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First Responder and Law Enforcement Mental Health and Wellness Research Development



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About This Report

Concerns about the physical health, mental health, and safety of first responders and law enforcement officers have been increasing for some time. The goal of this report is to synthesize evidence from the growing literature on mental health and wellness programs studied with law enforcement and first responder populations to help the U.S. Department of Homeland Security (DHS) in identifying and strengthening potential programs and policies and conduct an evaluability assessment to provide direction for potential research. This report could be of interest to first responder and law enforcement agencies working to improve mental health and wellness across their agencies.

This research was sponsored by DHS's Science and Technology Directorate's Office of Science and Engineering and conducted in the Management, Technology, and Capabilities Program of the RAND Homeland Security Research Division, which operates the Homeland Security Operational Analysis Center (HSOAC).

About the Homeland Security Operational Analysis Center

The Homeland Security Act of 2002 (Public Law 107-296, § 305, as codified at 6 U.S.C. § 185) authorizes the Secretary of Homeland Security, acting through the Under Secretary for Science and Technology, to establish one or more federally funded research and development centers (FFRDCs) to provide independent analysis of homeland security issues. RAND operates the HSOAC as an FFRDC for DHS under contract 70RSAT22D00000001.

The HSOAC FFRDC provides the government with independent and objective analyses and advice in core areas important to the department in support of policy development, decisionmaking, alternative approaches, and new ideas on issues of significance. HSOAC also works with and supports other federal, state, local, tribal, and public- and private-sector organizations that make up the homeland security enterprise. HSOAC's research is undertaken by mutual consent with DHS and is organized as a set of discrete tasks. This report presents the results of research and analysis conducted under 70RSAT22FR0000046, Responder Mental Health and Wellness. The results presented in this report do not necessarily reflect official DHS opinion or policy.

For more information on the RAND Homeland Security Research Division, see www.rand.org/hsrd.

For more information on this publication, see www.rand.org/t/RRA2268-1.

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Summary

Concerns about the physical health, mental health, and safety of first responders and law enforcement officers (LEOs) have been increasing for some time. In recent years, the public has become more aware of the overall toll law enforcement bears and the tragic consequences of poor mental health (Choi and Seipel, 2021; Nanavaty, 2015; Violanti, 2018). At the same time, the public perception of law enforcement, including officers at the U.S. Department of Homeland Security (DHS), has been polarized. Ensuring that officers' mental health and wellness are continuously protected is integral to the DHS strategic plan's priority of championing the DHS workforce.

Previous research suggests that the stress that police officers endure results in “higher rates of heart disease, divorce, sick days taken, alcohol abuse, and major psychological illnesses such as acute stress disorder, PTSD [posttraumatic stress disorder], depression, and anxiety disorders” (U.S. House of Representatives Committee on the Judiciary, 2017). Evidence also suggests that the suicide rate estimated for law enforcement professionals is higher than that of the general population for both men and women (Violanti and Steege, 2021). However, there is a dearth of evidence about the effectiveness of law enforcement mental health programs, which affects knowing what works.

With approximately 80,000 federal LEOs, intelligence analysts, and other staff in its agencies, DHS is uniquely positioned to take positive steps to change the professional culture to a model that prioritizes safety, health, and wellness. The goal of this research was to synthesize evidence from the growing literature on mental health and wellness programs of law enforcement and first responder populations to help DHS in identifying and strengthening programs and policies and to conduct an evaluability assessment (EA) to provide direction for future research.

This report presents findings from multiple research tasks, including a review of domestic and international literature on first responder wellness programs and interviews with key stakeholders in DHS about existing DHS wellness programs and their implementation and subsequent challenges. We conducted an EA of programs identified as potentially ready for evaluation in the stakeholder interviews. Findings from these tasks were used to develop a research agenda for future DHS wellness research efforts.

