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Author(s): Kerry S. Kuehl, MD, DrPH

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Final Research Report
Cover Page

Federal Grant Award Number: 2020-R2-CX-0006

Project Title: Corrections Work's Adverse Effects and a Total Worker Health Program to Enhance Well-being (Topic 2) Competition: NIJ-2020-17296

Principal Investigator:

Kerry S Kuehl, MD, DrPH,

Professor of Medicine,

Email: kueh1k@ohsu.edu; Office phone: 503-494-5991,

Oregon Health & Science University, 3181 SW Sam Jackson Park Road Portland, OR 97239

Recipient Organization:

Oregon Health & Science University

3181 SW Sam Jackson Park Road Portland, OR 97239

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1. Summary of Project:

1.a. Major Goals and Objectives:

Our overarching goal was to address organizational stressors of law enforcement work by developing and implementing an innovative, scalable health and safety intervention for corrections professionals. The intervention was based on a model of stress that includes organizational and interpersonal factors, as well as enhancing individuals' wellness abilities. Our findings add to an understanding of those factors and their mitigation.

Objective

We conducted a quasi-experimental pre-post study of a mindfulness-enhanced, web/app-enabled, scalable Total Worker Health (TWH) program among higher stress corrections personnel. The primary outcomes relate to behaviors promoted by the program: being mindful/reduced stress/improved mood; healthier eating; more physical activity; greater restorative sleep; improved work-life balance and greater positive feelings about the organization. Secondary downstream benefits were anticipated in life satisfaction, vascular health/cellular aging, and job performance/injuries/economic costs.

Research Questions:

1. What is the feasibility and acceptability of mindfulness-enhanced TWH program implemented in corrections personnel?
2. What was the effect of the program on primary outcomes?

Research Design, methods, analytical and data analysis techniques for objectives.

The following baseline research design and methods is also published in JMIR Res Protoc 2023;12:e45535 doi: [10.2196/45535](https://doi.org/10.2196/45535) The footnotes reference citations from this publication and can be accessed at this link. <https://www.researchprotocols.org/2023/1/e45535/> and is also included in the Appendix of the final report.

Research design, methods, analytical and data analysis techniques

Study Design

This was a single-arm, prospective, proof-of-concept feasibility and acceptability trial using a pre-post quasi-experimental design comparing baseline measures to 3-month postintervention outcome measures.

Participants

Eligible participants were security and non-security corrections professionals working at two prison sites within the Oregon Department of Corrections (DOC). Study inclusion criterion was having worked at the prison site for a minimum of 6 months, and exclusion criterion was

planning to leave the institution within the next 9 months. One institution was a medium-security male prison, and it employs 325 total, with 190 security staff and 135 non-security. The second site was a medium- and minimum-security women's prison employing 496 total employees, with 262 security staff and 234 non-security.

Enrollment was on a first-come basis, and 79 individuals were enrolled over a 3-month recruitment window. Those included 29 from the first site and 50 from the second site. The intent was to have participants meet as a group on shift for the sessions, and those groups were assigned by researchers and site scheduling administrative personnel.

Confidentiality

The Oregon Health & Science University institutional review board required an explicit safety and monitoring plan approved the study and its procedures. Confidentiality was maintained by having all participant responses assigned a nonmeaningful code number, and these data were stored securely. Participant data was managed using Qualtrics and REDCap (Research Electronic Data Capture, Silver Lake Technology, Menlo Park, CA) tools. This type of survey application using Qualtrics Offline Surveys and REDCap allows securely administering study subject surveys on a mobile device without an internet connection. Both were approved by the Oregon Health & Science University institutional review board for data collection. Each participant signed a consent agreement at enrollment.

Intervention

The program intervention was delivered during a work shift for 30 minutes once a week for 12 weeks with a group of three to six workers. The 30-minute health promotion and safety modules were built utilizing an established e-learning platform called Articulate 360. By providing access to all devices including personal and desktop computers, tablet, and smartphone, Articulate 360 is able to provide a convenient and easy-to-use format with access to apps and games. There was a total of 12 sessions (one session a week for 12 weeks), and each of the sessions contained about 20 wireframes, which are the baseline structures that allow creation of interactive quizzes, games, videos, and links to other content.

