The Effects of Platoon Leader Mental Health and Resilience Training on Soldier Problematic Anger

Leslie Hammer *; *Krista Brockwood* *; *Jennifer Dimoff* †; *Shalene Allen* ‡; *Cynthia Mohr* ‡; *Michael Dretsch* §; *James Lee* ‖; *Thomas Britt* ¶

ABSTRACT

Introduction:

The DoD has prioritized programs to optimize readiness by enhancing resilience of its service members. Problematic anger in the military is an issue that impacts psychological well-being and resilience. Leader support is a potential tactic for reducing anger and its effects. Currently military resilience training is focused on individual level resilience. A gap exists in such training and there is a need to train leaders to provide mental health and resilience support to their subordinates. The present study developed and tested a theory-based training aimed at platoon leaders that focused on how to engage in proactive and responsive mental health and resilience-supportive behaviors through guided discussion, scenarios, and computer-based training with embedded quizzes.

Materials and Methods:

We conducted an Institutional Review Board–approved cluster randomized controlled trial to test the effects of a leadership training with Army platoon leaders ($n = 99$) and soldiers ($n = 276$) in 2 brigades at an active duty military installation in the USA. Training was conducted in person with a computer-based component. Soldiers completed online surveys 1 month prior and again 3 months after the leader training.

Results:

Post-training results demonstrated significant leader learning effects (Cohen's $d = 1.56$) and leader positive reactions to the training information, with leaders reporting the information as useful and relevant to their work. Service members in the treatment group reported significantly lower levels of anger at time 2 ($b = –0.18$, $SE = 0.06$, $P = .002$, pseudo $\Delta R^2 = 0.01$; $d = 0.27$) compared to the control group. We also found an indirect effect of the intervention on increased life satisfaction at time 2 via decreased anger ($b = 0.035$, $SE = 0.023$, 95% CI = [0.004-0.24]).

Conclusions:

This study provides an initial evaluation of training for platoon leaders that educates them on proactive and responsive behavioral strategies to support the mental health and resilience of their service members via decreased problematic anger and increased well-being. Further adaptations and evaluations should be conducted with other military branches and civilian occupations, as the benefits of the relatively brief and noninvasive training could be widespread.

Close to 8% of the adult population has difficulty controlling their anger,[1] and these numbers are dramatically higher among trauma-affected populations such as the military, ranging from 10 to 31%.[2] Anger is considered problematic when it is maladaptive or pathological and is a risk factor for hurting oneself or hurting others and for more severe psychiatric disorders such as PTSD and suicidality.[2–4] Moreover, anger and aggression have been found to increase over time among service members (SMs) and continue to affect veterans after military separation.[5]

Anger also has an impact on, and is impacted by, workplace dynamics and domestic relationships, crossing over between the 2 domains and affecting individual and unit military readiness.[6] Thus, anger may manifest in the military as decreased readiness and resilience, which makes it particularly important to study and understand ways to mitigate. Although there is a need for prevention and early intervention, few, if any, workplace interventions exist.[6] Increasing leader support for soldiers, which has been identified as a protective factor against psychological distress and other behavioral health outcomes[6] through interventions such as training leaders on social support strategies, may be a way to reduce anger

*Oregon Institute of Occupational Health Sciences, Oregon Health & Science University, Portland, OR 97239, USA

†Telfar School of Management, University of Ottawa, Ottawa, Ontario K1N 6N5, Canada

‡Department of Psychology, Portland State University, Portland, OR 97201, USA

§US Army Medical Research Directorate-West, Walter Reed Army Institute of Research, Joint Base Lewis-McChord, WA 98433, USA

‖Army Research Institute, Ft Moore, GA 31995, USA

¶College of Behavioral, Social and Health Sciences, Clemson University, Clemson, SC 29634, USA

This work was presented at the Military Health System Research Symposium, which was held in August 2023 in Kissimmee, FL. MHSRS-23-09722.

The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the true views of the Department of the Army or the DoD.

doi:https://doi.org/10.1093/milmed/usae171

and its associated outcomes in the military. Reducing problematic anger and thereby reducing psychological distress and harmful behaviors, both to self and others, should ultimately affect readiness and resilience. This study addresses the lack of evidence-based interventions for military leaders that are aimed at improving psychological health and well-being and reducing problematic anger of SMs by evaluating, in a randomized controlled trial, the effects of mental health and resilience leader support training in an active duty military setting. This is an initial evaluation of the training on the behavioral health risk factor of anger.

Problematic Anger

When anger is problematic, it can impact ability to recover from trauma, affecting SM performance. The inability to manage and express anger constructively leads to negative outcomes such as aggressive, anti-social behaviors (e.g., physical violence to self and verbal abuse) and alcohol consumption.[2] Furthermore, findings affirm the link between SM anger and suicide, even when controlling for factors such as depression, PTSD, and demographics.[7–9]

