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Mindfulness Toolkit to Combat Healthcare Worker Burnout

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Mindfulness Toolkit to Combat Healthcare Worker Burnout

The Triple Aim model of better outcomes, lower costs, and improved patient experiences have long been utilized by health systems across the country. Today, many health systems have transitioned to the newer Quadruple Aim. In the civilian sector, the fourth aim is the care of the healthcare worker (HCW) (Bodenheimer & Sinsky, 2014). The Military Health System's fourth aim is to improve readiness. These additions acknowledge a growing crisis amongst medical HCWs due to high levels of burnout and associated negative outcomes in large, military primary care clinics in South Texas. Burnout is often insidious and manifests over prolonged and repeated exposure to occupational stressors. Mindfulness-based training can enhance individual HCW's abilities to perceive and constructively respond to stresses endemic in the healthcare environment and has been shown to reduce the prevalence of burnout.

Problem Synthesis

Primary care providers (PCPs) have a disproportionate rate of burnout when compared to specialized providers. In a longitudinal cohort study of 252 providers, the burnout rate of PCPs was 53% (Willard-Grace et al., 2019). However, identifying burnout can be problematic due to the extensive variances of perceived occupational stressors across the population, making it impossible to identify one single causative factor. A survey of 523 HCWs at the Naval Medical Center San Diego found high emotional exhaustion (23.7%) and depersonalization (40%) identified administrative support as their primary source of frustration (Sargent et al., 2016). In another study, modern technology was recognized as a major cause of burnout, adding two additional hours documenting in the electronic health record for every one hour spent providing direct patient care (Rothenberger, 2017). PCPs with panels exceeding 1,200 patients experience burnout at a rate of 53% compared to 48% of providers who have empanelments considered at or below capacity (Paige et al., 2020). Panel size determinations are based on outdated recommendations, rather than data, and fail to take into account the number of patient visits

based on age or comorbidity, staff, facility size, clinic room availability, or leadership support (Paige et al., 2020).

In the context of influencing healthcare, burnout is a strong predictor of adverse physiological and psychological health conditions (Salvagioni et al., 2017). Burned-out providers suffer a spectrum of negative outcomes such as near-miss, poor patient outcomes, resignation, or even suicide. Suicide rates among providers compared to the general population are 3.8 times higher in men and 4.5 times higher in women (Rothenberger, 2017). Every affected provider also jeopardizes the patients for whom they care. PCP burnout leads to a decline in patient safety, including increased medical, diagnostic, and therapeutic errors, decreased quality assurance, and suboptimal diagnosis and treatment (Dewa et al., 2017; Garcia et al., 2019; Salyers et al., 2017).

Provider burnout increases healthcare costs through staff turnover, lost productivity, and the expense of decreased quality and medical errors. Replacing providers lost to turnover is estimated at 5% of an institution’s annual operating budget, with specific costs of recruiting a provider reaching 2 to 3 times their annual salary (Shanafelt & Noseworthy, 2017; Underdahl et al., 2018). Lost productivity results from turnover, increased ‘mental health days', and reductions in professional work effort (Garcia, et al., 2015; Shanafelt & Noseworthy, 2017). Burnout-related adverse events contribute to the billions in avoidable healthcare expenditures annually (Panagioti et al., 2018).

Relevance to Military Nursing

The Defense Health Agency's (DHA) strategic roadmap aims to integrate readiness and health to deliver the Quadruple Aim: increased readiness, better health, better care, and lower cost (DHA, 2019). Our project's goal, to address HCW self-reported levels of burnout, with an evidence-based multi-faceted mindfulness approach, parallels all four strategic aims of DHA. Aim one, readiness, encompasses initiatives to produce a ready medical force that can deploy worldwide and at a moment's notice. By implementing mindfulness training, HCWs are armed

with the tools to prevent and reduce the physiological and psychological burdens of burnout. These tools can be implemented on and off the battlefield. Aim two, better health, can be achieved through self-management with daily integration of mindfulness activities. This behavior is a shift from healthcare to health and supports making the healthy choice the easy choice (DHA, 2019). The last two aims, better care, and lower costs are influenced by HCWs who can perform effectively and efficiently. Efficiency is achieved through enhanced access to care by reducing HCW attrition and sick days. Effectiveness is allied with HCW's well-being. A healthy HCW is a more effective HCW and one who is less likely to unintentionally inflict patient harm.

Healthcare worker burnout is a healthcare epidemic that directly opposes DHA's mission. A considerable effort to ensure the well-being of HCWs is essential and engages each initiative of the quadruple aim. Implementing mindfulness training is a proactive and sustainable measure that supports DHA's vision of a "Ready Medical Force… Medically Ready Force" (DHA, 2019).

Clinical/System Question

Does the implementation of a multimodal mindfulness training program in the family practice clinics at Wilford Hall Ambulatory Surgical Center (WHASC) and Randolph AFB reduce rates of burnout among primary healthcare workers when measured on the Mini Z survey?

Literature Review of Solution

Our literature search was guided by the following PICO question: "Do family practice HCWs at a domestic military treatment facility (P), who participate in a mindfulness intervention (I) compared to no intervention (C) demonstrate a reduction in burnout scores (O)? PubMed, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, and PsychINFO databases were used to collect articles for review of the current literature. Search keywords for all databases were "provider" OR "providers" OR "physician" OR "physicians" OR

"physician's" OR "practitioner" OR "practitioners" OR "doctor" OR "doctors" AND "burnout" OR "burn-out" OR "burn-out" OR "stress" AND "intervention" OR "training" OR "program" AND "reduce" OR "reduction" OR "impact" OR "improve" AND "mindfulness" OR "mind-body." Results were then limited to the past ten years, English language, and peer-reviewed journals. Conference reviews, notes, or summaries were excluded. As of November of 2020, PubMed yielded 190 results, CINAHL 156 results, Embase 145, and PsychINFO 187 for a total of 678 articles. Additionally, articles that had been examined in several systematic reviews on the impact of mindfulness-based interventions on burnout and well-being among HCWs, discovered during preliminary literature searches, yielded an additional 85, for an overall total of 763 articles. 176 duplicates were removed leaving 587 for screening of title and abstracts (see Appendix A).

Title and abstract screening were done with inclusion criteria to include articles that evaluated a mindfulness-based intervention's effects on burnout. Exclusion criteria included articles that did not provide an assessment of an intervention, interventions focused on patient populations, interventions focused on organizational structure or processes, those with no burnout-related outcome measures, those that did not include non-student healthcare professionals as populations, and those examining solely in-person intervention curricula. Screening resulted in 22 articles being assessed for project eligibility. 13 articles were excluded for study populations that were too small, not having both pre- and post-intervention measurements, not assessing an intervention or measuring burnout, as a duplicate within a systematic review, and not being a published study. As a result, nine articles were included in our literature review (see Appendix B). Article appraisal was performed utilizing the Johns Hopkins Nursing Quality of Evidence-Based Practice tool to assign a level of evidence and quality rating (Dang & Dearholt, 2017). The quality levels of the selected articles include six studies at level IIB, one article at IIC, one article at IIIB, and one at V. The level V systematic review was

included to provide context for available mobile applications aimed at addressing burnout and related psychological burdens (Pospos et al., 2018).

A review of the literature revealed many interventions aimed at reducing or preventing burnout among PCPs, broadly divided into two approaches: organizational and individual. Evidence shows both approaches capable of significantly reducing burnout, whether utilized in concert or alone (De Simone et al., 2017). The lack of a universal solution means units facing high HCW burnout must choose solutions that fit their needs and constraints. While much research points to organization-level problems as the major contributors to physician distress, corresponding interventions require considerable investment. Consequently, the majority of burnout interventions research focuses on individual-directed approaches (Dyrbye et al., 2017).

Individually directed burnout interventions can occur in a variety of settings, and enhance professional competence, communication skills, and coping strategies (De Simone et al., 2019; Ahola et al., 2017). Individual interventions frequently involve mindfulness, which attempts to promote self-regulation and self-reflection by increasing HCW's awareness of their stress, emotions, and needs (Panagioti et al., 2018; Scheepers et al., 2020). Studies have measured positive effects on burnout for mindfulness interventions of all durations, frequencies, and settings (Aranda Auserón et al., 2018; Scheepers et al., 2020). Mindfulness-Based Stress Reduction (MBSR) is an 8-week program that has provided some of the most high-quality, and consistent effects data on the impact of mindfulness on HCP burnout (Kriakous et al., 2020). Additionally, a meta-analysis of RCTs identified that MBSR programs modified to fit HCW's schedules led to greater improvements in burnout-related effects such as stress, anxiety, and psychological distress (Spinelli et al., 2019). Several studies demonstrate the feasibility and potential effects of brief, self-paced, online or mobile-app based interventions on HCW stress and burnout (Kemper et al., 2017; Taylor et al., 2016; Roy et al., 2020; Montero-Marin et al., 2018; Kriakous et al., 2020).

Focus Areas

Considering a thorough review of the evidence, time limitations, site access, and organizational influence, we chose the most efficacious and feasible intervention for this project a multimodal, individual-directed, MBSR-based approach composed of brief, voluntary, biweekly in-person sessions accompanied by delivery of supporting resources (Ameli et al., 2020; Aranda et al., 2018; Kemper et al., 2017; Pflugeisen et al., 2016; Verweij et al. 2016). Session topics included: background discussion on the nature and impact of burnout on clinician well-being and patient care, use of the MBSR-based Mindfulness Coach app, meditation, gratitude journals, acupressure, and self-compassion practices. Supporting resources were made available via email, narrated PowerPoint, and QR code links. A multi-modal approach encompassing a variety of brief mindfulness-based topics offers maximum flexibility for primary care HCWs' busy schedules and varied personal preferences. One of the resources, the 'Mindfulness Coach" app, is a free, self-paced solution, designed by the VA's National Center for PTSD, which incorporates MBSR elements such as sitting meditation, mindful walking, and body scanning (Owen et al., 2018; Kriakous et al., 2020).

Organizing Framework

The Iowa Model guided our project implementation (see Appendix C). Recently revised, this model is widely used, flexible in application to clinical practice, and easily incorporated when working among interprofessional healthcare teams (Melnyk & Fineout-Overholt, 2018, p. 389). The Iowa Model provides a step-by-step visual guide to the stakeholders involved in this intervention, and a framework to evaluate possible alternative measures to address the issue. The "triggering issue," the first step of this model, was identified by the phase II site director: HCWs at WHASC and other local military primary care clinics had been suffering from and reporting high levels of stress and burnout. A common issue at clinics nationwide, an intervention to prevent or lessen burnout would be widely applicable. Based on this leadership-identified

problem, the results of the literature review revealed multiple practical and cost-effective solutions. In response, a toolkit consisting of a selection of evidence-based practices was developed to address and improve HCW's resiliency and decrease self-reported burnout. The project evaluated the effectiveness of this multimodal mindfulness-based toolkit and presented the findings, recommendations, and potential military impact to the stakeholders (leadership and HCW) for further sustainment and dissemination.

Project Design

General Approach

This project utilized pre/post-education data collection tools to assess the efficacy of the intervention. The post-intervention survey analysis obtained from the Mini Z (see Appendix D) data determined the effectiveness of the brief, multimodal, MBSR-based approach on burnout reduction among HCWs at WHASC and Randolph Air Force Base (RAFB) family medicine clinics. Participants were identified through volunteerism over three months.

The multimodal approach permitted convenient and accessible mindfulness training for participating HCWs. Each offering was designed to support team members to better manage professional and personal stressors while minimizing self-reported burnout. In presenting a variety of practices, we provided multiple points of access to reach a broad audience.

Setting and Population

WHASC, the Department of Defense's largest outpatient surgical center, houses 44 outpatient and clinical services clinics, with approximately 1,500 civilian and active duty HCWs who care for 55,000 active duty service members, retirees, and their beneficiaries (59th Medical Wing, n.d.). Randolph Clinic, according to Tricare (n.d), consists of eight buildings with 367 civilian and active duty HCWs who care for 25,000 active duty service members, retirees, and their beneficiaries. Between the two clinics, 90 staff members, which included active duty, civilian and contracted providers, nurses, technicians, administrative and ancillary staff, were

invited to voluntarily participate. A total of 63 staff attended the initial briefing which introduced the project and the Mindfulness Coach app. Subsequent short-session attendance ranged from 10 to 17 staff. The Randolph family clinic had attendance rates of 14- 42% of their introductory attendance while the WHASC clinic was 14 - 24% of their respective introductory session attendance.

Procedural Steps

In June 2021, we met with stakeholders, clinic leadership, and commanders of WHASC and Randolph clinics to discuss the submission of the project for IRB approval and the best way to distribute pre-surveys to assess HCW burnout. After receipt of IRB approval, in late August 2021, we introduced the project to the clinic staff. Project introductions encompassed participant recruitment, background on burnout and its effects, “Mindfulness Coach ” app familiarization and demonstration, and distribution and collection of the pre-intervention assessment containing the Mini Z survey as well as demographic questions (see Appendix E). We invited all participants to voluntarily download the “Mindfulness Coach” smartphone application and introduce our planned schedule of short-course activities during our introductory session. Participants could begin utilizing the mindfulness application immediately following registration. Introduction and short session schedules varied by site due to staff availability (see Appendix F).

From September to November 2021, the project team hosted short, voluntary, weekly to bi-weekly training programs utilizing a variety of mindfulness and wellness topics shown to decrease burnout (see Table 1). Alternate resources and reminders complemented training sessions, including reminder flyers distributed in common areas, huddle announcements, and weekly emails. Brief post-short session assessments were distributed to participants of the biweekly training sessions. Four weeks after the last brief intervention sessions, the project team distributed the post-intervention Mini Z survey. Efforts were made to target team members who had returned pre-intervention surveys, regardless of intervention participation. The

post-intervention assessment included questions assessing session participation, practice utilization, perceived effectiveness, and recommendations for future iterations (see Appendix G). Data collection ended the first week of January 2022. With the assistance of the WHASC statistician, Dr. Jusan Park, data analysis was completed by the end of January 2022. Results and implications of the findings, as well as recommendations for long-term sustainment, were presented to stakeholders, commanders, clinic leadership, and staff in April 2022.

Table 1

Intervention Session Content

Session	Duration	Content
Introductory	45 min	- Background on burnout - Intro to toolkit - Mindfulness Coach app - Habit building - Pre-intervention Assessment
Acupressure	15 min	- Background on acupressure - Guided self-practice - Habit building - Post-session Assessment
Meditation	15 min	- Background on meditation - Guided group practice - Habit building - Post-session Assessment
Gratitude	15 min	- Background on gratitude - Individual journaling practice - Habit building - Post-session Assessment
Self-Compassion	15 min	- Background on self-compassion - Guided group practice - Habit building - Post-session Assessment

Data Analysis Plan

The Wilcoxon Signed-Rank test was used to compare the difference between median pre and post-intervention measurements collected by the Mini Z. A 10-item survey measuring HCW burnout, job satisfaction, and workplace stress, the Mini Z contains a single-item burnout metric (question 3) that has been validated (Olson et al., 2019) against the MBI (Maslach et al., 1996), a 22- item questionnaire considered the gold-standard for measuring burnout (Schaufeli et al.,

2001). The Mini Z is designed for HCWs, to be brief, not imposing a significant time burden. Its internal consistency has been calculated with a Cronbach's alpha of 0.8 (Olson et al., 2019). The assessment tool containing the Mini Z survey also collected demographic and participation data. The Kruskal-Wallis test for comparing two groups and the Wilcoxon Rank Sum test for comparing more than two groups analyzed changes between gender, role, experience, age, location, and participation groups (see Appendix H).

In addition to the Mini Z survey, the post-intervention assessment included customized questions on intervention utilization and effectiveness. Participants were asked about session attendance, independent practice, recommended future topics, what elements should be retained, and how the intervention could be improved. Individual session participation and effectiveness data were collected by manually counting the biweekly participants and distributing brief non-identifying post-short session assessments to gauge session effectiveness, the likelihood of continued utilization of the presented practice, and recommendations for improvements (see Appendix I). Participation data were analyzed with descriptive statistics. Qualitative data will be analyzed for content themes and areas for future program implementation.

Barriers

Project implementation faced several barriers. The first barrier was gaining the trust of participating primary HCWs. Because the project team was newly attached to the two respective clinics, some viewed the team as unfamiliar, disregarded, and discredited stemming from a lack of their shared experiences. The strategy for overcoming this barrier was to maintain full transparency, acknowledge the team's novice status, and disclose intent with sincerity during the introductory sessions. Perceived time constraints were another barrier to participation due to burnt-out HCWs feeling overextended and viewing attendance as extra work (Ameli et al., 2020). The literature was presented to support and substantiate the many benefits of mindfulness across multiple domains, both personally and professionally. Explaining the “why” of the

project's intent was critical to impart a level of understanding to motivate potential participants to volunteer. The third barrier was meaningful participation. Mindfulness training requires personal gestalt to actively implement into one's daily routine and meaningful participation is largely driven by the self-initiation of the individual HCW (Montero-Marin, J. et al. 2018). Offering a flexible multi-modal toolkit maximized primary HCWs participation.

Dissemination and Sustainment

Results were formally presented to executive leaders and staff who expressed high interest in project dissemination utilizing multiple platforms. Through open dialogue, leaders requested the project team develop a brief mindfulness presentation for a resiliency training day, newcomers orientation, and consideration of future implementation in the Nurse Training Program. Additionally, the team was approached by a JBSA Air Force Personnel Center representative interested in coordinating the development of a mindfulness presentation into Continuing Nursing Education hours. The project team was selected to disseminate findings during the virtual poster presentation at Triservice Nursing Research Program.