This Next Level program content was tailored and customized to the needs and unique stressors of corrections professionals. That is why we designed the initial two sessions to create motivation and build rapport with our participants demonstrating our commitment to them and asking for them to commit to doing the program for 30 minutes while on shift for 12 weeks. In the two initial sessions, we provided some testimonials by local corrections wellness professionals, which were well received as it was "one of their own." We also provided background on the potential program benefits to reduce illness and injury associated with corrections work and providing a scientific relevance for mindfulness in law enforcement workers. The end of session 2 provided a comprehensive overview of the program's content, process, and how they will run the sessions. Session 3 opened with instructions and on-screen icons guiding participants how to run the sessions. The program is very user-friendly and allows participants to run the program themselves. The program sequence and scope of the 12, weekly 30-minute sessions are shown in Table 1.

Session	Content	Mindful In-session Practice	Take Home Daily Practice
1	Background and motivation building	Two-minute guided meditation	Daily two-minute meditation + explore the website
2	Format for and running the sessions	Two-minute guided meditation	Daily two-minute meditation + explore the website
3	Healthy Heart	Box breathing	Daily three-minute meditation + box breathing twice this week
4	Physical Fitness	Three-minute guided meditation	Daily three-minute meditation + walking meditation twice this week
5	Healthy Eating	Mindful eating	Daily three-minute meditation + mindful eating three times this week
6	Mental Fitness	Three minute-gratitude meditation	Daily three-minute meditation + gratitude meditation at least twice this week
7	Halfway Check-in	Three-minute guided meditation	Daily three-minute meditation + review
8	Sleep	Body scan	Daily five-minute meditation + bedtime body scan twice this week
9	Injury Prevention	Three-minute guided meditation	Daily five-minute meditation + review situational awareness
10	Resilience	Three-minute guided meditation	Daily five-minute meditation + mental health
11	Medical Check-up	Three-minute guided self-compassions meditation	Daily five-minute meditation + at least two self-compassion meditations
12	Wrap-up and Next Steps for Next Level	Three-minute guided meditation	Daily five-minute meditation + next steps

Program sessions 4 through 12 followed the same format beginning with a brief follow-up on behavioral objectives and goals from the prior session. This allowed subjects a comfortable space and time to problem solve challenges and engage in positive social support. Next, background and scientific knowledge for the session's wellness and safety topic were presented including active learning such as matching games, completing quizzes, or watching a short video. Approximately halfway through each session, mindfulness was presented, and participants were introduced to a new mindfulness skill, or they were given time to practice a 3- to 5-minute seated meditation. Each session had a wrap-up that provided instructions on daily mindfulness practice goals for the week. These mindfulness practice objectives were then revisited at the beginning of each session, with individuals sharing in their success or challenges. The economic value of this program is that it did not require a trained instructor or personnel. The corrections professionals on a shift could easily conduct the program without difficulty guided by icons on the screen and the scripted curriculum.

This program was similar in content and formatting to other occupational settings that had coworkers running the sessions successfully. Peer-led health and safety programs have demonstrated efficacy and reduced expense, created team cohesion with shared norms, and promoted a sense of positive peer support and behavior change.

The program had a special customized-designed website portal that was easily accessible for participants on a computer desktop, tablet, or smartphone on all operating systems. The website landing page (<https://correctionsnextlevel.org/>) included a menu of (1) how to practice mindfulness with guided meditations, (2) the program sessions, (3) resources with pdfs and links to session health and safety topics, and (4) research staff contact info. On the specific session page, there was a link to launch the session, a reminder and links for weekly practices exercises, the meditation practiced in that session, and resources relating to that session's topic.

Surveys and Data Collection

The pre- and post-study surveys included individual items relating program objectives and construct variables using validated instruments. The latter instruments included mindfulness, mindful eating, mindful physical activity, sleep, overall stress, depression, work-related stress, and job satisfaction. Intervention program acceptance and whether they would recommend the program to others were included in the postintervention survey. Items were answered using an agreement scale from 1 = strongly disagree to 7 = strongly agree. The post-intervention survey used the same scale and was administered after participants completed the program. The instruments are included in the data archive deposit and in the appendix of this final report.

Data Analysis Techniques

Preliminary analyses included descriptive statistics and distributions for each of the variables. Although this was primarily a feasibility and acceptability trial, we examined intervention effects on outcomes. Paired 2-tailed t tests assessed pre- and post-intervention survey within-group changes. Observed effect sizes were also calculated by Cohen d dividing the mean difference (subtracting postintervention survey mean from baseline) by the average SD of both repeated measures. The effect sizes are referred as small ($d = 0.2$), medium ($d = 0.5$), and large ($d = 0.8$) based on Cohen suggested benchmarks. Statistical significance was set at 0.01 to decrease type 1 error due to the multiple comparisons. The postintervention survey items concerning reaction to the program and self-assessed changes were assessed using mean and SD. The analyses were performed using Stata (version 17; StataCorp, College Station, TX).