Methods

The methods for this research included a rigorous literature review to characterize the current state of mental health and wellness research through an analysis of peer-reviewed and gray literature published from 2015 to 2023 on the actual or perceived effectiveness of wellness-related programs for law enforcement and first responders. We identified the following ten types of interventions:

- mindfulness programs
- scenario-based stress response training
- psychotherapy
- group prevention skills and knowledge training
- physical fitness and physical health programs
- mobile health applications
- peer support, mentoring, and chaplain programs
- critical incident response programs
- other stress reduction programs
- suicide prevention training.

We also identified and met with wellness experts from DHS and local law enforcement agencies to receive input on the research that the individuals or their agencies were involved in and what they think are the most pressing topics related to law enforcement wellness. For the EA, we conducted follow-up interviews with key staff from five programs. The data collected from these methods were used to identify research questions, study designs, and research challenges for the research agenda.

Key Findings

We identified key findings that we have organized around four key areas: program evidence, DHS-related challenges, future work, and barriers.

Program Evidence

- According to the literature within the scope of our parameters, the most studied wellness programs for law enforcement and first responders were group prevention skills and knowledge training, psychotherapy, physical fitness, and mindfulness training.
- The findings were generally positive for psychotherapy and mindfulness training in terms of the reduction in mental health symptoms.
- Physical fitness studies also preliminarily demonstrated beneficial results in a variety of areas.
- However, most of the studies assessed were not methodologically rigorous, making it difficult to draw conclusions about program effectiveness.
- In addition, there were relatively few studies for some program types—such as suicide prevention training; mobile health applications; and peer support, mentoring, and chaplain programs—which limits our conclusions.
- This literature review focused on law enforcement and first responder populations; there is additional literature with other populations, such as workers in other high-stress jobs, that needs to be reviewed and have its lessons learned incorporated.

- According to our interviews, certain program types, such as suicide prevention training, physical fitness programs, mindfulness training, and mandatory postvention efforts, were generally described as effective.
- Our EA found that four of the five programs we assessed met two or fewer readiness criteria. The U.S. Customs and Border Protection suicide prevention program was most ready to engage in a formal evaluation, though several key evaluability areas required improvement.

Future Research

- Overall, more research is needed with larger samples, rigorous designs, and outcomes other than knowledge change.
- There is concern about using programs that have not been previously evaluated, though lack of program standardization makes research and implementation difficult.

U.S. Department of Homeland Security–Related Challenges

- Some interviewees recommended adopting robust, evidence-informed, non-DHS programs and adapting them for DHS's population, with the related concern of the uniqueness of the department and the applicability of programs designed for different populations.
- Interviewees expressed concerns about the size of the department and the ability to tailor programs by component or mission.
- There are logistical challenges associated with conducting research on DHS wellness initiatives, including the need to ensure confidentiality and the possible need for support from labor unions to conduct research with DHS employee participants.
- Given the wellness programs that have been implemented thus far, DHS as a department appears to be taking mental health and wellness seriously. As components work to design and strengthen existing programs, they should consider what already exists across DHS.
- Implementing some types of evidence-based programs, such as short-term, intensive residential programs and group psychotherapy, are less applicable for DHS.

Barriers

- Stigma in seeking and receiving services is a critical barrier but, according to interviewees, might be improving. Most interviewees agreed that mental health stigma was slowly declining, especially as more young professionals join the workforce.

- Some general barriers to use of wellness programs include a workplace culture that discourages help-seeking and fear of losing one's security clearance or approval to carry a firearm.
- Organizational barriers to participation include (1) a lack of resources to fund programs and/or on-site mental health clinicians, (2) employees feeling that they do not have sufficient time to seek out support (especially employees who have very demanding roles), (3) employee concerns around confidentiality, (4) insufficient leadership support, and (5) a lack of awareness about the resources available to employees.
- Most of the programs included in our EA were not ready to be part of a rigorous impact evaluation. Lack of time, resources, leadership support, and existing data-collection efforts were identified as barriers to evaluation.

More research is needed with larger samples, rigorous designs, and outcomes other than knowledge change, such as mental health and wellness outcomes. Although literature review findings were generally promising, methodological weaknesses limit the conclusions that can be drawn. The comparability and generalizability of the studies are limited because of the use of different outcome measures, evaluation designs that were less rigorous because they are secondary to the overall training goals of the program, and low participation and response rates.