Long-term sustainment was recommended based on the statistically significant results. The team recommended a larger-scale pilot study across multiple sites to observe for generalizability and confirm if the desired results can be replicated. Another priority is growing the toolkit to garner and sustain interests.

HIPAA

Transparency for data collection was disclosed pre-intervention. Surveyed data was obtained using the Mini Z at pre- and post-intervention intervals applying individual unique identifiers (UID). The purpose of implementing the UID was to protect the participant's privacy while maintaining the ability to compare pre- and post-intervention data. Personally identifiable information (PII) was limited to location, credentials, years of practice, age, and gender to facilitate descriptive statistics. The biweekly post-short session assessments and end-of-project

post-intervention assessment did not contain areas for PII and were intended solely to determine the program's qualitative effectiveness, areas for improvement, and participation. Meaningful use of aggregate data, balancing transparency and privacy was facilitated by implementing robust data governance and stewardship amongst the survey team. The de-identification of PII using individual UID was limited to the survey team. All data were stored on password-protected database documents using a common-access-card-enabled computer.

Business Case Analysis

The business case analysis discusses the opportunity and objectives of our solution as well as the benefits and predicted cost savings if implemented (see Appendix J). Our primary proposal is to implement an evidence-backed, multimodal mindfulness and resiliency training program. We plan to present a variety of mindfulness and wellness tools including the Mindfulness Coach app from the U.S. Department of Veterans Affairs, which has free access.

Replacing a single provider costs on average $220,000- $700,000 (Shanafelt & Noseworthy, 2017; Office of the Chief Human Capital Officer, 2020). It is estimated that, in a clinic of 30 providers and an annual turnover rate of 25% due to PCS, if attrition due to burnout was reduced by only one provider over 10 years there would be an annual cost-savings of $22,000. Research shows many other benefits to reducing burnout that have indirect cost savings including improved productivity, decreased medical and diagnostic errors, and increased patient and provider satisfaction. (Linzer et al., 2015, Dewa et al., 2017). Overall, a multimodal, bi-weekly mindfulness training program administered to all HCWs is cost-effective, research-backed, convenient, flexible, sustainable, and widely applicable.

Project Results

Introductory sessions and pre-intervention data collection were scheduled at Randolph Clinic and WHASC during the last week of August and the first week of September respectively, to coordinate with local training/administrative days to maximize attendance. Due to a

scheduling conflict, the introductory session at Randolph Clinic was postponed to the last week of September, requiring an acceleration of the subsequent short session timeline for that site. Brief sessions at Randolph were rolled out weekly except for a 2-week gap between the 2nd and 3rd sessions, with the last session occurring the 1st week of November. WHASC brief session topics were introduced every other week with the intention of offering morning, lunch-hour, and end-of-day sessions. Due to minimal attendance at the lunch-hour and end-of-day sessions, the decision was made to offer only morning sessions.

Another scheduling conflict led to the 2nd and 4th session topics being offered on weeks when no administrative time was allotted to clinic staff. These sessions proceeded with attendance as available, but repeat sessions were offered during the following weeks' administrative time. Therefore, the acupressure and gratitude sessions were presented once, and the meditation and self-compassion sessions, twice. The last brief session at WHASC occurred during the last week of November. Additionally, following the in-person presentation of each introductory and brief session topics, a video link to a narrated version of the slideshow presentation, including brief practice sessions if applicable, was emailed to the entire staff of each location.

Post-intervention data collection began the first week of December to provide an opportunity for individual practice of the final session topic and to avoid holiday scheduling conflicts during the last weeks of November. At both Randolph and WHASC sites, post-intervention data were collected at an in-person staff meeting with surveys requesting the following: participant name, demographics, the Mini Z survey, session and practice participation, and sustainment recommendations. Additionally, an email with the post-intervention survey attached was sent to all staff at both clinics to solicit those unable to attend in person. Collected surveys which omitted names were excluded from data analysis.

Table 2

Descriptive Statistics

Location	Frequency	Percent
Randolph Clinic	13	35.14
WHASC	24	64.86
Sex	Frequency	Percent
Male	11	29.73
Female	26	70.27
Age	Frequency	Percent
18-30	9	24.32
31-40	12	32.43
41-50	11	29.73
50+	5	13.51
Role	Frequency	Percent
MD	4	10.81
DO	2	5.41
NP	5	13.51
PA	8	21.62
RN	9	24.32
LPN	1	2.70
Tech	7	18.92
Admin	1	2.70
Role Experience (years)	Frequency	Percent
< 1	4	10.81
1 5	16	43.24
6 – 10	6	16.22
11 – 15	7	18.92
> 15	4	10.81
Prior Stress Reducing Activities		Frequency
Meditation		7
Prayer		19
Exercise		20
Yoga		2
Breath Awareness		9

# of Sessions Attended	Frequency	Percent
0	12	32.43
1	12	32.43
2	2	5.41
3	6	16.22
4	2	5.41
5	2	5.41
6	1	2.70
Session Topic Attended	Frequency	
Acupressure	9	
Meditation	21	
Self-Compassion	10	
Gratitude	10	
Independent Practice	Frequency	Percent
Yes	17	48.57
No	18	51.43
Missing	2	
Frequency of Practice (per week)	Frequency	Percent
0	7	28
1	4	16
2	6	24
3	5	20
5	1	4
7	2	8
Missing	12	
App Use	Frequency	Percent
Yes	6	16.67
No	30	83.33
Missing	1	
App Non-Use Rationale	Frequency	Percent
Another app	3	12
No time	6	24
Prefer group led	3	12
Didn't want to download	5	20
Other	8	32

Participants that had completed pre-intervention surveys but either did not complete a post-intervention survey or omitted their names were solicited via email and face-to-face to complete the post-intervention survey. Data collection was completed at the end of the first week of January. A total of 37 participants completed pre- and post-intervention surveys and were

included in the data analysis. Demographic and self-reported intervention participation data is shown in Table 2.

Analysis of Results

Pairwise deletion method was used for analysis. 37 respondents completed both pre- and post-assessment Mini Z items except for questions 3 and 10. The Wilcoxon Signed-Rank test was performed to examine for changes after the intervention. To examine whether there were any significant group differences in the changes in Mini Z questions, Wilcoxon Rank Sum Test (two groups) or the Kruskal-Wallis test (more than two groups) was performed. Significance was set to $p < 0.05$. Statistical analyses were performed using SAS version 9.4 (Statistical Analysis Software, Cary, NC).

When analyzing the paired pre-post changes for the entire group of respondents, two questions showed statistically significant differences (see Table 3). Question 3 revealed a decrease in self-reported burnout ($p = 0.046$), and question 10, an increase in self-reported EHR proficiency ($p = 0.018$). Several group differences in pre-post changes were also noted. Among the participation group (see Table 4), defined as those who reported attending at least one 15-minute short session, use of the mindfulness app, or individually practicing meditation after the introductory session without a prior history of meditation identified as a pre-existing stress-reducing activity on the pre-survey, significant decreases in question 2, self-reported stress ($p = 0.018$), and burnout levels ($p = 0.045$) were noted. Additionally, this group reported a significant increase in EHR proficiency ($p = 0.033$). No significant changes were noted in those who did not participate beyond attending the introductory session. Two significant differences noted between our locations included a greater decrease in reported control over workload among WHASC respondents ($p = 0.023$) and a greater increase in reported alignment between personal professional values and those of leadership at Randolph clinic respondents ($p = 0.016$).

Analysis of changes between other groupings including role, gender, age, and years of practice yielded no significant differences.

Table 3

Pre-Post Change

Variable	N	Pre			Post			Change (Post - Pre)			p value
		Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	
Q3	32	3	2	3	2	2	3	0	-1	0	0.046
Q10	36	4	3	5	4	4	5	0	0	1	0.018

Table 4

Pre-Post Changes - Participation Group Only

Variable	N	Pre			Post			Change (Post - Pre)			P value
		Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	
Q2	27	4	3	4	3	2	4	0	-1	0	0.018
Q3	23	3	2	3	2	2	2	0	-1	0	0.045
Q10	27	4	3	5	4	4	5	0	0	1	0.033

Discussion

Analysis of the data indicates that before the intervention, the majority of respondents of both clinics reported one or more symptoms of burnout (see Table 3). This echoes the prevalence of burnout noted previously in primary care settings (Willard-Grace et al., 2019). Analysis of pre-post intervention changes shows that mindfulness practice can significantly decrease self-reported burnout. Additionally, the significant differences found only in the participation

group suggest that as little as 15 minutes of mindfulness-based practice can reduce both stress and burnout, as well as potentially increase efficiency (see Table 4).

Organization Impact

This multimodal approach to mindfulness is a plug-and-play intervention. The interventions were selected based on their strength in literature and leadership support to garner robust participation. Data analysis demonstrated statistically significant burnout reduction for participants who engaged in mindful practice. This finding corroborates the evidence linking mindfulness training and frequent skill utilization, which in turn is associated with stress and burnout reduction (Kemper et al., 2017). The respondents who did not participate beyond the introductory sessions act as a passive control group. These non-participants showed no significant reduction in burnout on the Mini Z. The studies of MBSR generally lack a control or placebo group, which represents an area for future study (Scheepers et al., 2020).

Formal and informal participant feedback was collected for recommendations on sustainment, improvement, and future topics of interest. Each session was largely well-received by participants. Excitement was built up among the participants in anticipation of receiving a gratitude journal in upcoming sessions. Participants reported continued practice in their gratitude journal well after the intervention. Additionally, participants detailed that guided practice as a group was a format they would recommend sustaining. Other sustainment comments included the continuation of email for communication, team enthusiasm, being realistic in our goals as a group, and that the short sessions were excellent given the time limits. Suggested improvements included offering the intervention to ancillary clinics and patients, more visual reminders for upcoming sessions, a more thorough walk-through on mindfulness app features, adding more sessions, and including team building events. Topics of interest for future presentations included relaxation techniques, morale activities, effective leadership, self-care, and more on stress reduction.

Given the small sample size, time limitations, and the undertaking of a vastly endemic issue, there was a shared feeling of uncertainty regarding our impact during the pre-intervention phase. Our team was gratified with the results of the data analysis. Additionally, our literature review suggested that organizational factors largely influence burnout (Sargent et al., 2016). This perspective is supported, at least anecdotally, by comments from the post-intervention assessment feedback where participants requested team building events, morale activities, and topics on effective leadership.

Implications to Practice & Policy

The results of our project have demonstrated the positive role that mindfulness practice has in combating burnout among primary care HCWs. Brief short mindfulness sessions are not only effective, but free, readily available, easily implemented, and adaptive to any environment. The potential impact of such an accessible and adaptive tool makes this ideal for Soldiers, Sailors, Airmen, and Civilians who are repeatedly challenged to adapt to various environments around the world during peacetime, wars, and now pandemics. The prevalence of burnout has been intensified by the COVID pandemic with 18% of HCWs quitting their jobs, 31% considering leaving, and 79% of HCWs reporting that the national worker shortage has affected them and their place of employment (Galvin, 2021). More than ever, it is essential that leaders seek out a variety of innovative ways to address burnout and support HCWs.

Future Directions for Research and Practice

Our team envisions the future landscape across the DoD as actively engaged in the fight against burnout and well saturated with the mindfulness tools to do so. A crucial aspect of successful adoption is the designation of teams or champions to ensure consistent delivery of the intervention and to facilitate ongoing monitoring. We recommend larger-scale pilot studies, spanning multiple sites, with a more diversified population pool, to confirm replication of results to establish generalizability. There are multiple opportunities to support long-term sustainment

efforts including mindfulness introduction during hospital orientation, practice at quarterly training, and integration into curricula such as the Nurse Transition Program. Growing the toolkit with additional practices to garner and sustain interest is another priority. In terms of future research, we recommend a study to identify strategies to increase participation among the same population with the secondary aim of analyzing the dose effect. A noteworthy future study is the exploration of institutional barriers and burnout by the USUHS class of 2024, with whom we have already collaborated.

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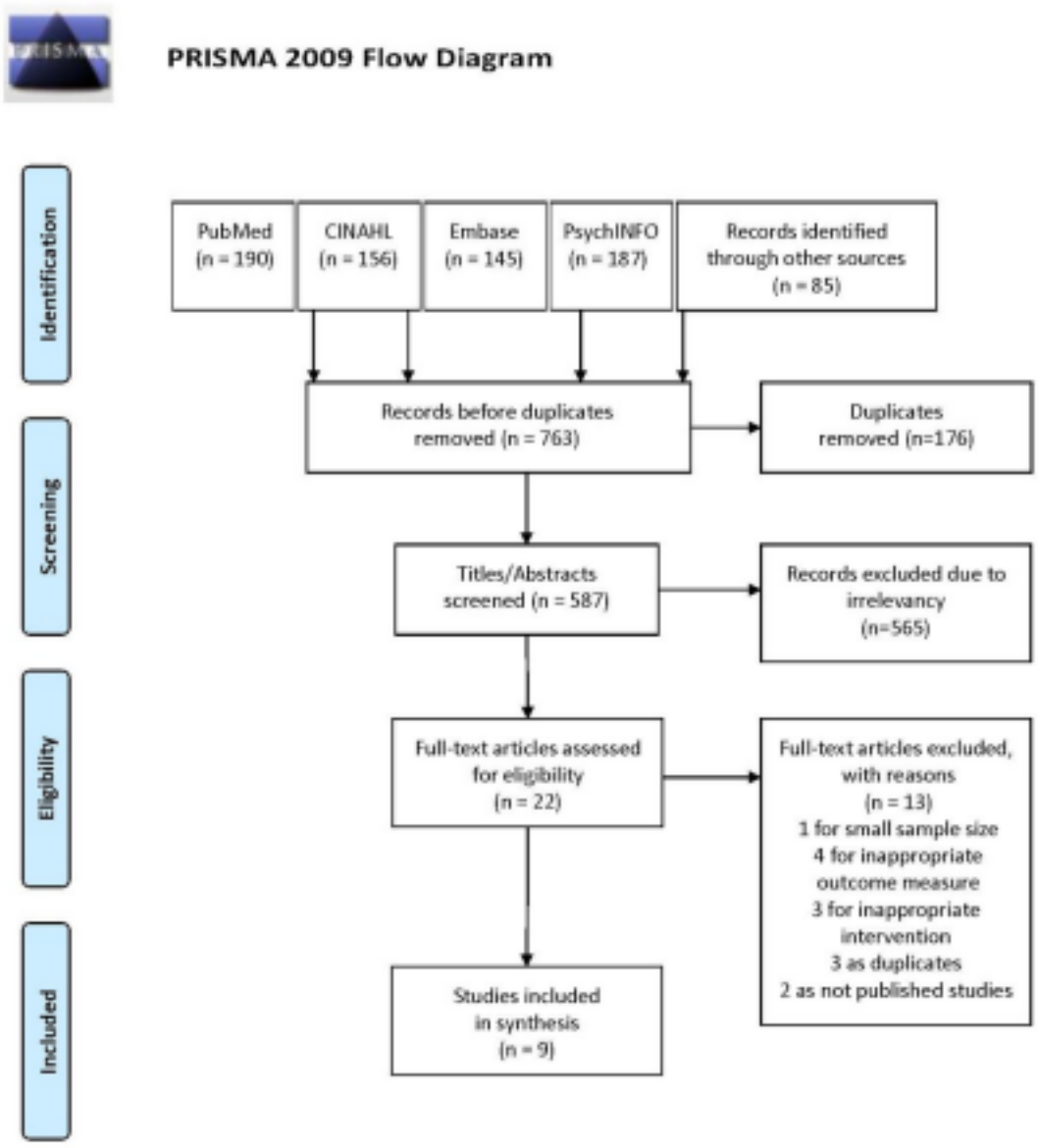
Appendix A