Although problematic anger is associated with combat exposure,[8] anger can also serve in an adaptive role in the military, as it may motivate behavior in the face of a threat.[2] Thus, although anger may be adaptive in some military situations, it becomes problematic when it generalizes to other areas of life, beyond those of threat. Such overgeneralization is characteristic of problematic anger[2] and has been shown to increase up to 5 years following separation from the military, based on the results from the Millennium Cohort Study.[7] The maladaptive associations of problematic anger with suicidality within active duty SMs,[10] as well as that among veterans,[11] are particularly concerning. Given that problematic anger is a risk factor for suicidality, aggression against others, and mental health problems among SMs,[3,4] the military's occupational health context may be a venue for non-clinical interventions. Although substantial data exist on the prevalence and associations of problematic anger with both operational performance and behavioral health outcomes of SMs, little research exists on ways of ameliorating and preventing such anger.[6] Furthermore, interventions aimed at preventing anger have largely been indirect, with a primary focus on PTSD treatment among veterans. It is suggested, however, that primary prevention through organizational strategies be given more attention.[6]

Leader Social Support Related to Decreased Subordinate Anger

Given that anger has been found to be buffered by social support,[8,11] strengthening leader social support for subordinates may be a useful strategy for effective anger-focused preventative approaches.[12,13] The role of supervisors and leaders in influencing anger (positively or negatively) in the workplace is significant, given their ability to influence rewards and provide information on policies that facilitates access to programs.[6] Likewise, leader social support has been found to be related to reduce harmful behaviors such as suicide risk among active duty SMs[14] and veterans[11] and improve psychological health and well-being among full-time National Guard members.[15] It has been suggested that leaders who are supportive usually have subordinates who are less likely to experience anger outbursts.[13] Similarly, a recent study found that training supervisors to increase social support for employees resulted in reduced instances of abusive supervision, a form of anger.[16] Given that intense occupational stress (e.g., deployment stressors, family separation, and work overload) experienced by military employees puts them at increased risk for mental health challenges[17] and social support resources from ones' supervisor have been associated with increased reports of positive mental health by military SMs,[18] increasing exposure to social support from leaders can have beneficial effects on SMs leading to reductions in anger and increased well-being. This suggests that training leaders on social support strategies related to such domains as increased resilience and mental health support should have promising effects.

Researchers from the Walter Reed Army Institute of Research developed the concept of mental health-specific leadership, or behaviors that impact mental health outcomes of subordinates.[19] Unlike general leadership behaviors, mental health-specific leadership behaviors focus on the domain of mental health and are intended to affect a targeted set of mental health outcomes. These leadership behaviors are related to the broader concept of behavioral health–specific leadership that includes actions or behaviors that are focused on health-related outcomes, specifically those of stress, depression, and mental health, of their subordinates.[19] Drawing on the concept of behavioral health leadership, leadership trainings that focus on social connectedness and social support as a way to improve psychological health of subordinates have been shown to be effective.[15,20] The present study examines the impact of leader support training related to improved resilience and mental health support on SM anger, a critical risk factor of mental health disorders.[2–4]

Present Study

The present study supports the DoD's priorities[21] to optimize psychological health and readiness and was developed and evaluated with active duty Army platoon leaders and junior military leaders who oversee groups of approximately 36 soldiers, in 2 combat brigades at a large military base. Optimizing military readiness and performance has been at the forefront of the DoD for many years, as military members have faced nearly decades of conflict.[22]

The training content evaluated in the present study is focused on teaching platoon leaders and platoon sergeants (i.e., Platoon Leadership Teams; PLTs) how to support the development of resilience among their SMs. The training involving guided discussions, videos, scenarios, and intermittent micro-learning checks. Drawing on prior supervisor support training scholarly work[23] and best practices on training

leaders to support employee mental health,[24,25] we hypothesized that (H1) PLTs will demonstrate significantly increased knowledge of proactive and responsive mental health and resilience supportive strategies from pre-test to post-test; (H2) PLTs will report positive reactions to the training based on ratings of favorability, utility, and relevance to their jobs; and (H3) SMs in the training condition will report decreased problematic anger and improved well-being compared to the SMs in the control condition 4 months following baseline data collection.

METHODS

Study Overview and Participants

The current study utilized a randomized controlled trial randomized at the battalion level across 2 combat brigades, with 5 battalions each in the treatment and control conditions, all from 1 active duty military installation in the Northwest USA. The study ran from 2019 to 2022, with data collection and intervention activities occurring primarily in 2020 to 2021, coinciding with the Corona Virus-19 pandemic. The training was directed at the PLTs in the 5 battalions randomized to the training condition, with a usual practice waitlist control group. Evaluation data were collected from both the leaders in the treatment group (i.e., reaction and learning) as well as from SMs in the treatment and control conditions (i.e., baseline and four-month baseline follow-up surveys). The DoD Human Research Protection Office and the Institutional Review Board of the first author's institution approved all study protocols, and participants provided informed consent before any data collection. An advisory team comprising personnel (i.e., soldiers, PLTs, chaplains, and behavioral health officers) of different levels from the base provided critical insight and advice at each step of the study. The research team met quarterly with the advisory team during the first year of the study and then as needed.

PLT training participants

We identified and invited 146 platoon leaders who were members of PLTs in the randomized battalions to take part in one of 18 90-minute, in-person training sessions during the month of October 2020. A total of 99 (67.8%) platoon leaders attended and consented to the use of their data. Of the leaders who completed the training, 50% were lieutenants or captains and 50% were experienced noncommissioned officers (e.g., E6-E7 paygrades). We did not collect any other demographic information on the leaders.

