turnover.[10,48] Given the amalgam of factors that drive professional quality of life and the complex practice environment health care personnel experienced during the pandemic, it is difficult to isolate the benefits of any one therapeutic intervention on outcomes regardless of the number of extraneous variables and possible confounders collected. Therefore, this evaluation's ability to identify any signal linking improvements in well-being outcomes among personnel attending ARROW programming is noteworthy.

While leveraging a train-the-trainer approach to ensure program sustainability, ARROW's implementation, adoption, and maintenance exemplify how agile teams of content experts can quickly deploy workplace well-being programming. By employing this strategy, ARROW helped expand the number of credentialed experts capable of disseminating and increasing access to needed interventions known to improve well-being across both health systems. Developing a cadre of expert trainers employed within organizations that support trainers in continuing to deliver programs serves as a sustainable approach to improving well-being among health care personnel. This trainer approach also overcomes barriers identified in previous research that indicate a lack of expert availability, which may inhibit effectiveness and threaten the fidelity of well-being training activities for health care personnel.[49] Often, leaders in health care systems emphasize personal resiliency among staff without alleviating organizational threats to professional quality of life, including compassion fatigue and burnout.[50] Fostering opportunities for health care workers to learn about mindfulness and other well-being approaches during work requires robust leadership support across various levels of the health system.

System-level changes that are capable of addressing the root causes of compassion fatigue require substantial capital and time to adapt and implement. As such, the rapid deployment of scalable and sustainable interventions to mitigate compassion fatigue and burnout-related symptoms among individuals working within health systems was, and continues to be, urgently needed as system-level changes simultaneously occur. For example, many trainers were able to deploy their new skills and incorporate training into their existing job roles as managers or residency program leaders, evident by the maintenance metrics. Although not paid to explicitly teach, leaders in the health systems supported new trainers by incorporating content into their existing responsibilities to disseminate knowledge across the organizations. Recent national research indicates that up to 40% of health care personnel rank having access to resilience training opportunities and dedicated time and places for meditation and reflection as "very important" to improving their well-being at work.[51] ARROW programming aligns with the priorities of such health care personnel while demonstrating that the training opportunities provided were linked to improvements in compassion fatigue when adopted by health systems.

Mitigating barriers for health care personnel to engage with experts trained in the delivery of mindfulness and compassion-based interventions increases exposure among health care personnel. The impact of programming can be enhanced by working with leaders and managers to identify personnel who could benefit most from mindfulness and compassion training and resources. The presence of mindfulness and compassion-based education alone will not reduce widespread burnout among health care personnel.[47,50–52] Rather, intentional, recurring programming delivered by credentialed experts that focuses on introducing and applying skills from mindfulness and compassion-based interventions is needed to discern any possible benefit with large-scale implementation of workplace programming. Frequent barriers to engagement with workplace programs include inconvenient locations, time constraints, disinterest, misalignment of health beliefs, and insufficient incentives.[53] Many of these barriers can be addressed by motivated and agile teams of experts embedded in workplaces but depend on leaders' support to increase workers' access and sustain positive results. ARROW overcame these bar-

riers by using a rapid quality improvement approach and working with health system partners to ensure equitable access to workplace well-being programming. ARROW programming was offered on rotating schedules to accommodate shift workers in locations that were convenient to maximize attendance and were delivered during work hours so that engagement was not intrusive to time outside of work. ARROW programming was well received, evidenced by the large proportion of trainees adopting, using, and sharing skills with colleagues in their workplaces. Collectively, this evaluation's findings indicate the ARROW program's impact and sustainability to bolster professional quality of life among health care personnel.

Limitations

Although designed to assess the impact and sustainability of processes and activities, program evaluations are limited in their generalizability and cannot ascertain causal effects of interventions. Therefore, improvements in outcomes following training are associative in nature. During this period of ARROW program implementation, rapid changes to staffing, employee resources, and occupational safety occurred across settings, which made it difficult to discern the impact of ARROW programming. Relatedly, the term *effectiveness* used in the context of this RE-AIM framework does not imply effect as that is limited to trials with controlled inclusion criteria and randomization. The individualized or unit-level focus of ARROW's programming may be most beneficial in workplaces where attention is also placed to address meaningful system-level changes that could be partly causative. Approximately 42.0% of trainees who completed the sProQOL at baseline provided feedback at the final evaluation time point (Supplemental Content). Despite long-term engagement in evaluation activities being limited, with reduced responses over time, the use of mixed-effects modeling enabled our team to discern group-level longitudinal trends.

Our inability to detect improvements in other metrics of professional quality of life may be due, in part, to the static nature of burnout and lack of sensitivity to change in outcome measures used.[48] Training activities focused on providing attendees with new skills to mitigate their somatic stress response and implement meditation practices into their daily routine; however, neither CRM nor CBCT were specifically designed to target health care work-related stressors, such as inequities in pay, understaffing, or workplace violence.[54] This, in addition to the high levels of resiliency seen in this sample, may explain, in part, the lack of changes in other professional quality of life measures. Despite these limitations, ARROW used best practices for implementing a train-the-trainer model, including widespread engagement activities that leverage interactive and multifaceted learning methods to identify potential trainers to ensure maximal and sustained impact on improving well-being among personnel.[55] The longitudinal nature of this evaluation builds on previous efforts to examine the role of mindfulness and compassion-based training on well-being.[56] Future rigorous research leveraging pragmatic study designs is needed to better elucidate the link between engagement in well-being programming and long-term outcomes among health care personnel.

CONCLUSION

The findings from this evaluation indicate the broad reach and sustained impact ARROW had across health systems, engaging health care personnel in workplace well-being programming to improve professional quality of life. ARROW serves as a template for other health systems striving to achieve progress toward the Quadruple Aim of supporting health care personnel to thrive in their workplace. Specifically, programs are needed that offer recurring access to evidenced-based approaches to bolster well-being and engage motivated advocates within organizations to lead training opportunities. Given the difficulty of implementing widespread organizational change to address professional quality of life, which often includes creating a culture conducive to individual well-being alongside system-level changes to support well-being, multilevel and multipronged implementation approaches are warranted. Future longitudinal efforts are needed to track overall engagement in workplace well-being programming, such as that offered by ARROW, and infuse expertise in well-being across organizations for a realized gain. This capacity-building work requires an initial investment in planning and ongoing evaluation to ensure the sustainability of programming, as was done with the ARROW program.

Conflicts of Interest. All authors report no conflicts of interest.
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SUPPLEMENTARY MATERIALS

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