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Appendix B

Author Name (Publication Year)	Study Purpose/Aims	Research Questions/ Hypotheses (IF different from/ specifically described separately from study purpose & aims)	Study Design	Total Sample Size (How many initially, how many at final analysis?)	Sampling Plan	Independent Variables AND LEVEL OF MEASUREMENT	Dependent Variables AND LEVEL OF MEASUREMENT	Statistical Analyses - what tests were used for which research questions?	Results	Strengths (how promoted internal/external validity)	Weaknesses (biases; poorly controlled threats to internal/external validity)	Level of Evidence
Kemper, K. et al. (2017)	Explore longer term impact of online training in mind body skills. Test and expand conceptual model for training.	1. Do participants in online mind-body skills training report any changes in their personal self-care or professional behavior one year later? 2. Is there a relationship between the number of hours of training and subsequent frequency of mind-body practice year later? 3. Is there a relationship between the frequency of mind body practice and stress, burnout, and missing work, and mindfulness, resilience, and confidence in providing compassionate care?	Non-experimental	149	Inclusion Criteria: First 10% who completed anonymous online post-training survey between December 1, 2015 and January 31, 2016.	Variable: Number of completed Mind-body Skills Training Modules completed (0-12) Type: Process measure Level of Measurement: Ratio	Variables: (Type: Outcome) 1. Self-report of changes to a) self-care, or b) care of others (yes/no) Level of Measurement: Nominal 2. Frequency (days) of mind-body practice in past 30 days (0-30) Level of Measurement: Ratio 3. Cohen's Perceived Stress Scale Level of Measure: Ordinal (Likert scales) 4. Mayo Clinic Physician Well-Being Index (PWBI) Level of Measurement: Ordinal 5. Number days missed from work in past 30 days (non-holiday/non-vacation) Level of Measurement: Ratio 6. Cognitive and Affective Mindfulness Scale Revised Level of Measurement: Ordinal 7. Smith's Brief Resilience Scale Level of Measurement: Ordinal 8. Confidence in providing Compassionate Care Scale Level of Measurement: Ordinal	Descriptive statistics. Fisher's exact tests for associations between demographic or professional characteristics and study outcomes. Spearman's rank-order test for correlations.	1. 79% reported changes in self-care. 71% reported changes in the care of others. 2. Increasing number of hours of training significantly associated with practicing mind-body skills more frequently. 2. Increasing practice frequency was associated with less stress and burnout, which were associated with missing less work. 3. Greater practice frequency associated with improvements in stress, mindfulness, and resilience, which were associated with increased confidence in providing compassionate care.	Reliability: Sample size (10% of sample population) was stated as adequate, though no power analysis specifically referenced. Rationale for statistical tool selection was transparent given normality issues.	Applicability: Single site limits generalizability. Validity: No baseline data cannot detect changes over time. Possible self-selection bias related to non-randomized sampling structure (first 10%) and self-selected dose. No intermediate data (6-9 months after training) Statistically significant correlations do not prove causation. Use of self-report measures.	IIIB
Kriakous, S. et al. (2020)	Examine quantitative studies that investigated the effectiveness of MBSR on the psychological functioning of HCPs. Examine factors which may have influenced MBSR treatment outcomes.	N/A	Systematic Review	1042 records screened to 30 studies included	(Psych Info, Medline and Web of Science) Search terms related to the intervention (mindfulness) and the participant group (healthcare professionals/health care professionals/healthcare workers/health care worker). Inclusion/exclusion criteria: quantitative or mixed method, controlled/uncontrolled, English, peer-reviewed, population HCPs (excluding students and in-training), MBSR or modified MBSR interventions (excluding additional psychoeducational components)	Variable: Participation in MBSR or MBSR-based intervention Type: Process measure Level of Measurement: Nominal	Variables (varied per study): (Type: Outcome) 1. anxiety 2. depression 3. stress 4. resilience 5. burnout 6. self-compassion 7. mental well-being 8. psychological distress 9. mindfulness	QATQS quality assessment tool utilized.	6 studies were assessed as 'moderate to strong', five studies as 'moderate' and nineteen studies as 'weak'. Was effective in reducing HCP anxiety, depression and stress, and increasing mindfulness and self-compassion. Abbreviated programs as effective as traditional 8-week programs, especially briefer, well-organized programs embedded into HCP working days. MBSR not as effective in reducing burnout or improving resilience amongst HCPs. Burnout and resilience may be viewed as traits rather than states, potentially taking longer to improve, requiring the longer-term implementation of healthier coping strategies.	Systematic quality assessment tool.	Existing studies of generally poor quality related to self-selected samples, lack of controlled studies and randomization, lack of blinding and overrepresentation of Caucasian women.	IIB
Montero-Marin, J. et al. (2018)	Determine if a brief blended online intervention could be effective at enhancing the wellbeing of general practitioners.	Does a brief blended web-based mindfulness intervention enhance the well-being of general practitioners?	Open uncontrolled trial with pre-post-measurements	290 Spanish GPs were recruited from the University of Alcala de Henares, Madrid by email. 58(20.1%) completed at least 1 online practice per week.	First 290 subjects interested were included in the study	Variable: Hours of MBI training completed Type: Process measure Level of Measurement: Nominal	Variables: (Type: Outcome) 1. Negative Affect Schedule of PANAS(PANAS negative) Level of Measurement: Ordinal 2. Mindful Attention Awareness Scale (MAAS) Level of Measurement: Ordinal 3. Connor-Davidson Resilience Scale(CDRISC) Level of Measurement: Ordinal 4. Burnout Clinical Subtype Questionnaire (BCSQ12) Level of Measurement: Ordinal	Mixed-effects linear regression: to assess PANAS based on time spent on mindfulness Cohen's d: Effect sizes Linear Regression: levels of compliance	1. Significant improvement of main outcome, PANAS-positive, in those participants who completed 2 or more weekly practices 2. Significant improvements in MAAS in participants who completed 2 or more weekly practices. 3. No significant improvements in those who only did 1 weekly practice in PANAS-negative, CDRISC or burnout sub-types.	Applicability: Large sample size of appropriate population. recommended as feasible	Applicability: Used a definition of mindfulness that is exclusively restricted to attentional processes. Self-selection bias and small geographical area. Designed to help anyone with moderate to severe anxiety. Unable to raise resilience or modify burnout. Validity: Poor compliance/ high attrition. No long term follows up though 6 and 12 months follow up is recommended.	IIB

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Nguyen 2020	This study examines the feasibility and effectiveness of a Mind-Body Skills training (MBST) curriculum in promoting physician compassion and mindfulness, and reducing stress and burnout	What is the feasibility and effectiveness of a 7-hour mixed methods MBST curriculum on promoting physician compassion and mindfulness and reducing stress and burnout?	Pre/post assessment prospective cohort study	66 initial. 50 completed pre- and post-test questionnaires.	Inclusion Crit: Voluntary sample from the faculty, fellows and residents from the ER, Internal med, and surgery at Ohio University Wexner Medical Center. Recruited by e-mail.	Variable: Hours of MBST curriculum completed - no unit or tool of measure mentioned Type: Process Level of Measurement: Nominal	Variables: (Type: Outcome) 1. Self-report changes to emotional exhaustion (EE) and Depersonalization (DP). Level of Measurement: Ratio 2. Cognitive and Affective Mindfulness Scale Revised (CAMS-R) Level of Measurement: Ordinal 3. Self-Compassion scale Level of Measure: Ordinal (Likert scales) 4. Cal, Compassionate Care scale (CCCS) Level of Measurement: Ratio 5. Perceived Stress Scale (PSS) Level of Measurement: Ordinal 6. Mayo Clinic Physician Well-Being Index (PWBI)	ANOVA was used to test differences within groups (gender, debt level, profession, post-graduate level, faculty level, and average work hours per week) Bonferroni correction was used to account for multiple comparisons with desired significance level of .05 translated into individual tests each using a p value threshold of .05/10 = 0.005. Linear regression was used to assess for intervention dose response, and Pearson's correlation was used to identify the association between primary and secondary outcome measures	1. Participants who completed at least one hour of training had significant mean differences in pre- and post-intervention scores for all categories. 2. Participants who had zero hours of intervention had no significant change. 3. Number of modules completed explained a significant proportion of variance in CCCS scores. 4. Within 3 months significant improvements were observed in participants confidence in providing compassionate care and reductions in burnout and EE after 1 hour of training.	Reliability: Studies used were previously validated. All questionnaires had Cronbach's alpha of >0.80 indicating internal consistency	Applicability: Small sample size. Reliability: Single academic institution, possible self selection bias with voluntary sample. Reliant on self-reports of primary and secondary outcome measures in non-controlled setting.	IIB
Pospos, S. et al. (2018)	Assisting healthcare organizations in selecting the best web-based burnout and suicide prevention programs for their constituents, with ultimate goal: to provide transportable resources to medical programs w/the potential to improve well-being, quality of life, job satisfaction, and mental health.	What online and app-based tools are available and effective at reducing burnout, depression and suicide in healthcare students and professionals?	Systematic review of literature: 1. PubMed 2. Online search for online tools and apps applying American Psychiatric Association app evaluation framework	Initial: 14 web-based tools, 22 mobile apps Final: 7 web-based/apps	Selected tools from category of distress: 1. Stress 2. Burnout 3. Depression 4. Suicide prevention	Variable: Online and app-based tools Type: Process Level of Measurement: N/A	Variable: Proposed effects at reducing levels of stress, burnout, depression, suicide.	None listed	7 web-based or mobile apps were chosen and described that had features that could satisfy the unique needs of healthcare workers	None listed	Only publicly available resources searched, English only, choice of categories was not objective. Apps and web programs may have confidentiality concerns. Mobile and web-based tech as expanding and changing rapidly and new tools may have emerged since the research was complete	V
Roy, A. et al. (20	To determine if there's is a relationship between physician stress and anxiety.	Can an app-based mindfulness training reduce anxiety in physicians and explore if anxiety and burnout are correlated?	Nonrandomized noncontrolled study with pre-post measurements.	57 met eligibility criteria 44 registered and downloaded the app 34 was included in the final analysis.	Emailed physicians at University of Massachusetts Memorial Health Care System (N=1100) to participate. Participants were offered $25 for completion of f/u survey.	Variable: 30-day mindfulness app training Type: Process measure Level of Measurement: Nominal	Variable: % difference pre-post intervention scores Description: Questionnaires included: participant satisfaction, Generalized Anxiety Disorder-7 (GAD-7), 2 single point items from the MBI (EE and cynicism) Type: Outcome measure Level of measurement: Ordinal	ANOVA was used to analyze the overall change in GAD-7 scores and the MBI scores. Post hoc analyses between the individual time points were analyzed using Wilcoxon signed-rank test and were corrected for multiple comparisons (Bonferroni) The relationship between GAD-7 and the single-item MBI scores was evaluated using Spearman's correlation coefficient	1. Significant improvement was noted across 3 time points for GAD-7, EE, and cynicism. 2. Participants demonstrated 57% reduction in GAD-7 scores at 3 months, 50% reduction in cynicism at 3 months and 20% EE reduction at 3 months	Validity: Used validated tools for measuring anxiety and burnout. Presented clear CONSORT diagram Reliability: Authors report significant effect size and appropriate statistical tests used.	Validity: High attrition Reliability: Applicability: Small sample size, self-selected sample, single intervention arm, and limited geographic area.	IIB

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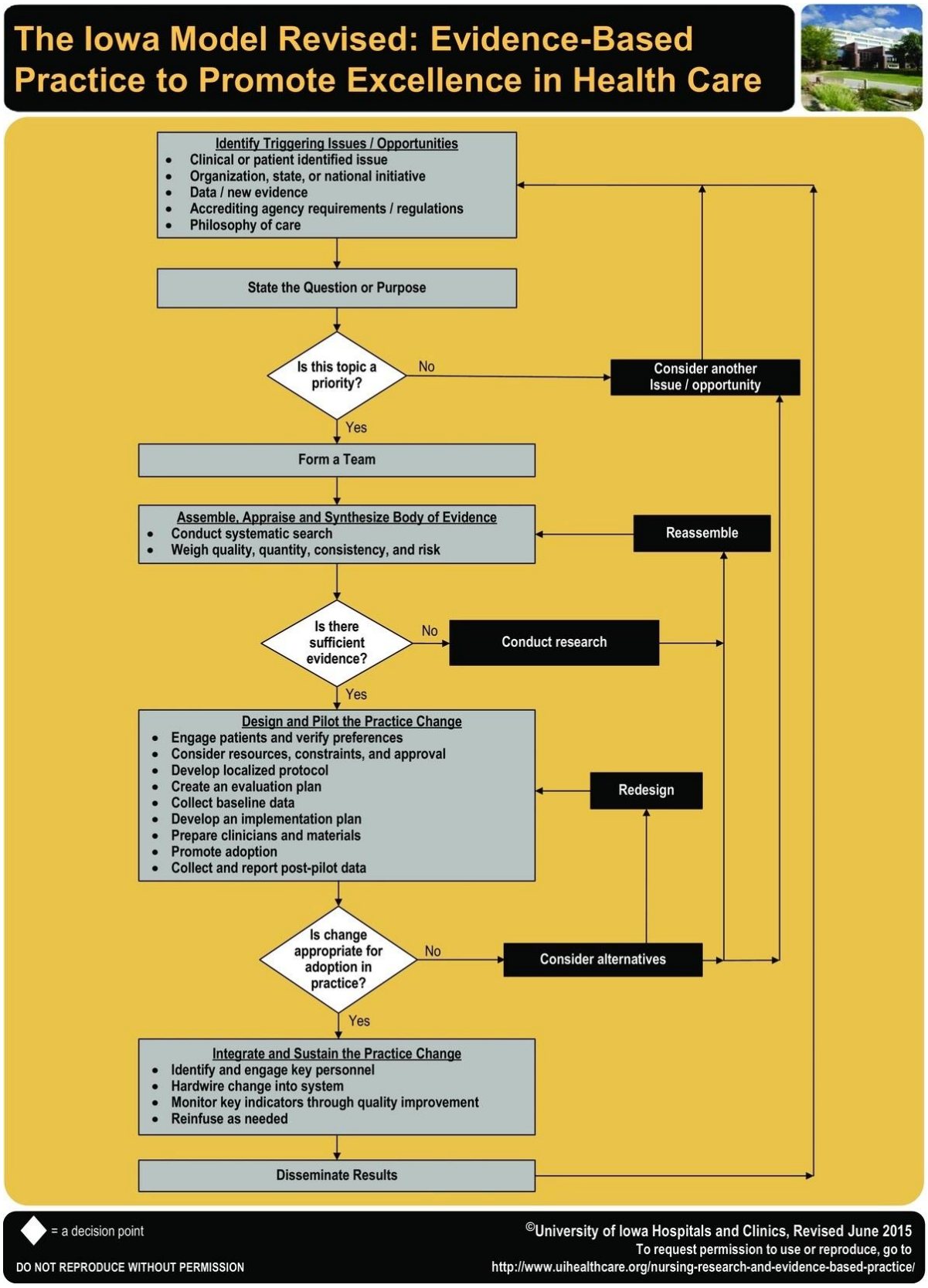
Scheepers, R. et al. (2020)	To review the impacts of MBI on well-being and performance in residents and specialist.	Can burnout and wellbeing of doctors be improved by mindfulness-based interventions?	PRISMA systematic literature search include 1. PubMed and PsychINFO from inception to 9MAY2018 2. Assess study quality using the Medical Education Research Study Quality Instrument (MERSQI)	934 abstracts screened with 79 selected for full-text review. Resulted in inclusion of 24 studies. (7 RCTs, 3 non-randomized controlled trials, 12 pre-post, 2 qualitative interview).	Inclusion Criteria: 1. Must examine mindfulness intervention effects on well-being and performance. 2. Interventions must adopt mindfulness approach to train "purpose, non-judgmental attention to present experience, thoughts, feelings". 3. Main outcomes must report on doctor's well-being or performance. Exclusion Criteria: 1. Non-empirical articles 2.Articles in other languages than English or Dutch.	Variable: Mindfulness intervention in group-based and web-based. Description: Pre-intervention questionnaires targeted well-being domains: psychological, occupational, physical and self-report. Type: Process measure. Level of measurement: Nominal	Variable: % difference of positive and negative effects. Description: Post- intervention scores compared against baseline scores. Type: Outcome measure Level of measurement: Interval. All studies measured the outcomes immediately after the intervention. 4 studies measured again at 2 or 4 months.	Group-based: ANOVA, Fishers exact, student t-test, paired t-test, multi-level regression model, qualitative evaluation, Chi-square, generalized estimating equations, Wilcoxen, Pearsons correlation, Spearsman rank, Memars test, Bonferroni post hoc comparisons Web-based: Multi-level mixed effects linear regression, paired t-tests, descriptive analyses, mixed level models	Not all studies reported the same effects on well-being or performance Web-based intervention (smartphone or internet) showed mixed effects on well-being. Negative indicators of well-being (negative effect, burnout) were not affected, but positive indications (positive effect) were reported. -Taylor, 2016. 33 pediatric residents. Maslach Burnout Inventory showed no effect -Wen, 2017. 30 general surgery, anesthesia, OBGYN. Positive affect increased with increased use of the smartphone app (effect 0.31, 95% CI 0.03-0.57) - Montero-Marin, 2017. 290 general practitioners. PANAS questionnaire showed improved positive effects. Burnout Clinical Subtype Questionnaire showed no effects. Group-based intervention consistently showed positive effects on well-being or performance, including occupational domains (burnout, work empowerments, dedication, satisfaction).	Internal Validity: Systematic search strategy using PRISMA and independent review. Reliability: All studies contained at lease 1:5 mindfulness elements: 1. Mindfulness theory 2. Didactic 3. Self-awareness 4. Feeling & body sensation 5. Meditation	Internal Validity: Indicators of instrument validity were inconsistently reported in studies Quality: Studies were highly variable in strength Selection Bias: RCTs employed waitlist or passive control conditions instead of placebo, with voluntary response, could have resulted in bias	IIB
Spinelli C. et al. (2019)	To quantify the effectiveness of mindfulness-based interventions on distress, well-being, physical health, and performance in HCPs and HCP in training.	N/A	PRISMA meta-analysis literature search included: PsychINFO, PubMed, Medline and Proquest Dissertation and Theses	38 articles, 2505 participants -75.88% female -Mean age 19-50 -Population medical students, residents, nurses, counselors, psychologist, mixed specialties	Inclusion Criteria: 1. Peer reviewed articles and dissertations 2. Solely HCPs and HCP in training 3. Intervention primarily meditation or mindfulness 4. At least one quantitative measure at baseline and post intervention 5. Must be RCT	Variable: Mindfulness interventions of MBSR (n=9), modified MBSR (n=11), other mindfulness (n=9), meditation (n=12) Description: Duration ranged from 2.5 to 70 hours and delivered by trained professionals, students, and by electronic Type: Process measure. Level of measurement: Nominal	Variable: % difference Description: Post- intervention scores compared against baseline scores. Type: Outcome measure Level of measurement: Interval.	Comprehensive Meta-Analysis Version 3.070 to compute data. Random effects model was used to calculate the mean effect size by pooling individual effects sized for each outcome measure Hedges g, 95% and p value computed for all studies. I2 statistics to examine heterogeneity.	Main analysis showed that interventions have small to moderate effectiveness at post intervention and follow up. Grouped analyses: Largest effects found with HCP (Hedge's g = 0.52; 95% CI [0.34, 0.70). MBRS intervention (Hedge's g = 0.52, 95% CI [0.17, 0.76]) Inactive controls (Hedge's g = 0.36, 95% CI [0.28, 0.45]) Electronic delivery produced the largest effects on outcome (Hedge's g = 0.39, 95% CI [0.17, 0.61]. MBSR-Modified studies had shorter intervention duration and made changes to suit the settings. MBSR-M had larger effects on stress, anxiety, psychological distress, mindfulness with low heterogeneity compared to the standard MBSR interventions.	Internal Validity: PRISMA and standardized protocol to ensure internal consistency Attrition: Low External Validity: Assessed publication bias using Cochrane Handbook	Internal Validity: Moderate to high heterogeneity on some study outcomes due to possible inconsistency in study measures and variation of intervention designs. Population Homogeneity: 78% female Performance Bias: Some studies did not quantify or qualify mindfulness practice, while others found participants generally did less than recommended and reduced their practice over time.	IIB