SM survey participants

We worked with the leadership at the division level to recruit volunteers from subordinate units (brigades/platoons) to complete baseline and 4-month follow-up surveys. All participants within the 10 battalions (~5000 soldiers) were directed to log into the survey, opt in or out, and provide their name and unit. A total of 4189 (83.3%) logged into the survey and provided the requested information, and 3985 (70%) provided informed consent. Completion of the survey was completely voluntary and required participants to first provide informed consent. For baseline, a total of 2216 completed at least 70% of the survey. A much smaller number ($n = 813$) completed the follow-up survey 4 months later, likely because of competing surveys and field assignments, with 276 soldiers completing both the baseline and 4-month follow-up surveys. Allocation to treatment and control groups was evenly split (see Fig. 1, for CONSORT diagram).

Procedure

Survey delivery

One month before training delivery, soldiers were provided with study information and a website link to access the online survey from their chain of command. Soldiers initially provided informed consent and were invited to complete the survey, which took about 20 minutes. Leaders did not know which soldiers participated. No incentives were provided to complete the survey, but the top participating platoons were given a pizza party. The procedure was the same for the follow-up survey, approximately 1 to 2 months after the training/4 months post-baseline survey. Using participant names, we matched baseline and follow-up surveys.

Training delivery and content

A total of 18 training sessions were delivered to the 5 battalions in the training condition on base. Before the presentation of any information, trainees provided informed consent for use of their data and then completed a knowledge pre-test of 8 questions related to the training content. After the training was complete, participants completed the same knowledge test as well as several reaction questions. To ensure the fidelity of the implementation of the training intervention, all training sessions were conducted by the first author of this paper. Additionally, we implemented a fidelity checklist to ensure that the critical elements and core principles of the training were covered.

The Resilience-Supportive Leadership Training (RESULT) consisted of a combination of in-person and computer-based training on supportive supervision as well as several post-training activities. See Table I for the overview and timing of the 90-minute training session.

Six evidence-based proactive and responsive supportive strategies were the central focus and were included in the computer-based training (Table II). The training included 3 "proactive" supportive strategies:[26] (1) "Emotional support" which taught leaders the importance of showing that they hear and understand their SMs and welcome their input, enabling them to feel a sense of psychological safety. This also includes showing empathy and understanding and demonstrating they care about their family and personal lives; (2) "practical support" that taught leaders how to make practical adjustments to help SMs meet ongoing workplace and