Although we were able to review evaluations done on mental health and wellness programs, because of our criteria, the evaluations were all conducted with first responder personnel. Additional literature on other populations should be reviewed and might provide additional insight into workplace wellness programs.

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Introduction

Concerns about the physical health, mental health, and safety of first responders and law enforcement officers (LEOs) have been increasing for some time. In recent years, the public has become more aware of the overall toll law enforcement bears and the tragic consequences of poor mental health (Choi and Seipel, 2021; Nanavaty, 2015; Violanti, 2018). At the same time, the public perception of law enforcement, including officers at the U.S. Department of Homeland Security (DHS), has been polarized. Ensuring that officers' mental health and wellness are continuously protected is integral to the DHS strategic plan's priority of championing the DHS workforce.

The safety and wellness of DHS first responders and law enforcement are critical not only to their personal well-being but also to their ability to do their work. About 25 percent of the DHS workforce is made up of veterans (DHS, 2023c). According to the U.S. Department of Veterans Affairs' National Center for PTSD (posttraumatic stress disorder), approximately 8 percent of the veteran population will have PTSD at some point in their lives, most commonly associated with combat trauma (U.S. Department of Veterans Affairs, undated). The propensity of former military personnel to hold law enforcement positions and the high levels of stress that DHS law enforcement personnel encounter emphasize the need for more research aimed at improving their physical and mental health.

Previous research suggests that the stress that police officers endure results in "higher rates of heart disease, divorce, sick days taken, alcohol abuse, and major psychological illnesses such as acute stress disorder, post-traumatic stress disorder, depression, and anxiety disorders" (U.S. House of Representatives Committee on the Judiciary, 2017). Evidence also suggests that the suicide rate estimated for law enforcement professionals is higher than that of the general population for both men and women (Violanti and Steege, 2021). However, there is a dearth of evidence on the effectiveness of law enforcement mental health programs, which affects knowing what works.

Authors of a previous overview of articles on wellness programs for first responders, which included articles from 2009 through 2019, found that resilience training (including mindfulness; $n = 4$ studies) and physical, mental, and emotional health programs ($n = 9$ studies) were promising strategies, while findings for suicide prevention ($n = 4$ studies) and stress management programs ($n = 7$ studies) were mixed (Antony et al., 2020). Psychotherapy was the most studied strategy ($n = 16$ studies), with promising findings for such interventions as cognitive behavioral therapy (CBT) and eye movement desensitization and reprocessing

(EMDR) and mixed findings for debriefing after critical incidents. Findings from this review suggest that some wellness strategies might be effective, though a more comprehensive search and synthesis that includes more recent studies is needed.

Officer well-being is of interest to the International Association of Chiefs of Police, which provides a toolkit on preventing officer suicide and an assessment tool and road map as a way for local agencies to plan and prepare for preventing suicides (International Association of Chiefs of Police, 2020; DHS, 2023a; DHS, 2023b). DHS has its own processes and policies for handling health and mental health (e.g., employee assistance program [EAP], fit-for-duty occupational assessment) (DHS, 2023a; DHS, 2023b). The Office for State and Local Law Enforcement Engagement has listed officer health, safety, and wellness as a top priority this year, in line with its guidance from the Secretary's office.

In 2019, the Office of the Chief Human Capital Officer asked RAND to identify and inventory existing DHS programs that addressed psychological health, peer support, and resilience; to highlight gaps in existing programs relative to recommended practice; and to develop recommendations for new initiatives or for expanding or replicating existing evidence-based programs to support other DHS components (Farmer, Whipkey, and Chamberlin, 2019). The report concluded that most workplace interventions, including resilience training, peer support, short-term counseling, and self-care (such as mindfulness, moderate exercise, and journaling), had only low to moderate likelihood of a positive net impact based on available evidence, while one strategy, critical incident stress debriefing, was rated as contraindicated.