Author Name (Publication Year)	Study Purpose/Aims	Research Questions/ Hypotheses (IF different from/ specifically described separately from study purpose & aims)	Study Design	Total Sample Size (How many initially, how many at final analysis?)	Sampling Plan	Independent Variables AND LEVEL OF MEASUREMENT	Dependent Variables AND LEVEL OF MEASUREMENT	Statistical Analyses - what tests were used for which research questions?	Results	Strengths (how promoted internal/external validity)	Weaknesses (biases; poorly controlled threats to internal/external validity)	Level of Evidence
Taylor, M. et al. (2016)	Examine the feasibility and potential impact of a brief mindfulness intervention using a free smartphone application on a resident population.	N/A	Pilot study - pre/post intervention	33 enrolled, 31 completed initial, 11 completed follow-up survey	Thirty-three residents were recruited from the pediatric residency program at the University of Chicago on a volunteer basis.	Variable: Completion of 10-day program of mindfulness meditation using free smartphone application. Type: Process measure Level of Measurement: Nominal	Variables: (Type: Outcome) 1. Maslach Burnout Inventory (MBI) Level of Measurement: Ordinal 2. Mindfulness Attention Awareness Scale Level of Measurement: Ordinal 3. Survey on perception of mindfulness Level of Measurement: Nominal	Paired t-test for statistical analysis of pre/post data.	Increased percentage of residents perceived mindfulness as a useful intervention for patients, statistically significant increase in the number of residents who planned to discuss mindfulness as a therapeutic option for their patients. No statistically significant change in aMBI pre/post scores.	Minimal due to pilot nature of study.	Small sample size, selection bias because participants were volunteers. Participation information was self-reported and not objectively confirmed by the researchers.	IIC

Appendix C


The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care
Identify Triggering Issues / Opportunities
Clinical or patient identified issue
Organization, state, or national initiative
Data / new evidence
Accrediting agency requirements / regulations
Philosophy of care
State the Question or Purpose
Is this topic a priority?
No
Consider another Issue / opportunity
Yes
Form a Team
Assemble, Appraise and Synthesize Body of Evidence
Conduct systematic search
Weigh quality, quantity, consistency, and risk
Reassemble
Is there sufficient evidence?
No
Conduct research
Yes
Design and Pilot the Practice Change
Engage patients and verify preferences
Consider resources, constraints, and approval
Develop localized protocol
Create an evaluation plan
Collect baseline data
Develop an implementation plan
Prepare clinicians and materials
Promote adoption
Collect and report post-pilot data
Redesign
Is change appropriate for adoption in practice?
No
Consider alternatives
Yes
Integrate and Sustain the Practice Change
Identify and engage key personnel
Hardwire change into system
Monitor key indicators through quality improvement
Reinfuse as needed
Disseminate Results
= a decision point
DO NOT REPRODUCE WITHOUT PERMISSION
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Appendix D

Mini Z burnout survey					
For questions 1-10, please choose the answer that best describes your experience with burnout. Please circle your answer.					
1. Overall, I am satisfied with my current job.	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
2. I feel a great deal of stress because of my job.	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly agree
3. Using your own definition of "burnout" please circle the answer below. a. I enjoy my work. I have no symptoms of burnout. b. I am under stress, and don't always have as much energy as I did, but I don't feel burned out. c. I am definitely burning out and have one or more symptoms of burnout, e.g., emotional exhaustion. d. The symptoms of burnout that I am experiencing wont go away. I think about work frustrations a lot. e. I feel completely burned out. I am at the point where I may need to seek help.					
4. My control over my workload is:	1 Poor	2 Marginal	3 Satisfactory	4 Good	5 Optimal
5. Sufficiency of time for documentation is:	1 Poor	2 Marginal	3 Satisfactory	4 Good	5 Optimal
6. Which number best describes the atmosphere in your primary work area?	1 Calm	2	3 Busy, but reasonable	4	5 Hectic, chaotic
7. My professional values are well aligned with those of my department leaders:	1 Strongly disagree	2 Disagree	3 Neither agree or disagree	4 Agree	5 Strongly agree
8. The degree to which my care team works efficiently together is:	1 Poor	2 Marginal	3 Satisfactory	4 Good	5 Optimal
9. The amount of time I spend on the electronic health record (EHR) at home is:	1 Excessive	2 Moderately high	3 Satisfactory	4 Modest	5 Minimal/ none
10. My proficiency with EHR use is:	1 Poor	2 Marginal	3 Satisfactory	4 Good	5 Optimal

Appendix E

PRE-INITIATIVE ASSESSMENT

1. Do you currently participate in any of the following stress-reducing activities? (select all that apply):

□ Meditation
□ Prayer
□ Exercise
□ Yoga
□ Mindful breathing
□ Other: _____

2. If you answered yes to the above question, how often do you participate in your activities?

□ Daily
□ 2-3 times a week
□ Once per week
□ Less than once a week

3. What is your title? □ MD □ NP □ PA □ RN □ LPN □ Tech □ Admin

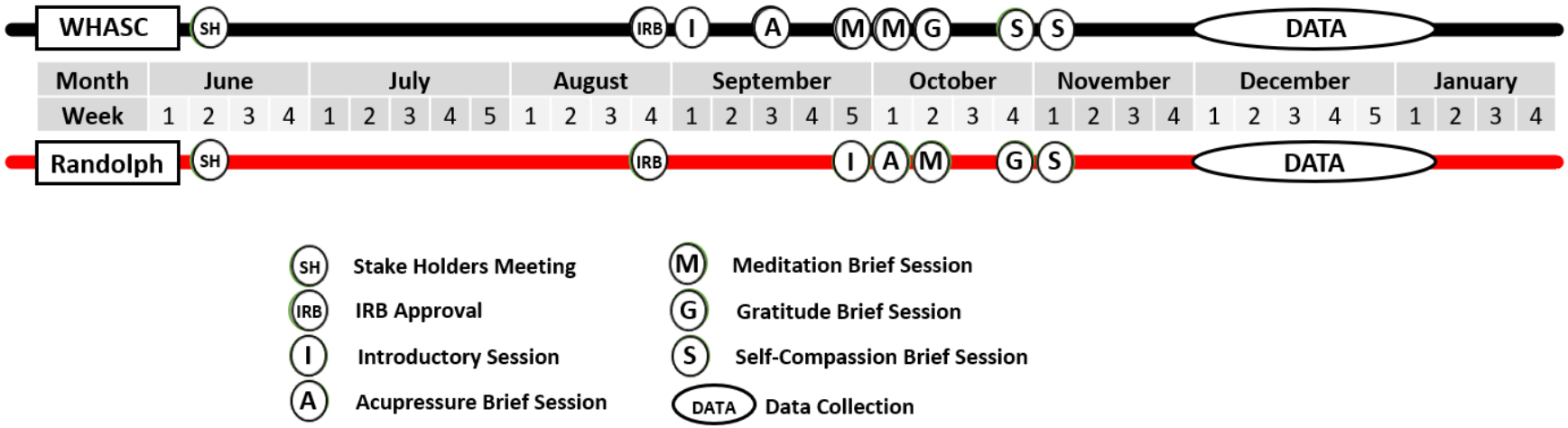
4. How many years have you been practicing? □ < 1 □ 1-5 □ 6-10 □ 11-15 □ >15

5. What is your gender? □ Male □ Female □ Other

6. What is your age? □ 18-30 □ 31-40 □ 41-50 □ 51+

Appendix F

JBSA Timeline



Appendix G

POST-INITIATIVE ASSESSMENT

Name: _____
(For pre/post tracking purposes only. Data analysis will be done with de-identified participant IDs.)

1. How many 15-minute sessions did you attend? ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

2. Which sessions did you attend?

☐ Acupressure ☐ Meditation ☐ Gratitude ☐ Self- Compassion

3. Did you independently practice any activities listed on question #2? ☐ Yes ☐ No

4. If yes on #3 – How many days per week did you practice? ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

5. Did you use the "Mindfulness Coach" App? ☐ Yes ☐ No

6. If yes on #5 – Which features of the app did you use?

☐ Seated Practice ☐ Awareness of the Body ☐ Awareness of the Breath
☐ Mindful Looking ☐ Mindful Walking ☐ Mindful Listening ☐ Building Compassion
☐ Body Scan ☐ Loving-Kindness Meditation ☐ Other (please specify)_____

7. If no on #5 - Was there a reason?

☐ I use another app ☐ Apps are not my thing ☐ No time ☐ Prefer group led activities
☐ I didn't want to download this to my device ☐ Other (please specify)_____

8. What is your title? ☐ MD ☐ NP ☐ PA ☐ RN ☐ LPN ☐ Tech ☐ Admin

9. How many years have you been practicing? ☐ < 1 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ >15

10. What is your gender? ☐ Male ☐ Female ☐ Other

11. What is your age? ☐ 18-30 ☐ 31-40 ☐ 41-50 ☐ 51+

12. What other presentations might you like to see in the future?

13. What should we sustain?

14. How can we improve?

Appendix H

DATA ANALYSIS TABLE									
Unit of Analysis		Variable Name	Variable Description and type of measure	Data Source	Possible Range of Values	Level of Measure	Time Frame for Collection	Statistical Test	Decision Rule
N/A	IV	Time State	-Repeated measures, pre/post intervention states -Process measure	Self directed volunteers	0 = before intervention 1 = after intervention	Nominal	3 Months	None	N/A
Population	DV	Burnout	-Item 3 from Mini-Z survey -Outcome measure	Mini-Z inventory	1-5 (Likert scale)	Ordinal	3 Months	Wilcoxon Signed Rank Test	N/A
Population	IV	Demographic Data	-Gender -Participation -Structure measure	Mini-Z survey	0=male 1=female 0=no 1=yes	Nominal	3 Months	None	N/A
Population	DV	Burnout	-Item 3 from Mini-Z survey -Outcome measure	Mini-Z survey	1-5 (Likert scale)	Ordinal	3 Months	Wilcoxon Ranked Sum Test	N/A
Population	IV	Demographic Data	-Role -Experience -Age -Structure measure	Mini-Z survey	0=MD/DO 1=NP 2=PA 3=RN 4=LPN 5=Tech 6=Admin 0=<1 1=1-5 2=6-10 3=10-15 4=>15 0=18-30 1=31-40 2=41-50 3=51+	Ordinal	3 Months	None	N/A
Population	DV	Burnout	-Item 3 from Mini-Z survey -Outcome measure	Mini-Z survey	1-5 (Likert scale)	Ordinal	3 Months	Kruskal-Wallis Test	N/A

Appendix I

POST-SHORT SESSION ASSESSMENT

Scale: (1) Strongly Disagree (2) Disagree (3) Neural (4) Agree (5) Strongly Agree

1. Today's class was helpful in understanding how to cope with stress.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2. I am satisfied with what I learned from today's session.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

3. Today's class was relevant to my health and wellbeing.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

4. I would recommend this class to others.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

5. Regular sessions would benefit my wellbeing.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Appendix J

BUSINESS CASE with VALUE BASED CARE ASSESSMENT

Proposed Title for Project/Initiative/Opportunity to Improve

Reduction of clinician burnout through app-based mindfulness and resiliency training

Opportunity Statement *(Description of proposed project/initiative/opportunity to improve)*

Providers at Wilford Hall Ambulatory Surgical Clinic(WHASC) have reported feeling the effects of burnout related to large empanelments, high complexity patients and other work related stressors. The aims are to determine the primary factors contributing to burnout and provide mindfulness training to primary care providers to improve psychological and physical well-being. By reducing burnout, the MTF can reduce staff turnover, improve productivity, increase patient safety, and reduce health care costs (Linzer et al., 2015).

Business Opportunity/Objectives *(Prioritize listing – macro and micro objectives)*

-Macro Objectives: The overall goal of this business case is to improve provider satisfaction and productivity at the MTF.
-Micro Objectives: Increased access to care and continuity through decreased provider burnout/attrition/sick days. Leading to increased patient safety, patient satisfaction and patient continuity of care.

Potential Impact of the Initiative/Project *(Identify outcome metrics & benchmarks/and how objectives align with Quadruple Aim, Value Based Care, and HRO goals)*

1. Improved provider burnout scores (Mini-Z)-**Improved Readiness**
2. Improved patient safety measured by decrease in number of PSRs- **Better Health/Lower Cost**
3. Improved patient access to care measured by a reduction of "facility cancel" appointments, referrals to outside facilities, and 3/7 day out appointments-**Better Care**
4. Decrease rate of provider attrition/decrease in recruiting and training costs- **Improved Readiness**

Alternatives (courses of action) chosen for Analysis

1. Mindfulness resiliency intervention which would educate and strengthen the providers mentally and emotionally to manage stress.
2. Combined process improvement/mindfulness training intervention to address and eliminate the causes of stress and burnout while simultaneously educating and strengthening providers mentally and emotionally to manage stress (De Simone et al., 2017).
3. *"Status Quo"*: Continue to have providers care for large, complex empanelments with no interventions or training to reduce stress and burnout

Assumptions

1. Info points needed to compare alternatives
   - We would need to implement a set of metrics to track performance (health care quality, readiness, per capita costs)
   - Need to identify what are the currently accepted best practices
   - Require Joint Outpatient Experience Survey (JOES) scores (facility and by individual provider) and provider satisfaction surveys
   - Reducing clinic-wide provider burnout that would presumably reflect as: increased patient and provider satisfaction, improved access to care, increased military medical readiness, decreased provider attrition, decrease in PSR, near miss, or sentinel events resulting in increased efficiency and decreased per capita cost of care.

2. Time frame for info collection
   - We would need a baseline evaluation before starting the process improvement or intervention
   - We would re-evaluate post intervention
   - Also re-evaluate the data post plan completion, and then annually thereafter

3. Assumptions
   - The mini-Z tool is validated and appropriate to measure the proposed interventions (Olson et al., 2019).
   - Both a process improvement and mindfulness interventions would reflect a positive change on the mini-Z
   - Providers would be willing to participate in a self guided mindfulness course if presented with the benefits
   - The approximate annual salary of a VA primary care provider is $110,000-252,000. (Office of the Chief Human Capital Officer, 2020)

Alternative 1:	App-based Mindfulness Resiliency Training
Pros	**Cons**
-Easily accessible to all providers as app based resource -Flexibility for provider to accomplish at any time minimizing disruption to provider schedule preventing loss of ATC -Shown to have short and long term benefit to emotional exhaustion, depersonalization and personal accomplishment (Pflugeisen et al., 2016) -Improvement in provider burnout scores -Minimal to no cost depending on tools available on site -Skills gained during training can be utilized anywhere, any time, and in any operation and non-operational environment. -Lifetime access to resiliency training	-Responsibility of provider to self accomplish -Does not address inefficiencies in daily operations, lack of training of support staff, or other potential root causes for burnout -Appears to shift responsibility for burnout to the individual provider
Alternative 2:	Combined process improvement/mindfulness training interventions
Pros	**Cons**
Process Improvement -Addresses the "voice" of the provider to identify the root cause of burnout in order to implement process change - Provides intervention to assist providers in preventing/minimizing burnout while improving provider's overall well-being -Improve patient satisfaction on JOES and Interactive Customer Evaluation (ICE) -Improve access to care resulting in improvement in military medical readiness Mindfulness resiliency training -Lifetime access to resiliency training -Easily accessible to all providers as online resource -Flexibility for provider to accomplish at any time minimizing disruption to provider schedule preventing loss of ATC -Shown to have short and long term benefit to emotional exhaustion, depersonalization and personal accomplishment (Pflugeisen et al., 2016) -Improvement in provider burnout scores -Minimal to no cost depending on tools available on site -Skills gained during training can be utilized anywhere, any time, and in any operation and non-operational environment.	- Upfront costs indeterminate - Cost savings will require long-term sustainment - Potential for resistance and buy-in from providers -Change resistors -Initial decrease in access to care due to training -Would involve evaluating burnout contributory factors at multiple clinics and planning, organizing and implementing process improvements for each clinic that would take more man-power and time than available to this team. -Higher potential for failed sustainment with provider and leadership turnover.
Alternative 3:	*"Status Quo"*: No change, no training
Pros	**Cons**
-No cost for training -No changes or disruptions to current daily operations	-Continuing or increased attrition rate -Increased costs associated with recruiting/training providers -Time lost waiting for new providers to PCS or be trained to replace lost providers -Decreased access to care, increased operational cost due to inefficiencies, facility cancels r/t provider callouts, leakage to network d/t lack of appt availability for routine, urgent and acute care -Increased medical errors, near misses, and PSRs in addition to costs associated with them
Recommendation and Rationale	

Recommendation
Our recommendation is to implement the app based mindfulness resiliency training.
Rationale
While alternative two, which includes the process improvement, is backed by research that shows a significant reduction in burnout, the inhibitory factors of cost, time, manpower and sustainability have led our team to recommend alternative one. Alternative one is also backed by research that has shown a reduction of stress and burnout, as well as increasing provider resiliency. Online and app based resiliency training is cost effective, sustainable, and shows both short and long term reduction in provider burnout.