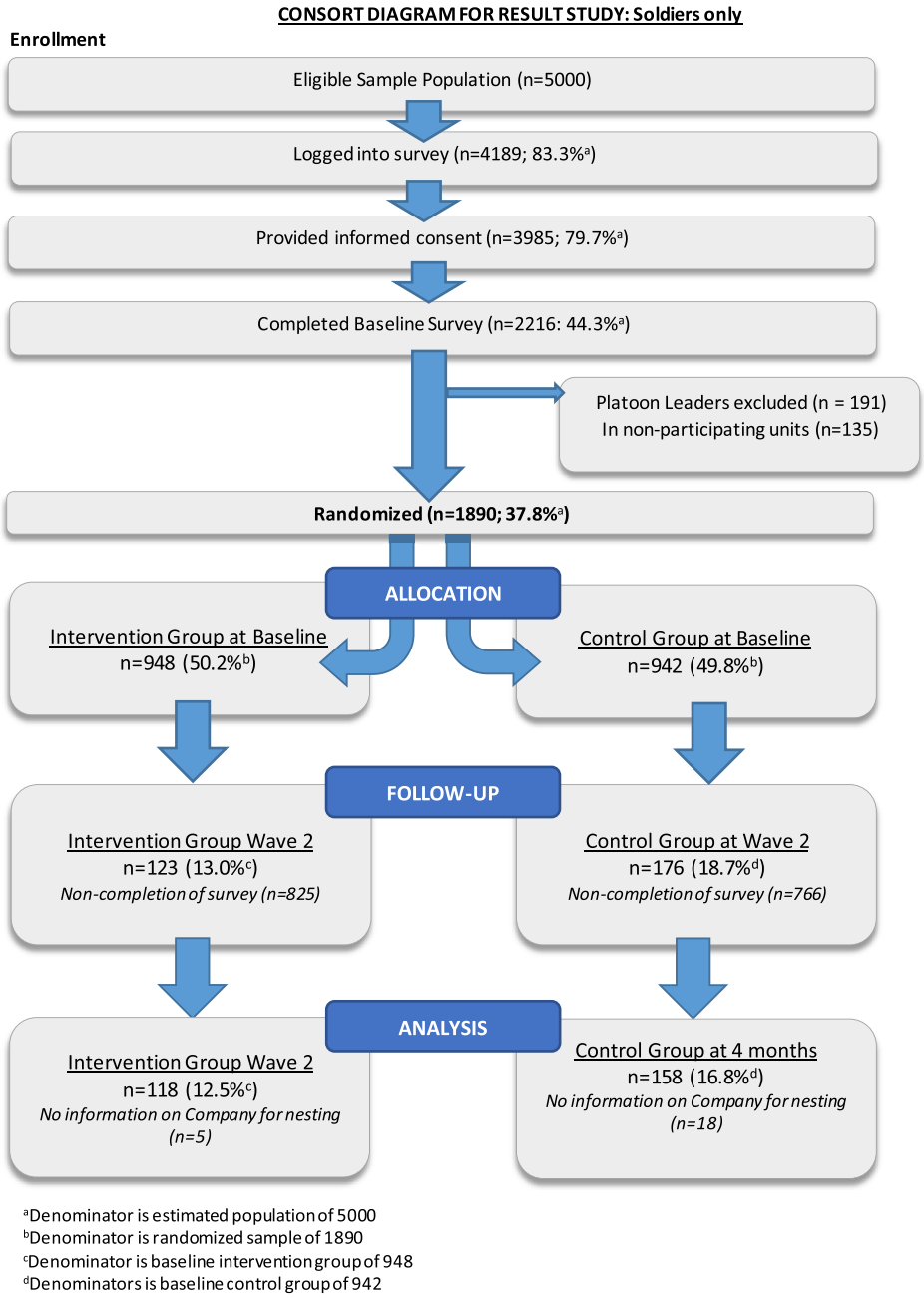

FIGURE 1. Consort Diagram for Soldier Participants

personal demands and providing clear guidance on available behavioral health resources; and (3) "role modeling" educated leaders to demonstrate to their SMs how they took care of themselves both psychologically and physically. The training also included 3 "responsive" supportive strategies: (1) "reducing stigma" involved setting the tone and increasing the psychological safety for SMs to seek help regarding mental health issues when needed by communicating it is safe and healthy to seek help; (2) "recognition of warning signs" that a leader might notice when a SM is struggling; and (3) "taking-action" by supporting SMs to seek out and use the resources available to them through attending to, communicating, and touching base with SMs when they need help. Our on-base advisory team provided extensive feedback during the training development process to ensure relevance and accuracy to the Army context.

Measures

PLT training measures

To evaluate intervention effects on platoon leaders' knowledge, an 8-item multiple-choice assessment was conducted

TABLE I. Overview and Timing of Training

Section	Time	Content
Introduction	15 minutes	• Introductions, consent, objectives, pre-test • Presentation of case study with discussion
Module 1: Setting the stage	15 minutes	• Making a case for supporting soldier readiness and psychological health • Discussion of key concepts of proactive & responsive supportive behaviors
Module 2: Computer-based training	30 minutes	• Reinforce key concepts • Presenting scenarios demonstrating types of proactive and responsive supportive behavioral strategies
Module 3: Bringing it all together	30 minutes	• Interactive discussion of what was learned during the computer-based training and review of key concepts • Post-test • Presenting follow-up activities, how to access and what they are

TABLE II. Overview of Readiness Supportive Behaviors

Domain	Definition	Example behaviors
Emotional support	What you do to help your Soldiers feel heard, and to show that you understand their family and personal demands	• Increasing face-to-face contact with each Soldier • Communicating genuine concern about your Soldiers' lives and well-being
Practical support	Making practical arrangements so Soldiers can meet both ongoing service demands and, at times, unexpected family or personal demands	• Providing clear guidance on available resources • Adjusting Soldiers' duties to avoid conflicting with family responsibilities or outside challenges
Role modeling	Demonstrating by example that you are taking care of your own personal well-being	• Approaching required mental health related training with support and optimism • Using the correct language that is clear and cannot be misinterpreted
Stigma reduction	Communicating that it is safe and healthy to seek help and support	• Ensure that when Soldiers seek help and are provided with treatment plans, there is little impact to the mission and little notice by members of the unit • Seek help yourself when needed
Warning sign recognition	Recognize when an employee is struggling	• Recognize when an employee is upset or struggling with work tasks or personal life challenges • Understand who may be struggling in your unit on a regular basis
Taking action/response	Respond by showing employees support and guiding them to resources	• Regularly remind employees about resources at work that they can use • Ask open-ended questions to actively engage with employees

immediately before, and after, the 90-minute training that was specific to the proactive and responsive supportive behaviors learned during the session. Three reaction items were also presented at the time of the post-test. The first was "How do you rate the information in today's training?" rated on a 4-point scale from (1) "Poor" to (4) "Excellent." The second rated "usefulness" and "relevance" to leader's work, which were also rated on a 4-point scale from (1) "Not at all" to (4) "Extremely." The third question was "How relevant to the content of your job is the information you learned today?" rated on a 4-point scale from (1) "Not at all" to (4) "Extremely."

SM survey measures

SM "problematic anger" was measured using the Dimensions of Anger Reactions scale,[27] a 5-item measure asking how much of the time, during the past 30 days, each statement applied to them. A sample item is "When I got angry, I stayed angry." Well-being was assessed with a well-established measure of "life satisfaction,"[28] consisting of 5 questions, asking the degree to which they agreed with statements such as "In many ways my life is ideal." Both scales had high reliability at alpha = .91.

RESULTS

PLT Knowledge and Reactions

Results demonstrated support for the training effectiveness based on both learning and reaction data. Leaders' ($n = 96$) knowledge was assessed by comparing the 8-item pre-test that occurred immediately before the training to the 8-item post-test that occurred immediately following the training. The mean pre-test score was 56.2% correct, whereas the post-test mean score was 82.8% correct, indicating a standardized mean difference with Cohen's d of 1.56 (paired samples t-test: $t = -12.05$, $P < .001$), representing a "very large effect size."