Since the publication of the 2019 report, wellness issues have remained a key concern for DHS; in 2022 alone, 14 U.S. Customs and Border Protection (CBP) agents died by suicide, a 13-year high (Siegel and Peller, 2022). Although the 2019 report established a baseline of programs and policies in place as of February 2017 in the department and used similar methods (particularly a literature review and interviews), this report presents updated information with a broader scope. For instance, we included both clinical and nonclinical psychological health issues and added information on programs addressing suicide prevention. We also conducted a more comprehensive systematic review of the existing research on the effectiveness of these programs.

With the large cadre of federal LEOs, intelligence analysts, and other staff in the department, DHS is uniquely positioned to take positive steps to change the organizational culture to a model that prioritizes safety, health, and wellness. The goal of this project is to synthesize evidence from the growing literature on mental health and wellness programs for law enforcement and first responder populations to help DHS identify potential programs and policies and provide direction for potential research.

This report presents findings from multiple exploratory tasks, including a review of international and domestic literature on first responder wellness programs and interviews with key stakeholders in DHS on the state of existing DHS wellness programs and their implementation and research challenges. We conducted an evaluability assessment (EA) of programs identified as potentially ready for evaluation in the stakeholder interviews. Findings from these tasks were used to develop a research agenda for future DHS wellness research efforts.

By reviewing the current state of DHS policy, programing, and domestic and international research focused on law enforcement and first responder mental health and wellness, the goal of this project is to address a fundamental knowledge gap to help inform public investments in applied research, evaluation, programming, prevention, and policy. Workers with fair or poor mental health were estimated to cost the U.S. economy nearly \$50 billion per year in productivity losses (Witters and Agrawal, 2022), and police officer burnout has been associated with worse job performance and higher turnover intentions (Gomes, Ribeiro, and Gomes, 2022). Action in any of these areas could prevent self-harm or deaths in the law enforcement population, could increase retention and job satisfaction, and could reduce other maladaptive coping techniques associated with poor mental health and stress.

Organization of This Report

This report provides a comprehensive description of the exploratory tasks. The report is organized as follows:

- **Chapter 1, Introduction** provides background of the issue and a description of the project.
- **Chapter 2, Methods** describes the methodology for the research, including the data-collection plan.
- **Chapter 3, Literature Review and Interview Results** provides an overview of the findings from the literature review and interviews, organized by program model.
- **Chapter 4, Evaluability Assessment** presents the findings from the EA of five programs.
- **Chapter 5, Conclusion** presents the key findings and recommendations for future research, including a discussion of the need for future research and high-priority research questions.
- The **appendixes** include a systematic review search strategy (Appendix A), additional details on the studies included in the systematic review (Appendix B), and an interview guide (Appendix C).

Methods

In this chapter, we review the methods used for the project. The goal of the qualitative methods was to understand and describe the current state of mental health and wellness research through an analysis of peer-reviewed research articles and gray literature. We also identified and met with wellness experts from DHS and local law enforcement agencies. The data collected from these methods were used to identify research questions, study designs, and research challenges for the research agenda.

All components of the project were approved by RAND's institutional review board (IRB) and the DHS Privacy and Compliance Assurance Program Office. The board's review includes the approval of data-sharing agreements and all data-collection methods, including written consent for qualitative procedures.

Data Collection

To achieve the outcomes and objectives presented, we performed the following tasks.

Literature Review

We began by taking a systematic view of what we know about mental health and wellness research. We gathered information about the current state of the field through a systematic literature search. For the literature review, we followed a systematic search strategy developed and piloted in consultation with a RAND librarian (see Appendix A for the search strategy used). The strategy incorporated a series of search strings designed to query repositories of both academic and gray literature for recent publications (published between 2015 and 2023) on wellness-related programs for first responders. The search strings were complemented by a series of inclusion and exclusion criteria delimiting the scope of the review. We screened the retrieved hits by their titles and abstracts. To ensure a uniform approach to screening, multiple researchers simultaneously screened a subset of hits and performed subsequent consultations.