Operating Budget Supporting Project/Initiative (estimated)

I. Cost-savings projected based on:

Improved Patient Safety: Increased levels of burnout are significantly related to increased likelihood of medical errors (Tawfik et al., 2018). Decreased burnout can reduce healthcare costs associated with medical errors.	Indeterminate
Reduced Provider Attrition: Replacing providers lost to turnover accounts for 5% of annual operating budget (Underdahl et al., 2018). Recruitment costs alone equal 2 to 3 times a provider's annual salary (Shanafelt & Noseworthy, 2017).	$220,000 - $700,000 in recruitment costs per provider replaced, based on average FNP salaries for the VA (Office of the Chief Human Capital Officer, 2020)
Improved Operational Readiness: Burnout is a strong predictor of adverse physiological and psychological health conditions (Salvagioni et al., 2017). Decreased productivity results from burnout related turnover, increased mental health days and reduced professional work effort (Shanafelt & Noseworthy, 2017). Decreased provider burnout can improve provider and patient health as well as provider productivity, leading to increased access to care. Increased access to care will decrease network referrals and UCC visits, both of which represent lost revenue and increased external expenditures.	Indeterminate
Improved Patient Satisfaction: Long-term projections anticipate an improvement in patient satisfaction scores related to improved access to care and reduced exhaustion and depersonalization among providers. Increased patient satisfaction reflected in JDES scores is tied to increased reimbursements.	Indeterminate

Total	**Cost savings due to improved quality of care will depend upon the number and type of medical errors prevented, reduction of potential attrition, and degree of productivity improvements.**

II. Costs projected based on:

Program Design and Development:	
App based Mindfulness Training Access (lifetime access)	Free (estimate for 30 providers)
Total	**$0**

PROJECTED VALUE :

While provider burnout is associated with a number of healthcare costs (turnover, medical errors, reduced productivity), the sources, experiences and response to burnout are unique to particular work-centers and individuals. Focusing only on the topic of recruitment costs to replace burnout-related attrition can elucidate a portion of the potential value.	
Estimated annual recruitment related cost-savings (assuming the lowest salary local average FNP salary and the prevention of only 1 burnout-related turnover over a 10-year time span)	$220,000 recruitment costs/ 10 years = + $22,000 / year
Estimated annual online mindfulness training access costs (assuming 30 providers initially with 25% annual turnover due to PCS) 30 providers x 0.25 annual turnover x 10 years = 75 providers	105 providers x $0 /10 years = $0/ year
Estimated net cost savings	**+ $22,000 / year**

Risks and Mitigation Plan

Risks	Plan
1. Organizational/Change resistors	1. Present evidence of expected benefits and foster environment for change. Incentivize adoption
2. Non-participation in mindfulness training	2. Establish trust and rapport . Incentivize adoption.Regular follow-up
3. Leadership Challenges	3. Involve leadership in each phase of the project, keep them informed, provide regular status updates and results
4. Insufficient data from survey data	4. Incentivize participation.
5. Use of proprietary mindfulness training	5. Continued exploration of non-proprietary/ open-source mindfulness curriculum/interventions available on-line or locally (Vogel Resiliency Center)

Implementation Plan

Phase 1:	Gather and integrate internal and external evidence.
Milestone Description:	Interview leadership regarding unit specific concerns related to burnout. Identify available resources and data (attrition/turnover rates, medical errors, JOES surveys, etc). Introduce principal POCs, topic, and purpose to clinic staff.

Deliverables	Due Date	Accountable Person
- Qualitative data from providers - Local quantitative data/metrics - Resource identification - Systematic review/update our literature review as applicable	June 2021	Principal POC/Quality/Risk Management/Clinical Operations

Resources Needed

Time to perform tasks and access to technical resources (quality, risk mgmt., operations etc.) and departmental experts (CNSCI, integrative med., etc.). Time in staff meetings for introduction of principal POCs and purpose.

Expected Level of Benefit

Substantiating the problem with evidence will establish relevance. Baseline data collection will be utilized for future comparison to determine efficacy of EBP. Surveying and interviewing stakeholders will identify potential challenges and aid in a strategic selection on the best course to implement an intervention. Completing introductions to stakeholders and clinic staff will establish a level of transparency, trust, and expand our sphere of influence.

Phase 2:	Dissemination of findings
Milestone Description:	Conduct formal meetings with leadership and stakeholders to present findings and areas of impact. Propose the suggested intervention and anticipated results based upon systematic review of the literature.

Deliverables	Due Dates	Accountable Person
- Aggregate data/metrics - Presentation of findings - Plan proposal for intervention - Short/long term goals; proposed gains - Create "elevator pitch"	June 2021	Principal POC/Leadership/Stakeholders

Resources Needed

Collaboration within teams to schedule three dates to disseminate our findings in order to capture availability of all stakeholders and executive leaders. Platform/venue/medium for content delivery (clinic huddles, conference room, screen projectors, handouts etc.).

Expected Level of Benefit

DOCTOR OF NURSING PRACTICE PROJECT
DNP Project Clinical Question and Team Mentor (Committee Membership) Agreement Form

Graduation Year:

Name(s) of DNP Project Student Team:

1. MAJ Nicole Case Phase II Site: AGCNS ☐ FNP ■ PMHNP ☐ RNA ☐ WHNP ☐

2. Capt Andrew Christensen Phase II Site: AGCNS ☐ FNP ■ PMHNP ☐ RNA ☐ WHNP ☐

3. MAJ Stephanie Hayes Phase II Site: AGCNS ☐ FNP ■ PMHNP ☐ RNA ☐ WHNP ☐

4. Maj Johnathan Virnig Phase II Site: AGCNS ☐ FNP ■ PMHNP ☐ RNA ☐ WHNP ☐

5. _____ Phase II Site: AGCNS ☐ FNP ☐ PMHNP ☐ RNA ☐ WHNP ☐

6. _____ Phase II Site: AGCNS ☐ FNP ☐ PMHNP ☐ RNA ☐ WHNP ☐

The tentative title of the DNP Project Proposal for this student group is:
Decreasing Burnout of Primary Care Providers at Wilford Hall Ambulatory Surgical Center Family Practice Clinic.

Committee Approved DNP Project Clinical Question:
Does the implementation and availability of smartphone application mindfulness training to family practice providers at Wilford Hall Ambulatory Surgical Clinic reduce rates of self-reported burnout?

Names of DNP Project Team Mentors *(type the name and obtain signatures)*:

I agree to serve as a member of the DNP Project Team (Team Mentors) for the above DNP Student Project Team. As a Project Team Mentor, I agree to the duties and responsibilities outlined within the DNP Project Manual which include but are not limited to the provision of consultation and guidance supporting the entire DNP project journey and to ensure the DNP project is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation.

Appendix C: Daniel K. Inouye Graduate School of Nursing
DNP Project Team Mentor (Committee Membership) Agreement Form

NOTE: You may have 3-4 DNP Team Mentors [committee members including your DNP Senior Mentor (Chair)]. The Phase II Site Director may also be a member of the group, as well as other USUHS faculty or others who may serve as content experts. All non-USUHS faculty selected as a Team Mentor must be approved by the DNP Project Director.

Senior Mentor (Chair): Dr. Laura Taylor Signature: [redacted] Date: 31Dec2020

Team Mentor (Committee): Maj Michael Allen Signature: _____ Date: _____

Team Mentor (Committee): _____ Signature: _____ Date: _____

Team Mentor (Committee): _____ Signature: _____ Date: _____

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** STEPHANIE HAYES (ID: 9015203)
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Social and Behavioral Investigators and Research Study Team
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983951
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 84

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
History and Ethical Principles - SBE (ID: 490)	23-Mar-2020	2/5 (40%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Informed Consent - SBE (ID: 504)	23-Mar-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research with Prisoners - SBE (ID: 506)	23-Mar-2020	2/5 (40%)
Research with Children - SBE (ID: 507)	23-Mar-2020	3/5 (60%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
International Research - SBE (ID: 509)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	23-Mar-2020	1/5 (20%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	23-Mar-2020	5/5 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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- **Name:** STEPHANIE HAYES (ID: 9015203)
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Social and Behavioral Investigators and Research Study Team
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983951
- **Report Date:** 23-Mar-2020
- **Current Score**:** 88

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	23-Mar-2020	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Informed Consent - SBE (ID: 504)	23-Mar-2020	5/5 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research with Prisoners - SBE (ID: 506)	23-Mar-2020	2/5 (40%)
Research with Children - SBE (ID: 507)	23-Mar-2020	3/5 (60%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
International Research - SBE (ID: 509)	23-Mar-2020	4/5 (80%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	23-Mar-2020	5/5 (100%)
History and Ethical Principles - SBE (ID: 490)	23-Mar-2020	2/5 (40%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

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- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** GCP – Social and Behavioral Research Best Practices for Clinical Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983956
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 100
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Module 1 - Introduction (ID: 17531)	23-Mar-2020	5/5 (100%)
Module 2 - Research Protocol (ID: 17532)	23-Mar-2020	5/5 (100%)
Module 3 - Recruitment and Retention (ID: 17533)	23-Mar-2020	5/5 (100%)
Module 4 - Informed Consent Communication (ID: 17534)	23-Mar-2020	5/5 (100%)
Module 5 - Privacy and Confidentiality (ID: 17535)	23-Mar-2020	5/5 (100%)
Module 6 - Participant Safety and Adverse Event Reporting (ID: 17536)	23-Mar-2020	5/5 (100%)
Module 7 - Quality Control and Assurance (ID: 17537)	23-Mar-2020	5/5 (100%)
Module 8 - Research Misconduct (ID: 17538)	23-Mar-2020	5/5 (100%)
Module 9 - Conclusion (ID: 17539)	23-Mar-2020	No Quiz

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** GCP – Social and Behavioral Research Best Practices for Clinical Research
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983956
- **Report Date:** 23-Mar-2020
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Module 1 - Introduction (ID: 17531)	23-Mar-2020	5/5 (100%)
Module 2 - Research Protocol (ID: 17532)	23-Mar-2020	5/5 (100%)
Module 3 - Recruitment and Retention (ID: 17533)	23-Mar-2020	5/5 (100%)
Module 4 - Informed Consent Communication (ID: 17534)	23-Mar-2020	5/5 (100%)
Module 5 - Privacy and Confidentiality (ID: 17535)	23-Mar-2020	5/5 (100%)
Module 6 - Participant Safety and Adverse Event Reporting (ID: 17536)	23-Mar-2020	5/5 (100%)
Module 7 - Quality Control and Assurance (ID: 17537)	23-Mar-2020	5/5 (100%)
Module 8 - Research Misconduct (ID: 17538)	23-Mar-2020	5/5 (100%)
Module 9 - Conclusion (ID: 17539)	23-Mar-2020	No Quiz

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COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

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- **Phone:** 9313024538

- **Curriculum Group:** Responsible Conduct of Research (RCR)
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983955
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 83

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Introduction to RCR (RCR-Basic) (ID: 17009)	23-Mar-2020	2/3 (67%)
Authorship (RCR-Basic) (ID: 16597)	23-Mar-2020	5/5 (100%)
Collaborative Research (RCR-Basic) (ID: 16598)	23-Mar-2020	5/5 (100%)
Conflicts of Interest (RCR-Basic) (ID: 16599)	23-Mar-2020	4/5 (80%)
Data Management (RCR-Basic) (ID: 16600)	23-Mar-2020	4/5 (80%)
Mentoring (RCR-Basic) (ID: 16602)	23-Mar-2020	4/5 (80%)
Peer Review (RCR-Basic) (ID: 16603)	23-Mar-2020	5/5 (100%)
Research Misconduct (RCR-Basic) (ID: 16604)	23-Mar-2020	5/5 (100%)
Plagiarism (RCR-Basic) (ID: 15156)	23-Mar-2020	4/5 (80%)
Using Animal Subjects in Research (RCR-Basic) (ID: 13301)	23-Mar-2020	5/5 (100%)
Research Involving Human Subjects (RCR-Basic) (ID: 13566)	23-Mar-2020	1/5 (20%)

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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- **Phone:** 9313024538

- **Curriculum Group:** Responsible Conduct of Research (RCR)
- **Course Learner Group:** Same as Curriculum Group
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983955
- **Report Date:** 23-Mar-2020
- **Current Score**:** 83

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Using Animal Subjects in Research (RCR-Basic) (ID: 13301)	23-Mar-2020	5/5 (100%)
Research Involving Human Subjects (RCR-Basic) (ID: 13566)	23-Mar-2020	1/5 (20%)
Plagiarism (RCR-Basic) (ID: 15156)	23-Mar-2020	4/5 (80%)
Authorship (RCR-Basic) (ID: 16597)	23-Mar-2020	5/5 (100%)
Collaborative Research (RCR-Basic) (ID: 16598)	23-Mar-2020	5/5 (100%)
Conflicts of Interest (RCR-Basic) (ID: 16599)	23-Mar-2020	4/5 (80%)
Data Management (RCR-Basic) (ID: 16600)	23-Mar-2020	4/5 (80%)
Mentoring (RCR-Basic) (ID: 16602)	23-Mar-2020	4/5 (80%)
Peer Review (RCR-Basic) (ID: 16603)	23-Mar-2020	5/5 (100%)
Research Misconduct (RCR-Basic) (ID: 16604)	23-Mar-2020	5/5 (100%)
Introduction to RCR (RCR-Basic) (ID: 17009)	23-Mar-2020	2/3 (67%)

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COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

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- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomed Research Coordinators, Clinical Coordinators, Study Coordinators & Research Administrators
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983953
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 89

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
History and Ethics of Human Subjects Research (ID: 498)	23-Mar-2020	4/5 (80%)
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz

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COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomed Research Coordinators, Clinical Coordinators, Study Coordinators & Research Administrators
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983953
- **Report Date:** 23-Mar-2020
- **Current Score**:** 89

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
History and Ethics of Human Subjects Research (ID: 498)	23-Mar-2020	4/5 (80%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

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- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Investigators and Research Study Team
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983950
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 88

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
History and Ethics of Human Subjects Research (ID: 498)	23-Mar-2020	4/5 (80%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	23-Mar-2020	5/5 (100%)
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	23-Mar-2020	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)

Informed Consent and Confidentiality in Public Health Research (ID: 17639)	23-Mar-2020	2/5 (40%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
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- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Investigators and Research Study Team
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983950
- **Report Date:** 23-Mar-2020
- **Current Score**:** 91

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	23-Mar-2020	5/5 (100%)
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Defining Research with Human Subjects - SBE (ID: 491)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Assessing Risk - SBE (ID: 503)	23-Mar-2020	5/5 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
History and Ethics of Human Subjects Research (ID: 498)	23-Mar-2020	4/5 (80%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	23-Mar-2020	5/5 (100%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
The IRB Member Module - 'What Every New IRB Member Needs to Know' (ID: 816)	23-Mar-2020	5/5 (100%)
Informed Consent and Confidentiality in Public Health Research (ID: 17639)	23-Mar-2020	5/5 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz

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COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** STEPHANIE HAYES (ID: 9015203)
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Institution Email:** Stephanie.hayes@usuhs.edu
- **Phone:** 9313024538

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Research Support Staff
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35983952
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 87

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz
Belmont Report and Its Principles (ID: 1127)	23-Mar-2020	3/3 (100%)
History and Ethics of Human Subjects Research (ID: 498)	23-Mar-2020	4/5 (80%)
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
Records-Based Research (ID: 5)	23-Mar-2020	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	23-Mar-2020	4/5 (80%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
FDA-Regulated Research (ID: 12)	23-Mar-2020	5/5 (100%)
Research and HIPAA Privacy Protections (ID: 14)	23-Mar-2020	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	23-Mar-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	23-Mar-2020	4/5 (80%)
Internet-Based Research - SBE (ID: 510)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz

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COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Informed Consent (ID: 3)	23-Mar-2020	0/5 (0%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	23-Mar-2020	4/4 (100%)
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Research Involving Prisoners (ID: 8)	23-Mar-2020	4/4 (100%)
Privacy and Confidentiality - SBE (ID: 505)	23-Mar-2020	4/5 (80%)
Research Involving Children (ID: 9)	23-Mar-2020	3/3 (100%)
Research Involving Pregnant Women, Fetuses, and Neonates (ID: 10)	23-Mar-2020	3/3 (100%)
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Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	23-Mar-2020	No Quiz
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	23-Mar-2020	5/5 (100%)
International Studies (ID: 971)	23-Mar-2020	3/3 (100%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	23-Mar-2020	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	23-Mar-2020	No Quiz

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- **Curriculum Group:** Good Clinical Practice (U.S. FDA Focus)
- **Course Learner Group:** GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)
- **Stage:** Stage 1 - GCP

- **Record ID:** 35983954
- **Completion Date:** 23-Mar-2020
- **Expiration Date:** 23-Mar-2023
- **Minimum Passing:** 80
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
The CITI Good Clinical Practice Course for Clinical Trials Involving Drugs and Devices (ID: 1350)	23-Mar-2020	3/3 (100%)

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COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

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- **Course Learner Group:** GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)
- **Stage:** Stage 1 - GCP

- **Record ID:** 35983954
- **Report Date:** 23-Mar-2020
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
The CITI Good Clinical Practice Course for Clinical Trials Involving Drugs and Devices (ID: 1350)	23-Mar-2020	3/3 (100%)

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OFFICE OF RESEARCH
4301 JONES BRIDGE ROAD
BETHESDA, MAYLAND 20814
PHONE: (301) 295-3303; FAX: (301) 295-6771

NOTICE OF PROJECT APPROVAL

Change Number: Original

VPR Site Number:	GSN-61-12021
Principal Investigator:	Christensen, Andrew
Department:	Graduate School of Nursing
Project Type:	Student
Project Title:	Evaluation of the Impact of a Mindfulness Toolkit on the Burnout Levels of Healthcare Teams at Two Military Family Practice Clinics
Project Period:	7/14/2021 to 7/14/2022

Assurance and Progress Report Information:

Name	Sup	Approval Type	Status	Approved On	Forms Received
Progress Report	0			To be Submitted	N/A

Remarks:
This Notice Of Project Approval has been reviewed and approved. Please remember that you must submit a final Progress Report (Form 3210) upon completion of this project.