Platoon leaders ($n = 73$) also had positive reactions to the training based on the assessment immediately following the training, as 94.5% rated the training information as "Excellent" or "Good." In addition, most supervisors felt that the training would be "Extremely" or "Somewhat" useful (95.9%) and relevant (97.2%) for their work. Thus, supervisors learned the training material, had positive reactions to the training

TABLE III. Intervention Main and Indirect Effects on Anger and Life Satisfaction

	Anger T2		Life satisfaction T2		Indirect effect
	***b* (*SE*)**	**95% CI (lower, upper)**	***b* (*SE*)**	**95% CI (lower, upper)**	***ab* (*SE*)**
lx indirect effect (condition)	−0.17† (0.09)	–	−0.15 (0.28)	0.004, 0.24	0.04 (0.02)
Anger (baseline)	0.40*** (0.04)	0.26, 0.48	0.04 (0.07)	−0.16, 0.26	–
Life satisfaction (baseline)	–	–	0.36*** (0.07)	0.14, 0.54	–
Anger (time 2)	–	–	−0.21* (0.09)	−0.46, 0.04	–
lx main effect (condition)	−0.18** (0.06)	−0.30, −0.06	−0.11† (0.06)	−0.24, 0.01	–
Intercept	1.59*** (0.03)	1.53, 1.64	3.20*** (0.07)	3.05, 3.39	–
Anger (baseline)	0.47*** (0.05)	0.37, 0.58	–	–	–
Life satisfaction (baseline)	–	–	0.40*** (0.09)	0.22, 0.58	–
Residual variance	0.46*** (0.06)	0.35, 0.57	0.76*** (0.10)	0.57, 0.96	–
Intercept variance	0.00 (0.01)	−0.01, 0.01	0.00 (0.10)	−0.19, 0.19	–
Total model R^2	0.28	–	0.24	–	

lx = intervention. SE = standard error. lx condition: 0 = control group, 1 = treatment group. Ninety-five percent CI for indirect effect obtained from 5,000 bias-corrected bootstrap samples, all other effects utilizing asymmetric 95% CIs. T2 = time 2, 4 months post-baseline survey. Main and indirect effects account for nesting at the company level.

†$P < .10$,
*$P < .05$,
**$P < .01$,
***$P < .001$.

information, and reported the information as very useful and relevant for their work.

SM Training Effectiveness

In order to evaluate intervention effectiveness, analyses were conducted with an intent-to-treat approach,[29] utilizing an analysis of covariance controlling for baseline values of the mediating and dependent variables.[30] To account for the nested structure of the data where SMs were nested within companies and companies within battalions, we clustered at the company level where participant interactions were more salient. Although the intervention was carried out at the platoon level, clustering by platoon was not practical because of many participants omitting portions of their organizational assignment details on the surveys. Thus, we analyzed data utilizing the company randomization of 276 total soldiers in the intervention ($n = 118$) and control ($n = 158$) conditions. In these analyses, we controlled for any battalion level effects through a series of 8 contrasts (i.e., 4 contrasts within each treatment condition). These contrasts are only meant to account for any battalion differences that are independent of the training effect. All analyses were conducted in Mplus V8 with statistical significance set at a 95% CI.

Results demonstrated a significant main intervention effect of the mental health and resilience leadership training on decreasing SM problematic anger at time 2, 4 months post-baseline ($b = -0.18$, $SE = 0.06$, $P = .002$, pseudo $\Delta R^2 = 0.01$; $d = -0.27$) (Table III). Although we did not find a direct effect of the training on life satisfaction, using bootstrapping with 5,000 bias-corrected bootstrapped samples to test the mediation, we found a significant indirect effect of the intervention on increased SM life satisfaction at time 2, 4 months post-baseline, $ab = 0.04$, $SE = 0.02$, 95% CI = (0.004-0.24) via decreased problematic anger at time 2 (Table III).

DISCUSSION

This study provides an initial evaluation of the leadership training for PLTs that educated them on proactive and responsive strategies to support the behavioral health, readiness, and resilience of their SMs via decreased problematic anger and increased life satisfaction. The most frequently used training evaluation criteria is to obtain trainees' self-reported affective reactions such as satisfaction ratings. Learning is typically assessed with immediate post-test trainee knowledge questions. Although these first 2 criteria are assessed at the trainee level (PLTs), the overall impact of supportive leadership training is assessed by evaluating training effectiveness on subordinate outcomes from baseline to follow-up. That is, we expected to find a cross-level effect of the training. Our results demonstrated strong support for the training effectiveness, via these cross-level effects, indicating that the training has (1) a significant impact on behavioral outcomes of anger reduction and increased life satisfaction, critical to unit health and performance and (2) may be an appropriate intervention for other military leaders in the future.

More specifically, our study demonstrated support for hypothesis (H1) that leaders would have significantly increased knowledge of mental health and resilience supportive strategies from pre-training to post-training. Our findings also supported the hypothesis (H2) that PLTs will demonstrate positive reactions to the training based on ratings of favorability, utility, and relevance to their jobs. Finally, our hypothesis (H3) that the SMs in the training condition would

report decreased problematic anger and improved life satisfaction compared to the SMs in the control condition was also supported (the latter was through decreased anger).