Expected applicability of the research

This project used highly innovative demonstration of the feasibility and acceptability of a mindfulness enhanced TWH program. The objectives were achieved and now this intervention can be studied in other settings. Despite the added job stress and worksite turbulence, program participants had several positive outcomes. Corrections personnel have one of the highest missed days of work and health care costs of any occupation. Occupational stress is estimated to cost up to \$300 billion annually in the United States. Mindfulness has demonstrated effectiveness in reducing stress-related illness and injury but requires extensive time and costs associated with this work-based training. This novel format for mindfulness training was feasible and acceptable to corrections professionals, especially notable in the context of the understaffed and

overburdened stressful corrections environment. This work adds to field because it suggests that dedicating small amounts of time to health and wellness can lead to cumulative improvements over time.

This project used an innovative mindfulness enhanced Total Worker Health program that could be conducted by any correctional professional utilizing only 30 minutes of their shift and with little associated costs. Given the common stressors experienced by correctional professionals (e.g., mandatory overtime, number of overtime shifts in a row, staff shortages), this format for mindfulness training was feasible and resulted in improvements in their health and wellness.

Total Worker Health includes individual and organizational strategies to protect and advance the well-being of workers. A limitation of the program is that it focused only on the individual level and was not able to address the organizational and policy issues, which are a source of corrections professionals' stress (i.e., mandatory overtime, overtime shifts in a row). Another limitation regarding the generalizability of these findings was that this project was conducted in one state among two prisons, and it is known that differences exist in each regional correctional system having unique structural, organizational, and personnel factors. Additionally, participants were not a random sample of these workers. Despite the limitations, the novelty of this on-shift, web-based, 30-minute once-per-week-for-12-weeks TWH + mindfulness program provided sufficient outcome numbers that it can inform a subsequent larger randomized controlled trial of the program in this and other settings. The potential benefits of this innovative worksite wellness and mindfulness program target a high-risk occupational group to improve their health and well-being.

Participants and other collaborating organizations

In addition to the research participants enrolled in the project, the Oregon Department of Corrections executive leadership team, research leadership committee and wellness committee chair collaborated in all aspects of this project.

Changes in approach from original design and reason for change, if applicable

We initiated testing for vascular reactivity and discontinued it. The Principal Investigator, who is a medical doctor, was concerned about the risk of occluding participants' upper arm blood flow for 5 minutes. Our subjects had several cardiac risk factors (e.g., hypertension, obesity, physical inactivity) and completing collection of this data was not justified.

Outcomes

Activities/ Accomplishment

As detailed in our bi-annual progress reports and in the results and products section below, the research team has completed numerous activities in support of the aims. The activities not captured in the results and products section are detailed here: training junior research personnel,

creating surveys with reliable constructs, drafting research protocols, completing data compilation and cleaning, maintaining institutional review board approvals, completing all internal and external reporting requirements, meeting regularly with stakeholders at the Oregon DOC.

Results/Findings

Results

A total of 79 participants enrolled and completed the pre-intervention study assessment. Among the 79 participants completing the pre-intervention study, 54 (68%) completed the post-intervention survey. The participant demographics and completion rates were not different for the two sites, and data were combined. The 25 non-completers included 6 who declined ongoing participation, 2 on medical leave, and 17 who did not respond to multiple attempts to contact them. The demographics are shown in Table 2.

Table 2. Participant Demographics	
	Total (n=79)
Race/Ethnicity	
American Indian or Alaska Native	1 (1%)
Asian	2 (3%)
Black or African American	2 (3%)
Hispanic, Latino or Spanish origin	6 (8%)
Native Hawaiian or Pacific Islander	1 (1%)
White	56 (71%)
Other	1 (1%)
More than one selected	10 (13%)
Age (years)	44.5 ± 10.1
Current gender identity	
Woman	39 (49%)
Man	39 (49%)
Missing	1 (1%)
Education	
High school / GED	6 (8%)
Some college but no degree	31 (39%)
Associate degree in college (2-year)	12 (15%)
Bachelor's degree in college (4-year)	22 (28%)
Advanced degree (Master's, PhD, MD)	8 (10%)
Relationship status	
Married or otherwise partnered	50 (63%)
Separated	5 (6%)
Divorced	11 (14%)
Single, never married	13 (16%)
Years working in corrections	12.4 ± 8.1