Questions regarding this approval should be directed to the following person in the Office of Research:
Sharon McIver, (301) 295-9814.

WOODBERRY.MITCHELL.WAYNE.1060957114 Digitally signed by WOODBERRY.MITCHELL.WAYNE.1060957114 Date: 2021.07.20 16:03:53 -04'00'

For/Mark G. Kortepeter, MD, MPH Date
FACP, FIDSA, FASTMH
COL (R) MC US Army
Vice President for Research
Uniformed Services University of the Health Sciences

cc: File
Dr. Kennett Radford
Laura Taylor

DEPARTMENT OF THE AIR FORCE
59TH MEDICAL WING (AETC)
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

Aug 25, 2021

FINAL DETERMINATION – NOT RESEARCH

Determination Date: 08/24/2021

Project Lead: MAJ Stephanie Hayes/P and R - Uniformed Services University of the Health Sciences (USUHS)

Reference Number: FWH20210134N

Project Title: Evaluation of the Impact of a Mindfulness Toolkit on the Burnout Levels of Healthcare Professionals at Two Military Family Practice Clinics.

You may begin your project, as you would any other clinical or operational activity, with the approval and sponsorship of your leadership.

Your activity was determined on 08/24/2021 to be considered **not research** as defined by DoD regulation **32 CFR 219 and FDA regulation 21 CFR 56**. Continued IRB oversight for this activity is not required. The proposed activity is not funded by DHHS/DoD as research; is not a systematic investigation to test a hypothesis and permit conclusions to be drawn; is not designed to develop or contribute to generalizable knowledge; and the purpose is not to investigate the safety or effectiveness of a drug, medical device or biologic.

Since the IRB does not have regulatory oversight for your study, it is the investigator's responsibility to validate the study's scientific merit and research design and to ensure the conduct of the study is upheld by the highest ethical standards, as required by the Wing. Should you require assistance in reviewing the scientific merit and research design of your study, please contact the Office of Clinical Research Support. Protection of subjects' rights safety and welfare and the responsibility for protecting PHI/PII and research data, now fall on the investigator and their commander.

In accord with DoDI 6000.08 any intramural funding of this study as research or as a clinical investigation may continue to be received or sought regardless of this IRB determination.

Your study has received a one-time research determination. If the goals and/or activities of the project change during the course of the project, or if new activities are proposed that would constitute human subjects research, re-contact the Office of Clinical Research Support, so that a regulatory expert may determine whether or not the revised plan involves human subject research activities.

GIBBONS.THOMAS.F.1128005281 Digitally signed by GIBBONS.THOMAS.F.1128005281 Date: 2021.08.25 17:46:21 -05'00'

Thomas Gibbons., PhD
Designated Exempt Reviewer

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled:

was completed at by the following student(s): *(type student name) (signature) (date)*

MAJ Nicole L. Case [redacted] 19APR2022

HAYES.STEPHANIE.SIM.1253905030 Digitally signed by HAYES.STEPHANIE.SIM.1253905030 Date: 2022.04.19 20:08:52 -05'00'

VIRNIG.JONATHAN.PAUL.1250419950 Digitally signed by VIRNIG.JONATHAN.PAUL.1250419950 Date: 2022.04.19 20:15:31 -05'00'

CHRISTENSEN.ANDREW.JASON.1472124788 Digitally signed by Christensen.Andrew.Jason.1472124788 Date: 2022.04.19 20:56:15 -05'00

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation to the DNP Project Team,
- Presentation of DNP project to the leadership at the Phase II Site,
- Abstract/Impact Statement *(Appendix I)*, and
- DNP Project Written Report.

Verified by:
(type name) (signature) (date)

Dr. Laura Taylor
Laura Taylor, PhD, RN, ANEF, FAAN Digitally signed by Laura Taylor, PhD, RN, ANEF, FAAN Date: 2022.04.22 11:30:34 -04'00'
_Senior Mentor

_Team Mentor

_Team Mentor

Maj Michael Allen, DNP
_Team Mentor
& Phase II Site Director

Mindfulness Toolkit to Combat Healthcare Worker Burnout

Nicole Case, MAJ, USA; Andrew Christensen, Capt USAF; Stephanie Hayes, MAJ, USA; Jonathan Virnig, Maj, USAF
Daniel K. Inouye Graduate School of Nursing, Uniformed Services University of the Health Sciences, Bethesda, MD

Significance of the Problem

- 53% of primary care providers experience burnout
- HCW report higher rates of physiological and psychological health conditions
- Increased suicide rates amongst HCW
- Increased costs related to staff turnover, lost productivity, and medical errors
- $220,000 – 700,000 attrition cost per provider

Purpose

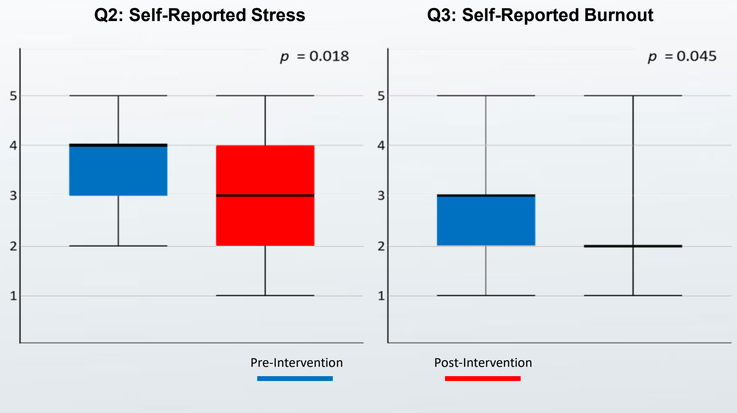
- Deploy a brief, flexible, individually-focused, evidence-based mindfulness toolkit
- Reduce physiological/psychological burden on HCW
- Increase self-awareness, self-regulation and self-reflection

Methods

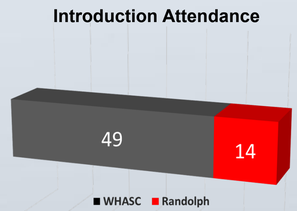
- **Setting and Population**
  - 69 HCW from WHASC Family Practice Clinic
  - 21 HCW from Randolph Family Practice Clinic
- **General Approach**
  - Pre/Post – Evaluation
  - Voluntary participation
  - Multiple attendance opportunities
- **Mindfulness Kit**
  - Introduction of tool
  - Supporting evidence
  - Guided activities
  - Habit formation
  - YouTube link

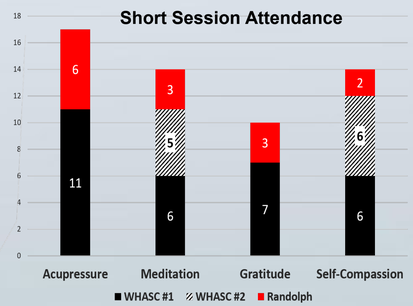
Results

- **Mini Z**
  - Statistically significant (P<0.05) decrease in burnout after intervention implementation
  - Participation group showed a reduction in self-reported stress and burnout
  - Those who did not participate showed no change



- **Demographics**





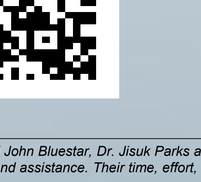
- **Analysis**
  - Pre-intervention median score indicates ≥ 1 symptom(s) of burnout
  - Significant improvement in stress and burnout in those attending one 15 min session
  - No significant difference by sex, age, experience, or role

Conclusion

- Strategic mindfulness tools are effective in combating primary care team burnout
- Even brief participation has measurable effect
- Mindfulness interventions
  - Free
  - Readily available with little time demand
  - Easy to implement & practice

Relevance to Military Nursing

- Adaptive to any environment
- Combating and preventing burnout is vital to accomplishing the DHA quadruple aim
- Improved readiness
- Increase efficiency
- Decrease attrition
- Reduce patient harm



Future Directions

- Disseminate throughout DoD MHS
- Expand mindfulness toolkit
- Integrate into newcomer's orientation
- Empower leaders and champions for sustainment
- Investigate dose effects
- Explore strategies to increase participation

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References available upon request

"The views expressed in this poster are those of the authors and do not necessarily reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the United States government."

The authors would like to acknowledge our DNP Project Mentors Dr. Micheal Allen, Maj John Bluestar, Dr. Jisuk Parks and Dr. Rebecca Heyne, and Dr. Laura Taylor (Senior Mentor) for their support, guidance, and assistance. Their time, effort, and dedication to this project is appreciated more than words can express.

Evaluation of a Mindfulness Toolkit on Burnout Levels in Primary Care HCW

MAJ Nicole Case
Capt Andrew Christensen
MAJ Stephanie Hayes
Maj Jonathan Virnig

Phase II Director: Maj Michael Allen, DNP, NP-C
Senior Mentor: Dr. Laura Taylor, PhD, RN, ANEF, FAAN

50TH ANNIVERSARY 1972 2022
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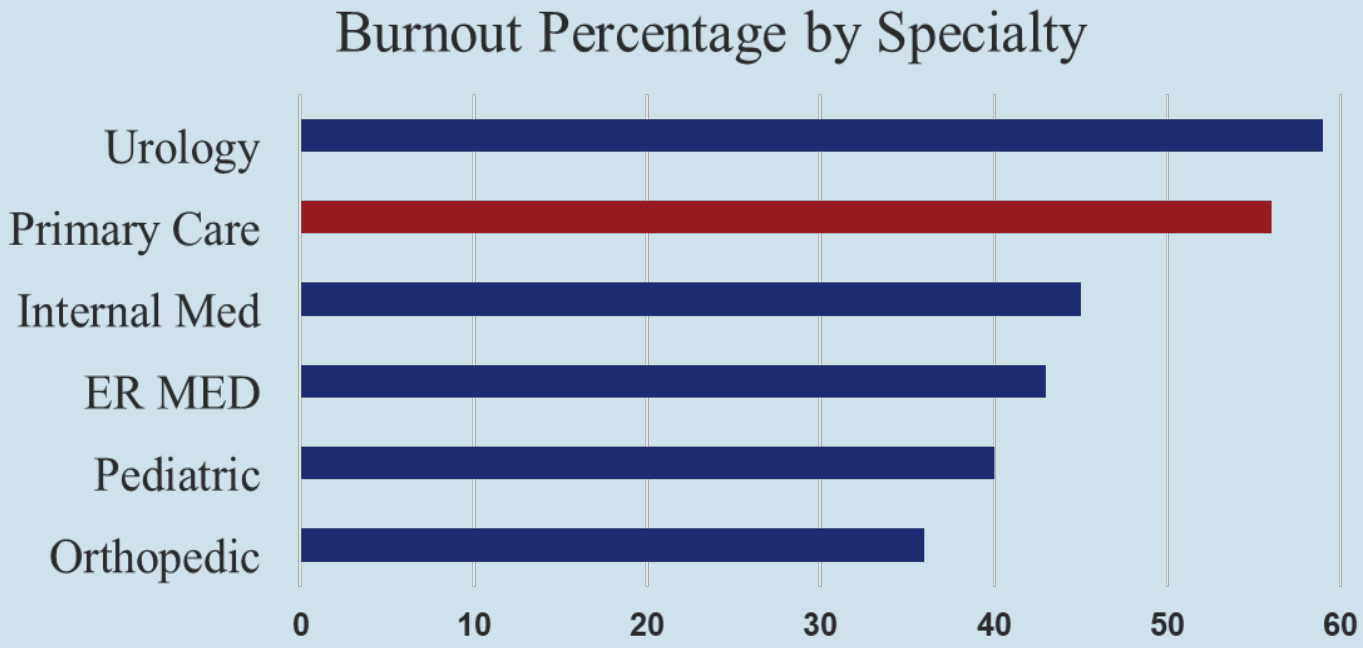
- There are no financial relationships that exist between the speakers and a commercial entity

Introduction

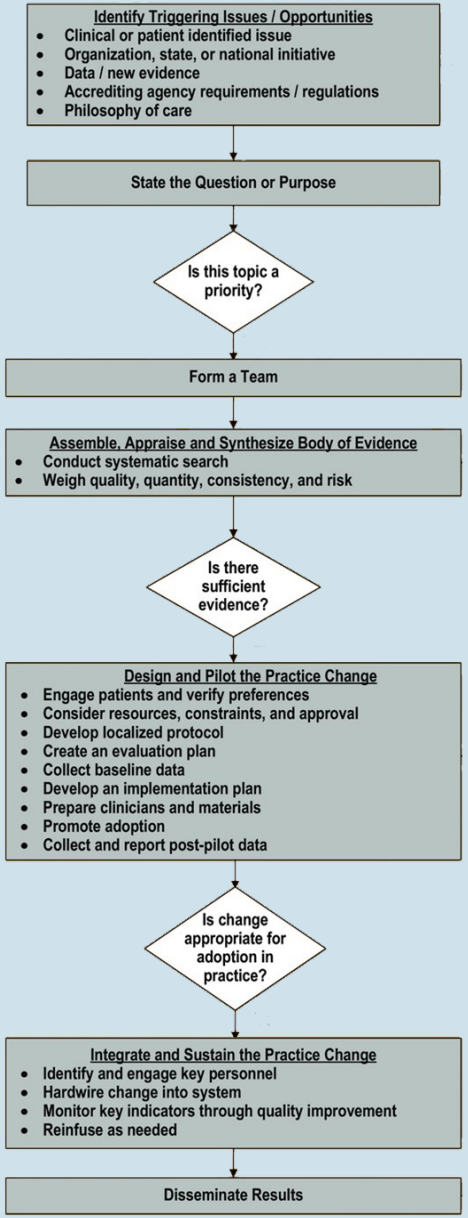
- Burnout is a state of emotional, physical, and mental exhaustion caused by excessive and prolonged stress
- Burnout can affect anyone but has higher incidence rates in healthcare team members
- Burnout disproportionally affects primary care



Willard-Grace et al., 2019

(Dewa et al., 2017, Salvagioni et al., 2017, Willard-Grace et al., 2019)

Organizing Framework

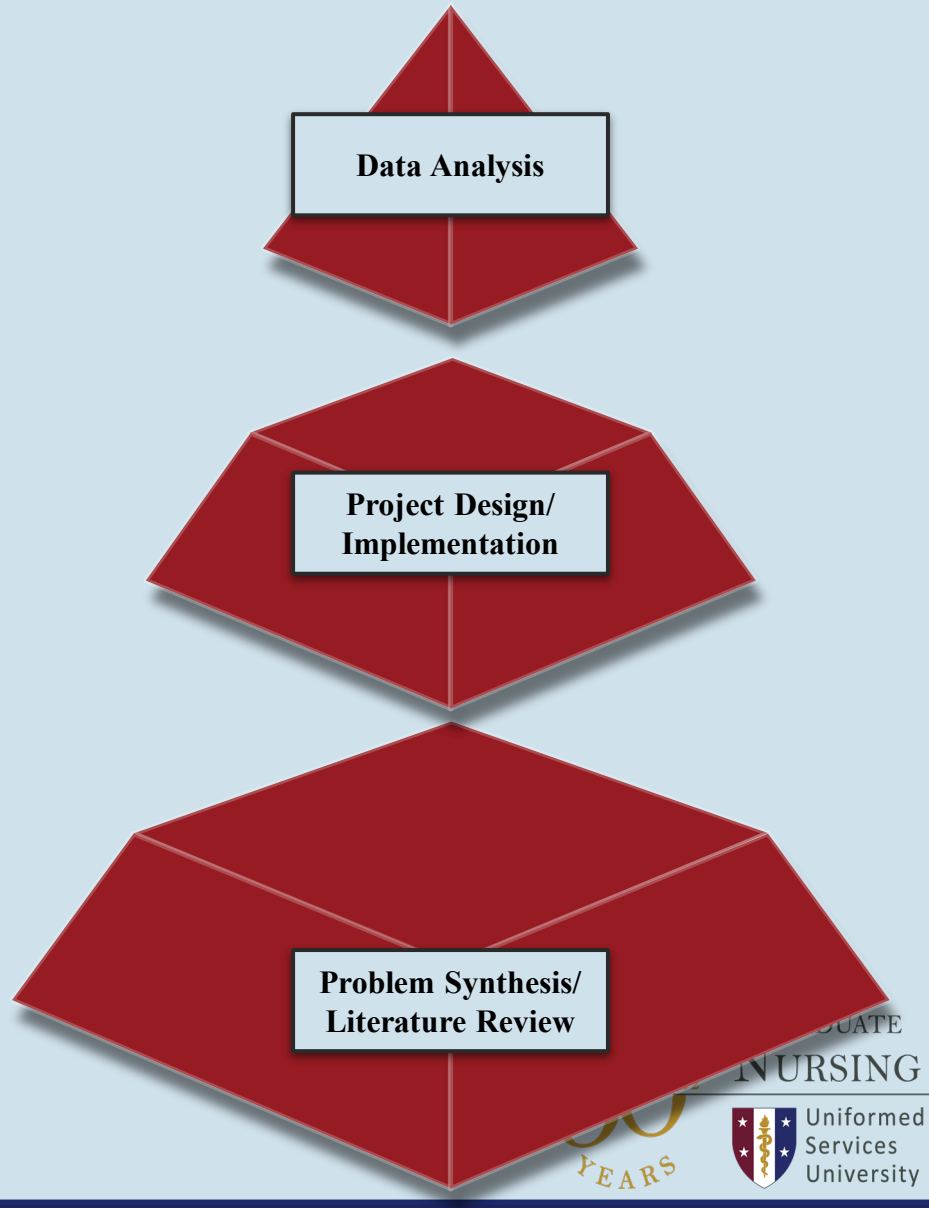


Burnout reported at WHASC and Randolph Family Practice by Phase II site director and providers