Problematic anger, in addition to being a risk factor for mental health outcomes such as PTSD and suicidality, it is also a risk factor for aggression toward self and others.[2–4] One intent behind aggressive behavior is to cause harm;[31] however, aggression can also be adaptive in some instances in the military.[2] Moreover, most aggression-frustration theorists suggest where there is frustration, aggression will surely follow.[32] Therefore, supervisor support interventions can be seen as a way to discontinue the cycle of compromised well-being. This notion was evident in our study as the training intervention educated and encouraged leaders to engage in numerous supportive behaviors (e.g., emotional support and instrumental support), thereby quelling subordinate frustration through proactivity, early identification of stressors, and increased touchpoints.

Military Relevance

This research demonstrates that training PLTs to increase support for SMs through proactive and responsive supportive behaviors is beneficial for preventing and reducing problematic anger and increasing well-being. This research contributes to the military literature by providing evidence of the effectiveness of an organizational-level resilience-supportive intervention that targets how leaders interact with and support their SM psychological health and well-being through a behavioral health leadership program. Thus, targeting social support when designing leader interventions to improve mental health makes both theoretical and practical sense. The highly customized nature of this program to military leaders will help ease implementation within other branches and among military leaders at other ranks. For instance, if implemented more widely, this training program may have farther reaching consequences, bolstering not only the health but also the operational performance of military units.

Additionally, implementing new and non-duplicative trainings into existing training programs with competing requirements can be logistically difficult. One of the potentially most effective venues for disseminating training such as ours to PLTs would be through large instillations' Troop Schools to supplement the 1SGT Company Commanders Course. Eventually, this training could be offered at the Basic Officer Leader Course to new officers who may be in Platoon Leadership roles. This training is unique in that it was developed to address a gap in resilience training by focusing on mid-management (i.e., PLTs) leadership. Another discriminating feature is that unlike much training SMs receive, the current study has initial data to validate, but more research is needed to replicate and extend the findings to other samples.

Finally, it is important to keep in mind that this training does not take the place of other types of redesign strategies that are still needed at the organizational level to better support behavioral health of SMs, including evidence-based strategies of reducing demands and increasing control. However, the current training does address ways of increasing leader support, which has the potential of improving SM experiences of social connection and belongingness at work.[33] Thus, we suggest that this is just one piece of the larger puzzle and there are other organizational structures within the military that could be improved upon to better support the behavioral health and resilience of our SMs.

Limitations and Future Research

Limitations of this study include the minimal outcome data to evaluate the training effectiveness as well as the practical challenges of reducing stigma within the military environment. Although trainee learning and reaction data and SM baseline and follow-up reporting are important, including behavioral data in future evaluations is recommended. Future research should evaluate behavioral changes, such as actual improvements in leader behavior support strategies as well as changes in actual behaviors through behavior checklists before and after the training. Future research should also evaluate the effectiveness of the training on additional SM mental health risk factors and outcomes such as depressive symptoms, loneliness, as well as effects on readiness and resilience outcomes. Most of the existing prior civilian workplace mental health training research has only focused on trainee outcomes of mental health literacy, learning, and reaction outcomes, with little evidence focused on mental health outcomes of the trainees or for those whom they supervise.[34]

The supportive behaviors discussed in the present study are focused on preventative approaches and facilitating behavioral health treatment when necessary in the military; however, there is still a need to show PLTs how to support SMs when they return from behavioral health treatment. These strategies are likely to be very different from those identified in civilian research such as that noted above, because of the context of the military. For example, although recent qualitative work by Nielsen and Yarker[35] identified civilian manager supportive behaviors for employees returning to work following a leave because of a mental disorder, we cannot assume that these same strategies will generalize to a military environment where stigma associated with mental health treatment seeking is still quite strong. Some of this reasoning is because of the structure of the military environment, including its chain of command and existing mental health stigma and consequences for mental health challenges that are all deep-seated in the military culture. There are still serious concerns by SMs that mental health conditions could impact their career advancement. Thus, we suggest that future research examine not only the preventative effects of the training on SM mental health, well-being, readiness and resilience, but that training effectiveness evaluations should also evaluate effects on reported reductions in perceptions of stigma related to mental disorders and treatment seeking by leaders as well as ways

that leaders can support SM help-seeking behaviors and return to units following treatment.

CONCLUSION

The present study describes the development and initial evaluation of the theoretically-based mental health and resilience training of PLTs to support SM behavioral health and well-being. PLTs were trained on evidence-based supportive strategies that drew on social support theory and social psychological theory related to connectedness and belongingness.[36] Social support has been identified as a protective mechanisms against the development of mental health disorders, such as PTSD,[33,37] and this study demonstrates that training platoon leaders on supportive strategies reduced an important risk factor for aggression and mental health disorders–problematic anger— while also increasing reports of overall life satisfaction, an important indicator of well-being. These considerations are important as anger may be expressed in the form of harmful behaviors such as aggression, increased stress, lower satisfaction, and decreased performance–outcomes that may manifest in the military as decreased readiness and resilience. Such decreases in readiness and resilience can lead to jeopardizing the broader operation and health of the force.

ACKNOWLEDGMENTS

The authors would like to acknowledge the contributions of their colleague Phoenix Rain Bird and all of the SMs who gave their time to participate in this study.