The intervention was user-friendly, feasible during the work shift, delivered with high fidelity, and acceptable to corrections professionals. We observed 33% of the sessions. The average length was 28.7 ± 7.4 minutes. By self-report, the majority of individuals ($n = 41$ [76%]) reported completing 8 or more of the 12 sessions, and 70% used the intended group format, the remaining completed the sessions as individuals. Prior to the program, only five individuals meditated regularly, whereas after the program, 24 (44%) reported regular meditation. For the post-intervention items (Table 3) as evident by the consistently positive responses on a 7-point agreement scale from 1 = strongly disagree, 4 = neutral, and 7 = strongly agree, participants reported benefits of the program. Mindfulness was a component of all sessions, and it was highly rated as an important program component.

Table 3. Post-only Acceptance Items	
	Mean \pm SD*
This program improved my health.	5.3 \pm 1.1
This program improved my safety.	4.7 \pm 1.2
This program was easy to use.	5.6 \pm 1.3
This program should be part of our training.	5.8 \pm 1.1
I would recommend this program to my coworkers.	6.0 \pm 0.9
Mindfulness was an important component of this program.	6.2 \pm 0.8
I have incorporated meditation as part of my lifestyle.	5.0 \pm 1.4
My co-workers helped me stay on track with the program.	4.9 \pm 1.9

* 1 = Strongly disagree to 7 = Strongly agree

Tables 4 and 5 present the outcomes for the constructs and individual pre- to post-intervention survey items. As shown by the reliabilities, the construct instruments performed well among these participants prior to the intervention. There was a trend toward greater overall mindfulness (Cohen $d = 0.25$, $p = 0.07$) and mindful eating (Cohen $d = 0.26$, $p = 0.06$). Sleep disturbances were improved significantly (Cohen $d = -0.47$, $p < 0.001$), and with the single-item assessments of physical activity, vigorous regular exercise increased (Cohen $d = 0.34$, $P = 0.01$). Daily servings of fruits and vegetables were assessed with a single item (0 = no servings to 7 = seven or more each day), which did not change (Cohen $d = 0.05$, $p = 0.70$). Although participants were more aware of the needed health maintenance assessments (Cohen $d = 0.41$, $p < 0.005$), they did not change their perceived importance of having a primary care physician (Cohen $d = 0.12$, $p = 0.36$). Regarding our hypothesized secondary outcomes, a paradoxical trend toward greater perceived stress was observed (Cohen $d = 0.25$, $p = 0.07$). Although overall stress did not change, most gained abilities to use breathing to reduce stress (Cohen $d = 0.49$, $p < 0.001$).

Although no significant change was observed in job stress, overall job satisfaction significantly decreased (Cohen $d = -0.41$, $p < 0.001$).

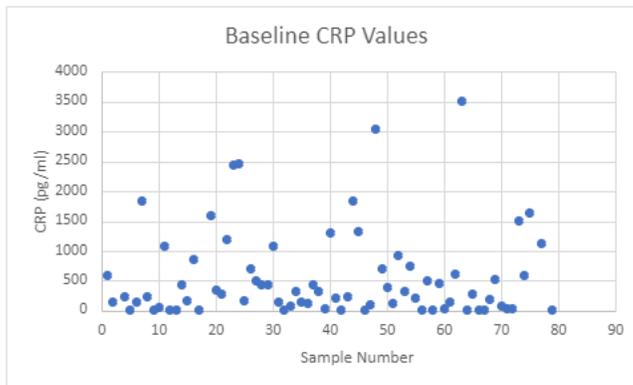
Table 4. Pre- to Post Construct Variables						
Construct	Reliability	Pre-	Post-	Mean Change (95% CI)	Cohen's d	p
Perceived Stress	0.8	8.9 ± 2.4	9.6 ± 2.7	0.63 (-0.06, 1.31)	0.25	0.07
Mindful Awareness Attention Scale	0.9	3.6 ± 0.8	3.8 ± 0.9	0.18 (-0.02, 0.38)	0.25	0.07
Mindful Eating Scale	0.6	2.4 ± 0.4	2.5 ± 0.5	0.08 (-0.01, 0.17)	0.26	0.06
State Mindfulness Physical Activity Scale	0.9	2.2 ± 1.0	2.4 ± 0.8	0.15 (-0.09, 0.41)	0.17	0.22
Depression	0.8	4.2 ± 3.1	3.8 ± 3.2	-0.48 (-1.22, 0.26)	-0.17	0.20
Sleep Disturbance scale	0.9	25.4 ± 6.8	22.4 ± 6.8	-3.07 (-4.76, -1.38)	-0.49	0.0006
Stress at Work	0.9	3.2 ± 0.7	3.2 ± 0.7	-0.01 (-0.15, 0.13)	-0.02	0.85