Problem Synthesis/ Literature Review

Project Design/ Implementation

Data Analysis



Problem Synthesis

Burnout effects

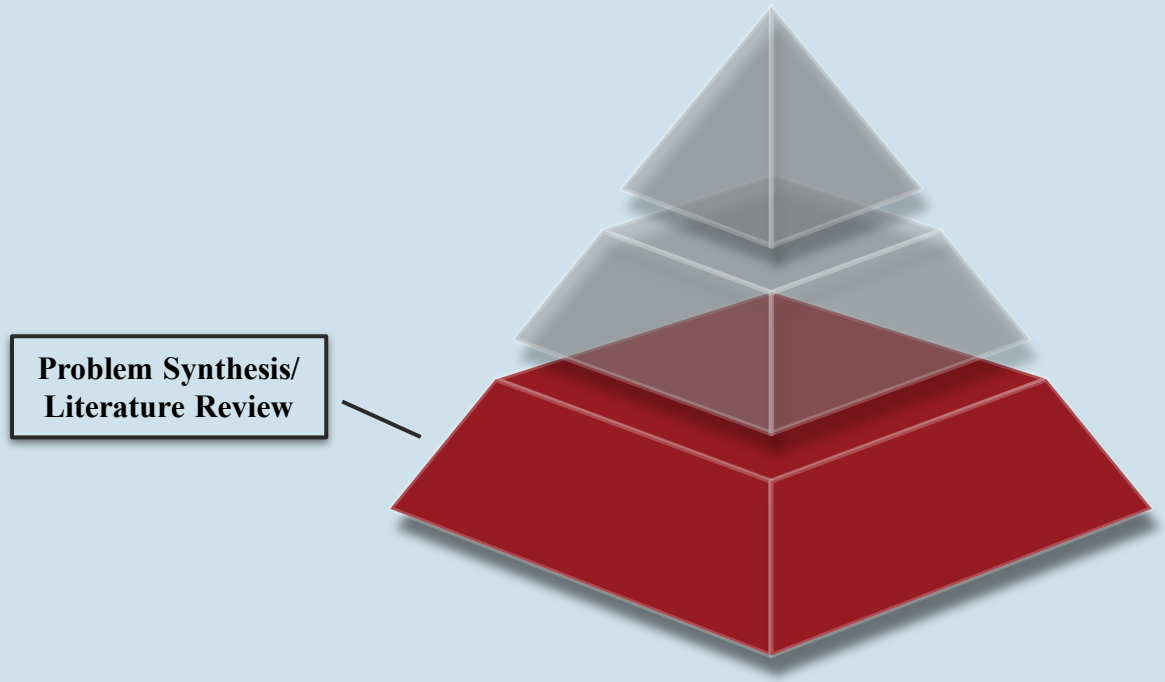
- Poor patient outcomes
- Medical errors
- Suboptimal treatment
- Decreased patient safety
- Lost productivity
- Staff Turnover

Increased suicide rates

- 3.8 times higher in men
- 4.5 times higher in women

Organizational vs Individual Interventions

- Mindfulness-Based Stress Reduction (MBSR)



(Garcia et al., 2019; Rothenberger, 2017; Salyers et al., 2017; Shanafelt & Noseworthy, 2017)

Relevance to Military Nursing

"Ready Medical Force… Medically Ready Force"

Improved Readiness

- Reduce physiological/psychological burden of provider burnout
- Adaptive to any environment
- Ready medical force that can deploy worldwide at a moments notice

Better Health

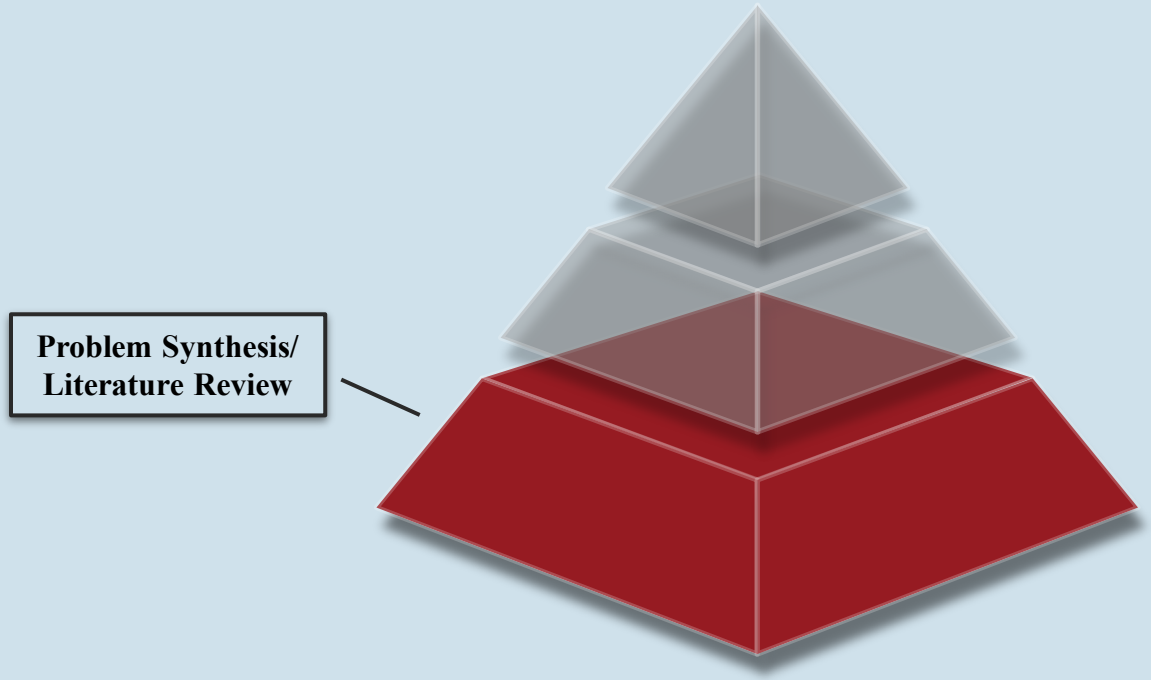
- Behavior shift from healthcare to health

Better Care & Lower cost

- Increase efficiency
- Decrease attrition
- Decrease unintentional harm

JBSA Risk Factors

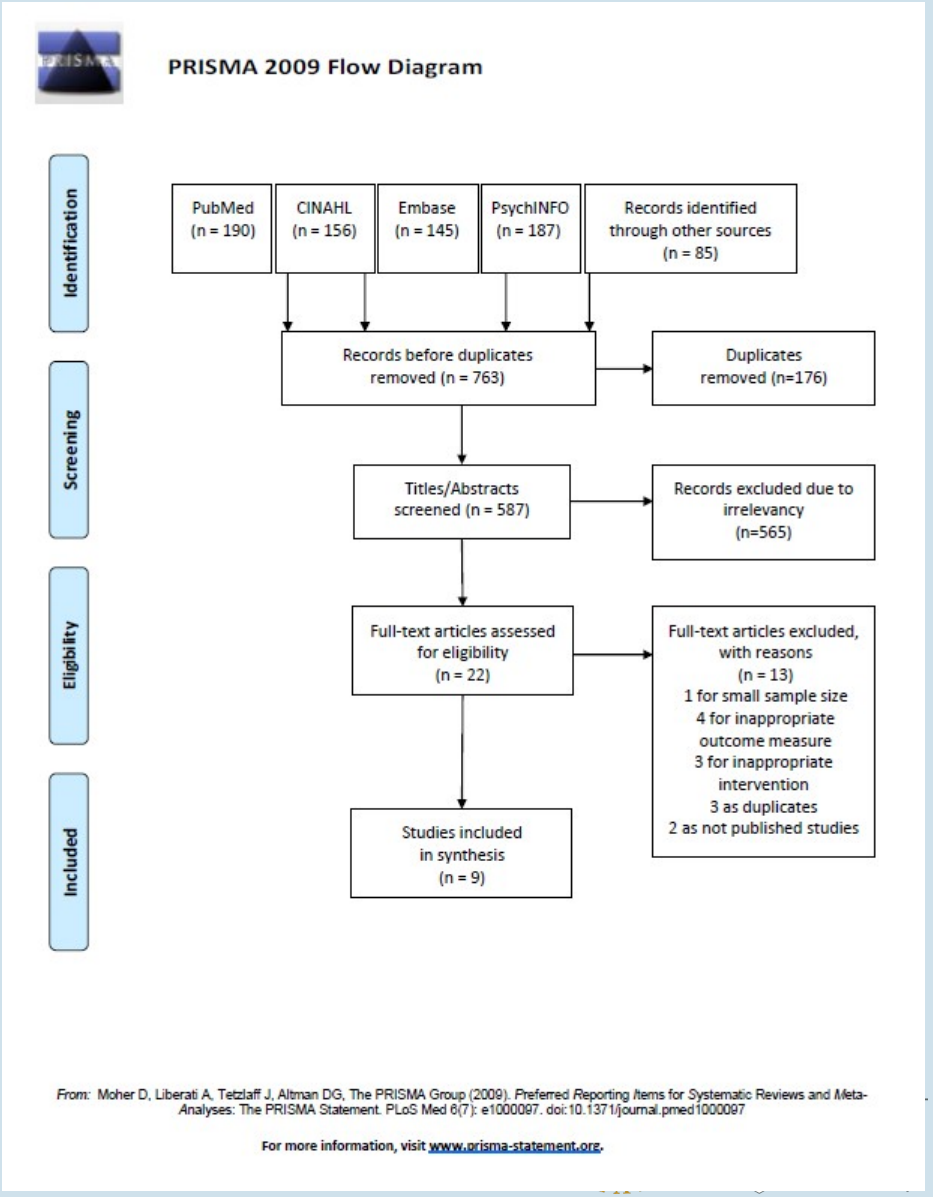
- Primary care
- Mandatory training
- New EHR
- High empanelment
- Additional duties
- Admin support
- Leadership advocacy
- Schedule control
- Deployment



(Paige et al., 2020; Rothenberger, 2017; Sargent et al., 2016)

Clinical Question / Literature Review

- Does the implementation of a multimodal mindfulness training program in the family practice clinics at Wilford Hall Ambulatory Surgical and Randolph AFB reduce rates of burnout among primary health care workers when measured on the Mini Z survey?
- **Databases:** PubMed, CINAHL, Embase, PsycINFO
- **Search Terms:** Provider, burnout, intervention, reduce, mindfulness
- **Limiters:** Last 10 years, English language, articles that evaluated mindfulness based intervention on burnout
- **Exclusion Criteria:** No intervention, patient focused, no burnout outcome measures, non-healthcare populations
- **Results:**
  Articles: 763
  Duplicates: 176
  Title/Abstract screen: 587
  Inclusion/Exclusion criteria: 22
  Final articles included: 9



Solution Synthesis: Mindfulness Toolkit

Individually-Focused Interventions

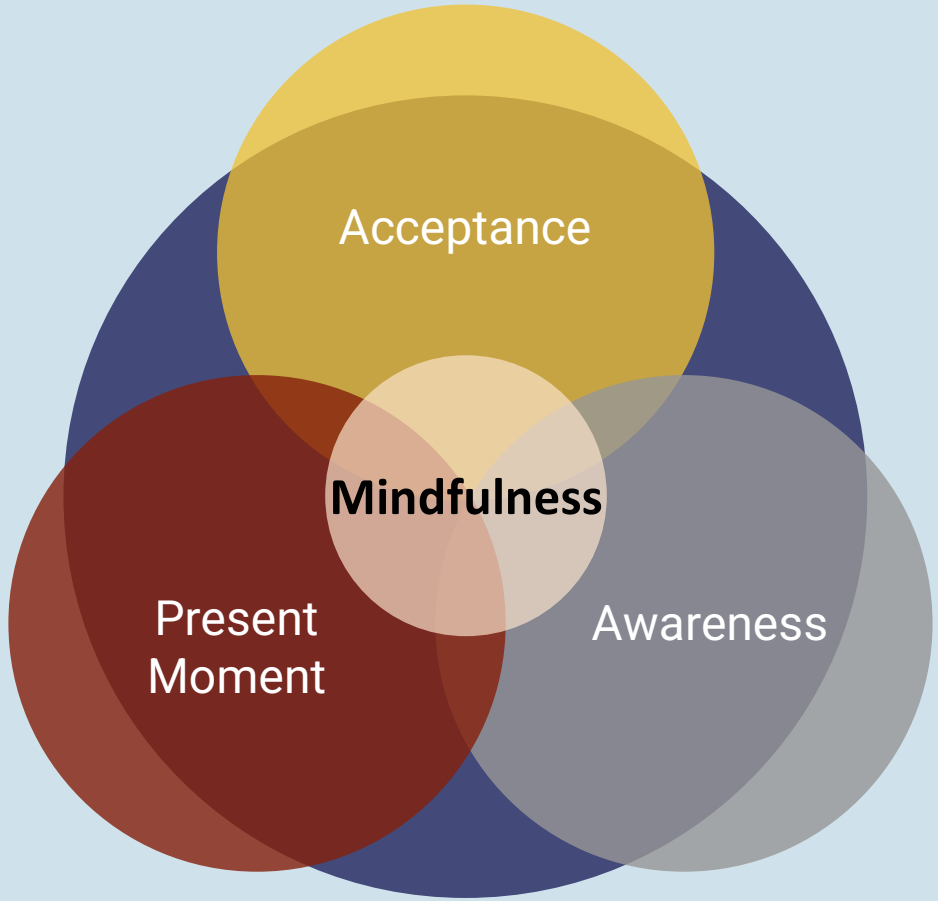
- Increase professional competence, communication, coping strategies

Mindfulness Interventions

- Increases self-awareness, self-regulation and self-reflection
- Varied settings, durations, frequencies
- Positive effects on burnout
- Mindfulness-Based Stress Reduction (MBSR)

Mindfulness Based Toolkit

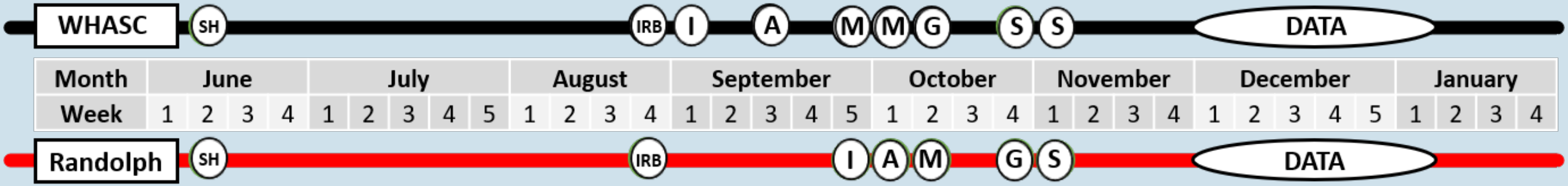
- Mindfulness Coach App
- Acupressure, meditation, gratitude, self-compassion



Disclaimer: Use of these apps a not necessarily used, or endorsed by the U.S government, the Department of Defense, or the Department of the Air Force. No Federal endorsement of the apps is intended

(Dyrbye et al., 2017; De Simone et al., 2019; Ahola et al., 2017; Panagioti et al., 2018; Scheepers et al., 2020; Aranda Auserón et al., 2018)