CLINICAL TRIAL REGISTRATION

Identifier: NCT-04152824.

INSTITUTIONAL REVIEW BOARD (HUMAN SUBJECTS)

This study was approved by the OHSU Institutional Review Board (STUDY: 00020635). Expedited: The study was deemed minimal risk. The investigators have adhered to the policies for protection of human subjects as prescribed in AR 70-25.

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC)

Not applicable.

INDIVIDUAL AUTHOR CONTRIBUTION STATEMENT

L.H., J.D., and K.B. designed this research. L.B. drafted original manuscript. K.B., J.L., and S.A. collected data and analyzed results. All authors reviewed, edited, and approved this manuscript.

INSTITUTIONAL CLEARANCE

The material has been reviewed by the WRAIR. There is no objection to its presentation and/or publication.

FUNDING

The U.S. Army Medical Research Acquisition Activity, 820 Chandler Street, Fort Detrick MD 21702-5014 is the awarding and administering acquisition office. This work was supported by the Office of the Assistant Secretary of Defense for Health Affairs, through the Psychological Health and Traumatic Brain Injury Research Program under Award No. W81XWH-18-PHTBIRP-R2OE-TRA (PI Hammer). This work was also partly supported by the Oregon Institute of Occupational Health Sciences at Oregon Health & Science University via funds from the Division of Consumer and Business Services of the State of Oregon (ORS 656.630). Portions of this research were also supported by the Grant #T03OH008435 awarded to Portland State University, funded by the CDC and National Institute for Occupational Safety and Health.

SUPPLEMENT SPONSORSHIP

This article appears as part of the supplement "Proceedings of the 2023 Military Health System Research Symposium," sponsored by Assistant Secretary of Defense for Health Affairs.

CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY

The data that support the findings of this study are available on request from the corresponding author. All data are freely accessible.

REFERENCES

1. Okuda M, Picazo J, Olfson M, et al: Prevalence and correlates of anger in the community: results from a national survey. CNS Spectr 2015; 20(2): 130–9. 10.1017/S1092852914000182
2. Forbes D, Metcalf O, Lawrence-Wood E, Adler AB: Problematic anger in the military: focusing on the forgotten emotion. Curr Psychiatry Rep 2022; 24(12): 789–97. 10.1007/s11920-022-01380-x
3. Forbes D, Adler AB, Pedlar D, Asmundson GJ: Problematic anger in military and veteran populations with and without PTSD: the elephant in the room. J Anxiety Disord 2023; 96: 102716-102716. 10.1016/j.janxdis.2023.102716
4. Gallaway MS, Fink DS, Millikan AM, Bell MR: Factors associated with physical aggression among US army soldiers. Aggress Behav 2012; 38(5): 357–67. 10.1002/ab.21436
5. Lawrence-Wood E, Baur J, Lawrence A, Forbes D, McFarlane A: The role of inhibitory processes in the relationship between subsyndromal PTSD symptoms and aggressive behaviour. J Psychiatr Res 2021; 143: 357–63. 10.1016/j.jpsychires.2021.09.037
6. Hammer LB, Lee JD, Mohr CD, Allen SJ: Anger and the role of supervisors at work. In: Adler AB, Forbes D, eds. *Anger at Work: Prevention, Intervention, and Treatment in High-Risk Occupations*. American Psychological Association; 2021: 141–71.
7. Adler AB, LeardMann CA, Villalobos J, et al: Association of problematic anger with long-term adjustment following the military-to-civilian transition. JAMA Network Open 2022; 5(7): e2223236. 10.1001/jamanetworkopen.2022.23236
8. Adler AB, Britt TW, Castro CA, McGurk D, Bliese PD: Effect of transition home from combat on risk-taking and health-related behaviors. J Trauma Stress 2011; 24(4): 381–9. 10.1002/jts.20665
9. Naifeh JA, Mash HBH, Stein MB, et al: Sex differences in US Army suicide attempts during the wars in Iraq and Afghanistan. Med Care 2021; 59(2 Suppl): S42–50. 10.1097/MLR.0000000000001425
10. Start AR, Allard Y, Adler A, Toblin R: Predicting suicide ideation in the military: the independent role of aggression. Suicide Life Threat Behav 2019; 49(2): 444–54. 10.1111/sltb.12445
11. Wilks CR, Morland LA, Dillon KH, et al: Anger, social support, and suicide risk in US military veterans. J Psychiatr Res 2019; 109: 139–44. 10.1016/j.jpsychires.2018.11.026
12. Elbogen EB, Lanier M, Blakey SM, Wagner HR, Tsai J: Suicidal ideation and thoughts of self-harm during the COVID-19 pandemic: the role of COVID-19-related stress, social isolation, and financial strain. Depress Anxiety 2021; 38(7): 739–48. 10.1002/da.23162
13. Ford MT, Wang Y, Jin J, Eisenberger R: Chronic and episodic anger and gratitude toward the organization: relationships with organizational