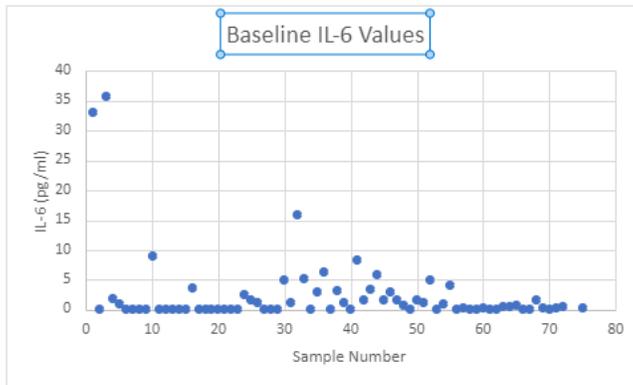
Table 5. Pre- to Post- Selected Single Survey Items					
	Pre-	Post-	Mean change	Cohen's d	p

			(95% CI)		
In the last month, how many days per week did you take part in physical activities that made you sweat and breathe hard for at least 30 minutes	1.31 ± 1.66	1.94 ± 1.76	0.63 (0.13, 1.13)	0.34	0.01
In the last month, how many days per week did you take part in moderate physical activities that that increased your breathing for at least 30 minutes during the day	2.17 ± 1.81	2.80 ± 1.81	0.63 (0.08, 1.18)	0.31	0.03
I know how to use breathing to lower my stress level	5.07 ± 1.24	5.74 ± 0.87	0.67 (0.29, 1.04)	0.49	0.0007
I know how to calm myself in preparation for sleep	4.48 ± 1.61	5.59 ± 1.02	1.11 (0.64, 1.58)	0.64	<0.001
It is important for me to have a primary care physician	5.44 ± 1.87	5.72 ± 1.75	0.28 (-0.32, 0.88)	0.12	0.36
I know what tests are recommended to maintain my health	4.70 ± 1.55	5.44 ± 1.45	0.74 (0.24, 1.23)	0.41	0.004

Blood Biomarker Data

We completed the processing of blood samples from study participants drawn at baseline and post-intervention data collection and conducted blood assays for inflammation markers. Data for C-Reactive Protein (CRP) and Interleukin-6 (IL-6) are shown in the figures below:





Blood Biomarker Pre-Post Data

We conducted analysis of blood biomarkers for the baseline and first follow-up (post-intervention) testing time points. We performed venipuncture for a blood specimen and used a combination of methods to assess cellular aging: cellular staining for senescence associated β -gal (Senescence Cells Histochemical Staining Kit, Sigma); senescence associated proteins using Western blot; and senescence marker antibody sampling kits to stain for p16, p21, phospho-histone H2AX, Lamin B1, HMGB1, MMP3, and cytokine IL6 and TNF- α . We also determined the telomerase activity in cell extracts through its ability to synthesize telomeric repeats onto an oligonucleotide substrate, which is amplified by polymerase chain reaction, using the TRAPEZE® RT Telomerase Detection kit (Sigma). The relative quantification of gene expression will be determined using the $2^{-\Delta\Delta C_t}$ method with control RNAs appropriate for blood, and a comprehensive senescence phenotype profile will be obtained using the Human Cellular Senescence array (SA Biosciences).

	Baseline	Post-intervention	Mean change	P*
Interleukin-6	1.71 (2.73)	2.11 (5.16)	4.04 (-0.66, 1.45)	0.45
TNF-alpha	0.57 (2.76)	0.002 (0.002)	-0.57 (-1.34, 0.20)	0.14
C-reactive protein	0.24 (0.31)	0.33 (0.46)	0.08 (-0.02, 0.18)	0.10
Cellular senescence (RFU)	114017.2 (47195.96)	123642 (155357.7)	9624.78 (-37103.73, 56353.29)	0.68

We did not find any statistical significance for the laboratory values, such as C-reactive protein (CRP), Interleukin-6 (IL-6), tumor necrotic factor (TNF- α) or cellular senescence (RFU) because of the small sample size. The study was not powered based on the laboratory values.