Procedural Steps



SH Stake Holders Meeting

IRB IRB Approval

I Introductory Session

A Acupressure Brief Session

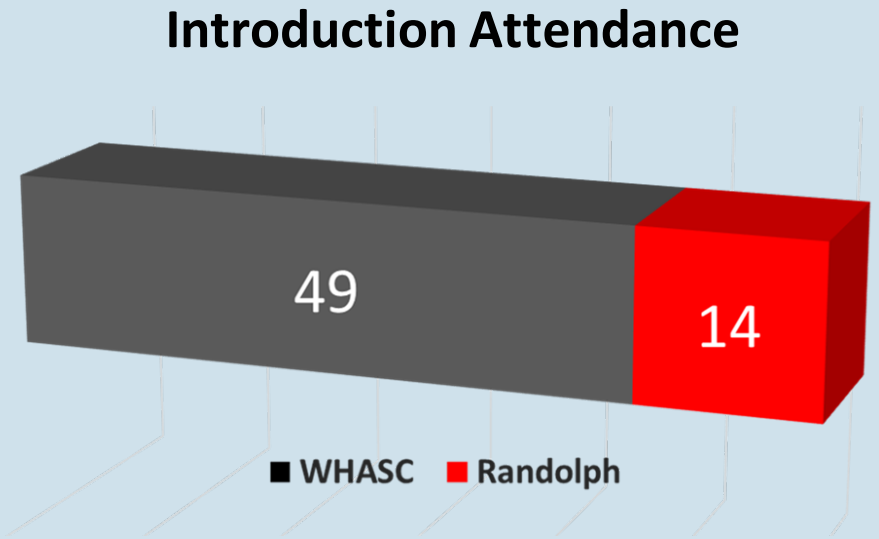
M Meditation Brief Session

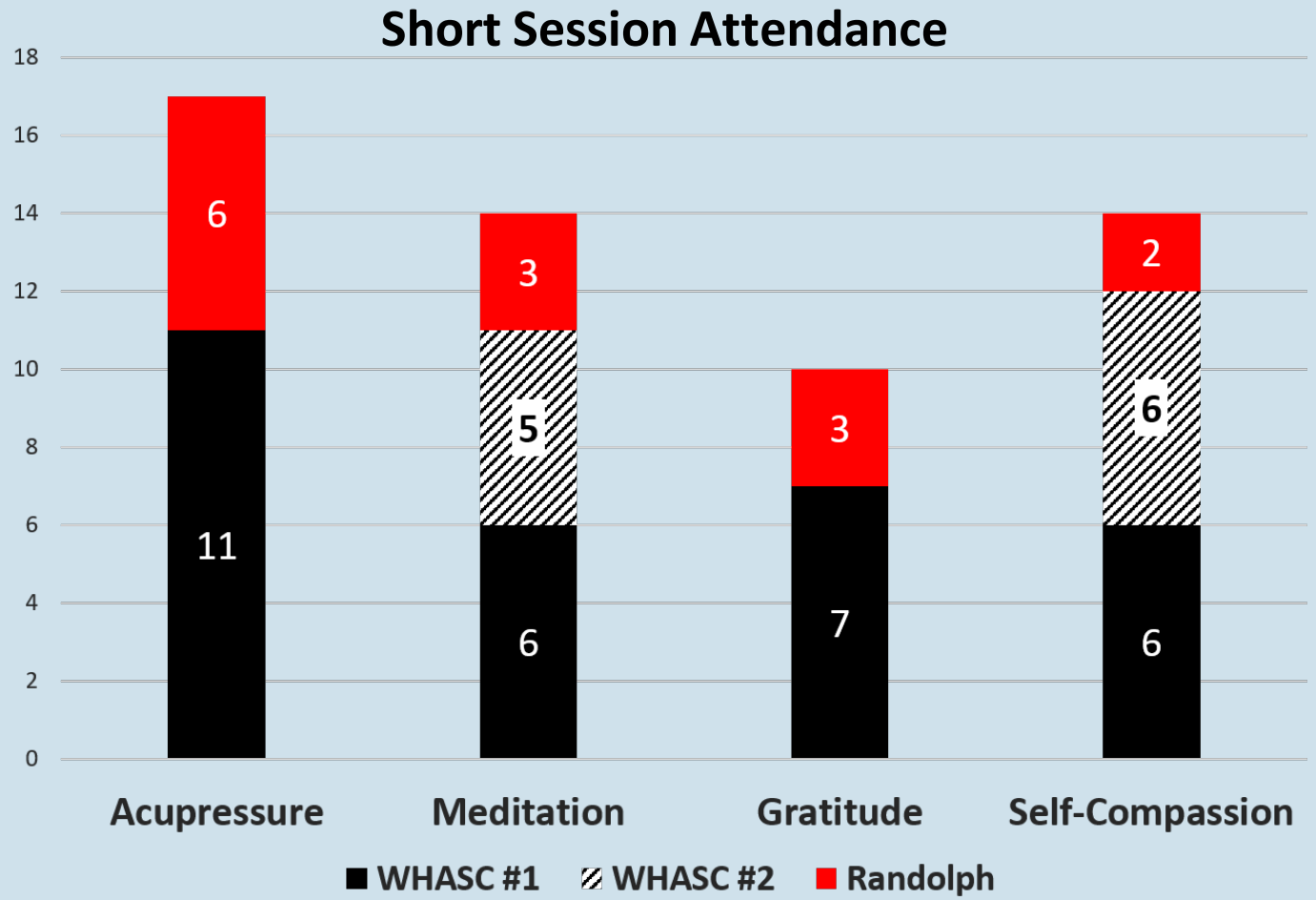
G Gratitude Brief Session

S Self-Compassion Brief Session

DATA Data Collection

Results: Attendance





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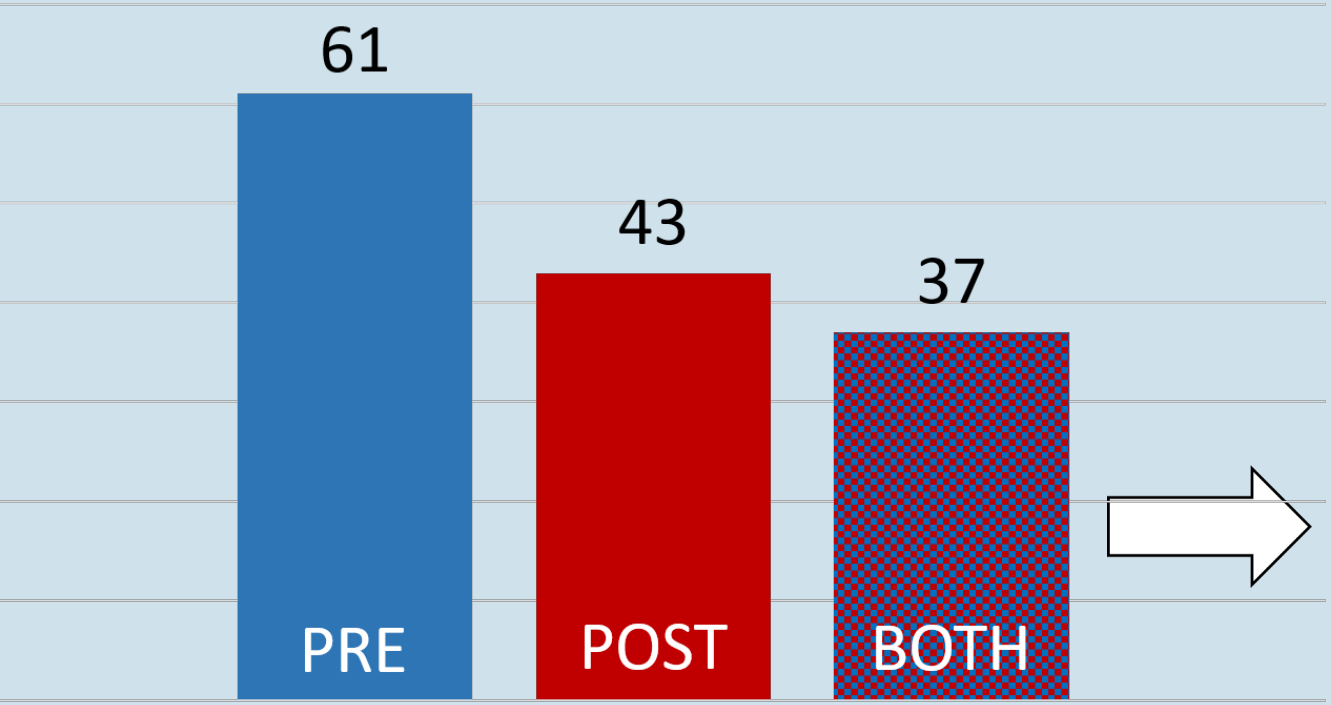
Results: Response vs. Participation

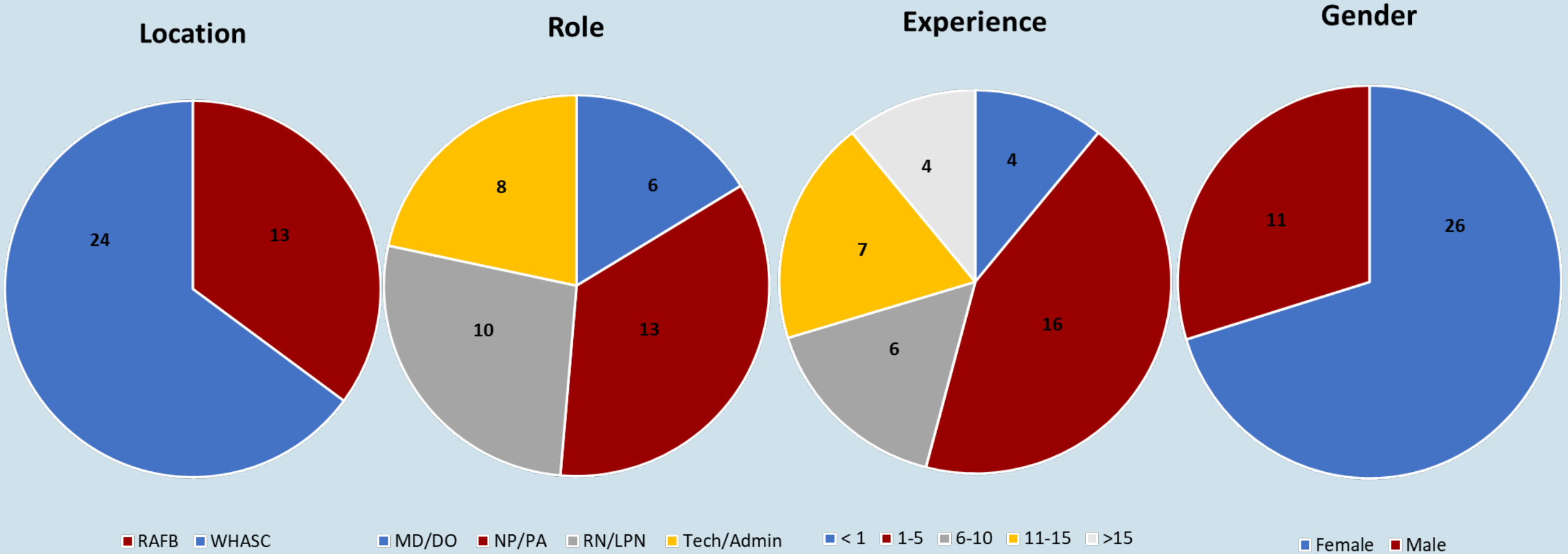
Survey Response



"Participation"

1. Attended 1+ short session, or
2. Downloaded the mindfulness app, or
3. Individual practice
   - **after** introduction session
   - *without* attending short sessions/app usage
   - **AND** *without* prior history of meditation

Results: Demographics (n=37)



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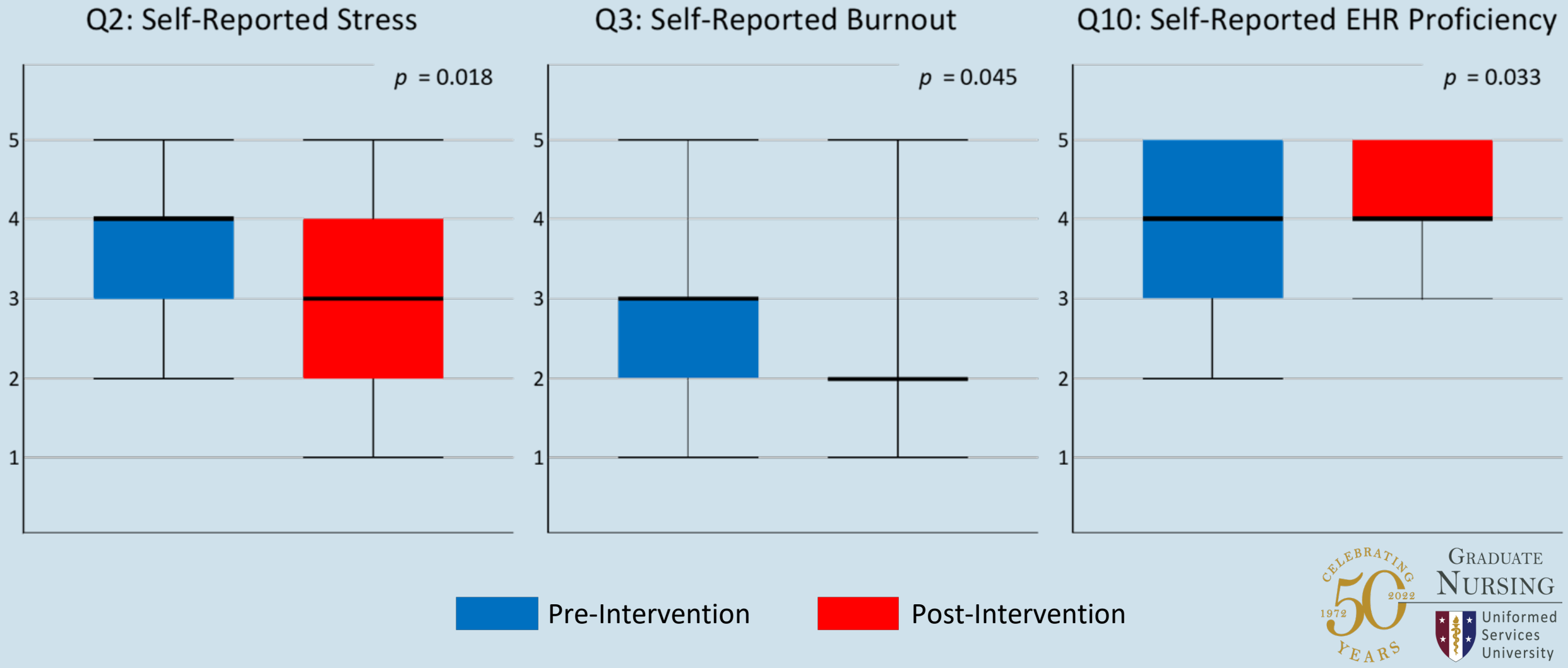
Results: Mini Z Survey

- Analysis showed **statistically significant** ($P < 0.05$) decrease in burnout **after** the implemented intervention
- Q3: Using your own definition of "burnout" please circle the answer below
  - a. I enjoy my work. I have no symptoms of burnout.
  - b. I am under stress, and don't always have as much energy as I did, but I don't feel burned out.
  - c. I am definitely burning out and have one or more symptoms of burnout, e.g., emotional exhaustion.
  - d. The symptoms of burnout that I am experiencing won't go away. I think about work frustrations a lot.
  - e. I feel completely burned out. I am at the point where I may need to seek help.

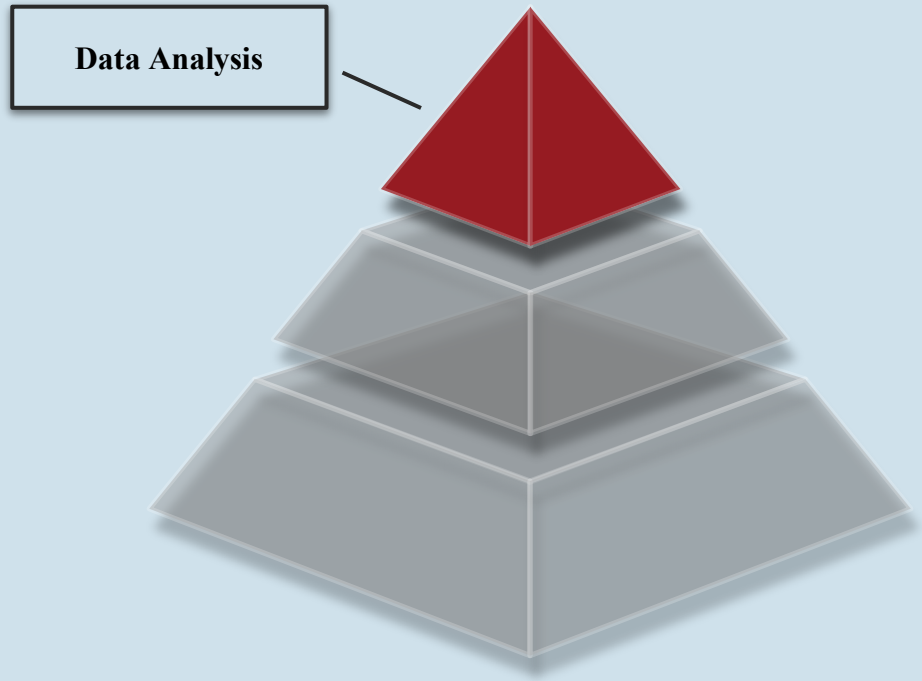
Variable	N	Pre			Post			Change (Post - Pre)			Significant p value
		Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	Median	Lower Quartile	Upper Quartile	
Q3	32	3	2	3	2	2	3	0	-1	0	0.046

Results: Changes within the Participation Group (n=27)



Analysis

- Pre-intervention median scores indicate one or more symptoms of burnout
- Significant improvement in stress and burnout in those attending **even one** 15 minute session
- Significant improvement in electronic health record (EHR) proficiency
- No significant difference by sex, age, experience, role
- Dose dependant effect was indeterminate due to sample size and is an area for future study



Impact & Implications

- Strategic mindfulness tools are effective in combating primary care burnout
- Mindfulness interventions are:
  - Free
  - Readily available with little time demand
  - Easy to implement & practice
- Even brief participation has measurable effect
- Combating and preventing burnout is vital to accomplishing the DHA quadruple aim

(Kemper et al., 2017; Taylor et al., 2016; Roy et al., 2020; Montero-Marin et al., 2018; Kriakous et al., 2020)

Future Directions

- Implement across primary care clinics in the DoD
- Expand to specialty clinics
- Inclusion of more mindfulness options
- Integrate into Newcomer's Orientation
- Engage leaders and champions
- Explore strategies to increase participation
- Class of 2024 to explore organizational barriers and burnout

Conclusion

- Primary care HCWs are reporting high levels of stress and burnout across the nation and at JSBA
- Burnout negatively impacts stakeholders
- As little as 15 mins of mindfulness can make a difference!
- Participation = Burnout reduction
- Primary care settings should consider having mindfulness based interventions available to their team members

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