and supervisor supportiveness and extrarole behavior. J Occup Health Psychol 2018; 23(2): 175–87. 10.1037/ocp0000075
14. Trachik B, Moscardini EH, Ganulin ML, et al: Perceptions of purpose, cohesion, and military leadership: a path analysis of potential primary prevention targets to mitigate suicidal ideation. Mil Psychol 2022; 34(3): 366–75. 10.1080/08995605.2021.1962184
15. Hammer LB, Brady JM, Brossoit RM, et al: Effects of a total worker health® leadership intervention on employee well-being and functional impairment. J Occup Health Psychol 2021; 26(6): 582–98. 10.1037/ocp0000312
16. Gonzalez-Morales MG, Kernan MC, Becker TE, Eisenberger R: Defeating abusive supervision: training supervisors to support subordinates. J Occup Health Psychol 2018; 23(2): 151–62. 10.1037/ocp0000061
17. Hoge CW, Cotting DI: Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. N Engl J Med 2004; 351(1): 13–22. 10.1056/NEJMoa040603
18. Hsieh CM, Tsai BK: Effects of social support on the stress-health relationship: gender comparison among military personnel. Int J Environ Res Public Health 2019; 16(8): 1317. 10.3390/ijerph16081317
19. Adler AB, Saboe KN, Anderson J, Sipos ML, Thomas JL: Behavioral health leadership: new directions in occupational mental health. Curr Psychiatry Rep 2014; 16: 484–91. 10.1007/s11920-014-0484-6
20. Adler AB, Bliese PD, LoPresti ML, McDonald JL, Merrill JC: Sleep leadership in the army: a group randomized trial. Sleep Health 2021; 7(1): 24–30. 10.1016/j.sleh.2020.06.001
21. Department of Defense: New DoD actions to prevent suicide in the military. 2023. Available at https://media.defense.gov/2023/Sep/28/2003310249/-1/-1/1/NEW-DOD-ACTIONS-TO-PREVENT-SUICIDE-IN-THE-MILITARY.PDF; accessed October 30, 2023.
22. U.S. Government Accountability Office: Military readiness: Department of Defense domain readiness varied from fiscal year 2017 through fiscal year 2019. 2021. Available at https://www.gao.gov/products/gao-21-279; accessed October 30, 2023.
23. Hammer LB, Wan WH, Brockwood KJ, Bodner T, Mohr CD: Supervisor support training effects on veteran health and work outcomes in the civilian workplace. J Appl Psychol 2019; 104(1): 52–69. 10.1037/apl0000354
24. Dimoff JK, Kelloway EK: With a little help from my boss: the impact of workplace mental health training on leader behaviors and employee resource utilization. J Occup Health Psychol 2019; 24(1): 4. 10.1037/ocp0000126
25. Dimoff JK, Kelloway EK, Burnstein MD: Mental health awareness training (MHAT): the development and evaluation of an intervention for workplace leaders. Int J Stress Manag 2016; 23(2): 167–89. 10.1037/a0039479
26. Hammer LB, Dimoff J, Mohr CD, Allen SJ: A framework for protecting and promoting employee mental health through supervisor supportive behaviors. Occup Health Sci 2024; 1–26. 10.1007/s41542-023-00171-x
27. Forbes D, Alkemade N, Mitchell D, et al: Utility of the dimensions of anger reactions–5 (DAR-5) scale as a brief anger measure. Depress Anxiety 2014; 31(2): 166–73. 10.1002/da.22148
28. Diener E, Lucas RE, Oishi S: Subjective well-being: the science of happiness and life satisfaction. Handb Posit Psychol 2002; 2: 63–73. 10.1093/oso/9780195135336.003.0005
29. McCoy CE: Understanding the intention-to-treat principle in randomized controlled trials. West J Emerg Med 2017; 18(6): 1075. 10.5811/westjem.2017.8.35985
30. Bodner TE, Bliese PD: Detecting and differentiating the direction of change and intervention effects in randomized trials. J Appl Psychol 2018; 103(1): 37–53. 10.1037/apl0000251
31. DeWall CN, Anderson CA, Bushman BJ: Aggression. In: Weiner I, ed. *Handbook of Psychology: Personality and Social Psychology*. 2nd ed. Vol 5. New York: John Wiley & Sons, Inc; 2013: 449–66.
32. Dollard J, Miller NE, Doob LW, et al: *Frustration and Aggression*. Routledge; 2013.
33. Britt TW, Adler AB, Fynes J: Perceived resilience and social connection as predictors of adjustment following occupational adversity. J Occup Health Psychol 2021; 26(4): 339–49. 10.1037/ocp0000286
34. Gayed A, Milligan-Saville JS, Nicholas J, et al: Effectiveness of training workplace managers to understand and support the mental health needs of employees: a systematic review and meta-analysis. Occup Environ Med 2018; 75(6): 462–70. 10.1136/oemed-2017-104789
35. Nielsen K, Yarker J: What can I do for you? Line managers' behaviors to support return to work for workers with common mental disorders. J Manag Psychol 2023; 38(1): 34–46. 10.1108/JMP-09-2021-0500
36. Baumeister RF, Leary MR: The need to belong: desire for interpersonal attachments as a fundamental human motivation. Psychol Bull 1995; 117(3): 497–529. 10.1037/0033-2909.117.3.497
37. Mohr CD, Hammer LB, Brady JM, Perry ML, Bodner T: Can supervisor support improve daily employee well-being? Evidence of supervisor training effectiveness in a study of veteran employee emotions. J Occup Organ Psychol 2021; 94(2): 400–26. 10.1111/joop.12342