We examined the correlation between change in the laboratory values (CRP, IL-6, TNF- α , and RFU) and change in statistically significant positive outcomes (MEQ-awareness scale, sleep disturbance, and job satisfaction) using Pearson correlation. We did not find any statistically significant correlations.

Endothelium Vascular Reactivity Data

We initiated testing for vascular reactivity. The principal investigator, who is a medical doctor, and who performed the testing was concerned about the methodology of occluding participants' upper arm blood flow for 5 minutes. Accordingly, we discontinued the vascular reactivity assessment.

Discussion

This study evaluated the effects of an innovative occupational health, safety, and mindfulness program among a high-stress group of correctional professionals. This scalable intervention was done while on their work shifts for 30 minutes once a week for 12 weeks and was feasible and delivered with high fidelity. Almost half of participants were regularly meditating following the Next Level program, a finding accompanied by a trend toward overall greater indices of mindfulness. Those in the program reported reduced sleep disturbances, improved physical activity, and increased awareness of primary care health maintenance needs. At post-intervention survey, greater than 80% of participants agreed or strongly agreed that the program was easy to use and would recommend it to other corrections professionals.

Mindfulness has demonstrated effectiveness to improve worker wellness, but the usual format requiring a trained skilled professional and time away from work for employees to receive the training limits adoption of this important tool. This Next Level program is a unique combination of a worksite wellness program combining technology, with e-learning in a work group format adding mindfulness training as a skill comparable to healthy eating, regular physical activity, and safety awareness.

The format described in this protocol was delivered once per week for 12 weeks, conducted at a prison setting during a work shift in a 30-minute session. The self-directed groups consisted of correction professionals, who work together, receiving 30 minutes away from their duties to meet in a conference room with the program content accessible on a smartphone, tablet, or laptop. This positive proof-of-concept trial is a new model for adding mindfulness training to other components of TWH.

The participants' overall perceived stress level did not change during the study. Participants appeared to be neither a highly stressed or low-stress subgroup, as their stress levels were comparable to the average value of 9.3 ± 2.7 (mean \pm SD) that we observed among a prior cross-sectional study of more than 300 corrections professionals. Surprisingly, the job satisfaction went down during the trial, which is opposite of the usual response to mindfulness training.⁴⁵ Job satisfaction is multi-dimensional, and the items in our construct included satisfaction, pride in their work, and suitability for their job. Because calibration for those scales resides in the participants, a metric's scaling can shift as a result of a program, making pre- to post-intervention comparisons problematic. Perhaps some of the decrement in satisfaction related to a response bias shift and recalibrating the scale with the reflection afforded by the intervention.

Another factor potentially affecting job satisfaction was the turbulent time for the Oregon DOC during the study period. The short staffing and mandatory overtime affected all Oregon DOC prisons but was particularly burdensome at our two intervention sites. Newspaper articles documented the staff shortage and overtime including 17-hour shifts, multiple days per week. The mandated overtime was often unexpected, occurring during the end of a shift with the officer required to stay an additional 8 hours. This is highly detrimental to personal and family life including missing

out on a “kid’s birthday or important anniversary.” Another occurrence that may have contributed to reduced job satisfaction after the intervention and the relatively high lost-to-follow-up rate may have been due to unforeseen stress and turbulence during the intervention period at one of the study sites. Coupled with the staff shortage and officers working four long shifts in a row, this may have impacted the post-intervention job satisfaction scores.

Despite the added job stress and worksite turbulence, Next Level participants had several positive outcomes. We are collecting injury, illness, missed days of work, and worker compensation claims for a year before and after the program among our study participants compared with the non-study corrections personnel to see if there was an economic benefit. Corrections personnel have one of the highest missed days of work and health care costs of any occupation. Occupational stress is estimated to cost up to \$300 billion annually in the United States. Mindfulness has demonstrated effectiveness in reducing stress-related illness and injury but requires extensive time and costs associated with this work-based training. This novel format for mindfulness training was feasible and acceptable to corrections professionals, especially notable in the context of the understaffed and overburdened stressful corrections environment.

Limitations

Total Worker Health includes individual and organizational strategies to protect and advance the well-being of workers. A limitation of the Next Level program is that it focused only on the individual level and was not able to address the organizational and policy issues, which are a source of corrections professionals stress (ie, mandatory overtime, overtime shifts in a row, etc). Another limitation regarding the generalizability of these findings was that this project was conducted in one state among two prisons, and it is known that differences exist in each regional correctional system having unique structural, organizational, and personnel factors. Additionally, participants were not a random sample of these workers. Despite the limitations, the novelty of this on-shift, web-based, 30-minute once-per-week-for-12-weeks TWH + mindfulness program provided sufficient outcome numbers that it can inform a subsequent larger randomized controlled trial of the program in this and other settings. The potential benefits of this innovative worksite wellness and mindfulness program target a high-risk occupational group to improve their health and well-being.

Artifacts

Products

1. Elliot DL, Kuehl K, DeFrancesco C, McGinnis W, Ek S, Van Horne A, Kempny K
Technology-enabled Intervention to Enhance Mindfulness, Safety, and Health Promotion among Corrections Professionals JMIR Research Protocols. 06/07/2023:45535 PMID: 36602914. <https://www.researchprotocols.org/2023/1/e45535/>¹
2. Demonstration project website: Next Level Total Worker Health Program for Corrections Professionals. <https://correctionsnextlevel.org/sessions/#sessionslist>
3. Kuehl KS, Elliot DL, DeFrancesco C, McGinnis W, Ek S, Van Horne A, Kempny K, Garg B. An Innovative Model to Add Mindfulness to Total Worker Health Training: A Feasibility and Acceptability Trial. J Occup Environ Med. 2025 Jan 1;67(1):e47-e53. doi: 10.1097/JOM.0000000000003261. Epub 2024 Oct 22. PMID: 39473286.

Data sets

The data generated from this research includes a de-identified data set (participant ID numbers only) among a sample of corrections professionals working for the Oregon Department of Corrections. Baseline and follow-up survey data includes demographic and work history variables, occupational constructs, validated instruments for mindfulness, mindful eating, mindful physical activity, sleep, overall stress, depression, work-related stress and job satisfaction. The post-intervention surveys also included items related to program acceptance and feasibility.

Dissemination Activities

Grant submission to extend into other populations

1. Kuehl, K PI: NIJ Corrections grant – application number: GRANT14137355. Efficacy of a Safety, Health and Mindfulness Program to Enhance the Well-being of Corrections; resubmitting in 2025, pending NOFO
2. Kuehl, K PI: NIJ Police grant – application number: GRANT14147517. Feasibility and Impact of a Worksite Health, Safety and Mindfulness Program for Police Officers' Wellness; resubmitting in 2025, pending NOFO
3. Dr. Jason Gabel, Chief, National Employee Wellness Branch at Federal Bureau of Prisons (BOP). Drs Kuehl, Elliot and Gabel are exploring a federal prison pilot study in Sheridan Oregon to disseminate to all federal BOP workers with grant funding.
4. NIH/NCCIH R34 grant submission June 2025. Drs. Kuehl and Elliot met with Dr. Baumgartner, Program Director, Clinical Research in Complementary and Integrative Health Branch, to discuss R34 submission and planned to attend a 2-day workshop at NIH until it was cancelled.
5. Dr. Kuehl is medical director of the Portland Police Bureau and is working with their health, safety and training division collecting cross-sectional data for a future grant submission extending this mindfulness research.
6. Drs. Kuehl and Elliot are working with Dr. Kempany research director at Oregon Department of Corrections and executive health and safety team to implement this program in all Oregon DOC facilities and submitted a budget for this effort.

Conferences

7. Presentation: *Mindfulness Safety and Health Promotion* for AFSCME (American Federation of State, County and Municipal Employees) Public Safety Conference lead by Mike Deahn of AFSCME International Corporate Affairs & Strategic Research (CASR) Organizing & Field Services – Drs. Kuehl and Elliot are involved with ongoing strategic planning with Mike Deahn discussing possibilities for incorporating program into their contract for wellness benefits in a wide variety of settings including police and corrections.
8. Presentation: *Staff Health and Wellness – A study revealing Corrections Officer Longevity* for US Deputy Wardens Association Conference. Drs. Kuehl and Elliot will present July 28, 2025.