The inclusion criteria used for articles in the literature review were that it needed to focus on (1) a study of the effectiveness or perceived effectiveness of a wellness-related program,

policy, intervention or initiative; (2) law enforcement or first responders;¹ and (3) a wellness outcome of relevance (e.g., substance use, morale, stress, trauma, well-being, physical health). Additional inclusion criteria were as follows: (1) must be in English; (2) can be a dissertation, thesis, or magazine or newspaper article; (3) must have been published after 2014; (4) can be a domestic or international source.

We started with 3,012 articles. We began by conducting a review of the titles and abstracts of the articles and removed 2,462 of the articles based on the relevance of the titles and abstracts, leaving 550 for full-text review. Of these, 67 articles met our inclusion criteria. From citations in relevant review articles, we identified an additional 43 articles to consider for full-text review, of which 24 met our inclusion criteria. This yielded a total of 91 articles to include in the review.

To extract information from included sources, we used a standardized data extraction template in the form of an Excel spreadsheet. In the spreadsheet, individual rows corresponded to unique sources and individual columns corresponded to various lines of inquiry to be answered by each source (including program name, type of program, population, outcomes, limitations, future research ideas, method, and agency involved). The results from the literature review shaped the final interview guide used for the next data-collection effort.

Expert Interviews

We interviewed 18 subject-matter experts involved in law enforcement wellness programming or research to get input on the research that the individuals or their agencies were involved in and their perspective on the most pressing topics related to law enforcement wellness. We also asked what specific research needs are not being addressed by their agency or by the field. This approach ensured that we captured key areas of research and key publications and provided a nuanced perspective in our recommendations for research that might not have been drawn from publications alone.

Partners at DHS provided us with a list of potential interviewees from DHS and local law enforcement agencies. The interviews were one hour in length and were semi-structured, following a unified topic guide (see Appendix C) but allowed for discussion of unanticipated topics. Some of the interviews were conducted with multiple members of the same organization.

Interviews were conducted by two team members, one leading the discussion and the other taking notes. Interview notes were coded following standard thematic analysis techniques to identify salient themes.

For the EA, we conducted follow-up interviews with key staff from five unique wellness-related programs. We chose programs for the EA that were well-developed, were frequently

¹ We included studies of police officers, LEOs, firefighters, and emergency services workers (e.g., emergency medical technicians, ambulance workers, emergency dispatchers, paramedics). Studies of only health care professionals were beyond the scope of this review. Studies that included first responders along with other participants who did not meet our inclusion criteria, such as health care professionals, were included.

used by staff, and had not already undergone evaluation. We chose programs that were based on models that were not already being evaluated or on models that were both frequently used and well-developed. Our interview questions followed the domains referenced in the Program Implementation and Evaluation Readiness (PIER) tool. The tool was developed by RAND researchers and is made up of key constructs that are critical to successful program implementation and evaluation (e.g., program design and implementation, staffing and training, possible research design, data-collection capacity) (Barwick, 2011; Kaufman-Levy et al., 2003).

Literature Review and Interview Results

Literature Review and Interview Program Types and Themes

To narrow the scope of the literature search to the most relevant sources, we identified ten program types that captured the most published research and the most-discussed topics regarding first responder wellness. The ten program types containing the topics from the final 91 articles, along with a description and the number of domestic and international reports on each program type, are shown in Table 3.1.¹

Our thematic analysis of the interviews resulted in four interview themes: wellness programs, perceptions of wellness program effectiveness, barriers to using wellness programs, and automatic triggers for employee intervention or evaluation. Within the wellness program theme, we identified nine program type subthemes (mindfulness programs; psychotherapy; group prevention skills and knowledge training; physical fitness and physical health programs; mobile health applications; peer support, mentoring, and chaplain programs; critical incident response programs; other stress reduction programs; suicide prevention training) that corresponded to those in the literature review. One program type (scenario-based stress response training) was identified in the literature review but not discussed in the interviews.

In this chapter, we present the findings from the literature review and interviews for the wellness program types, with a focus on consistencies and divergences between literature review and interview findings. We then discuss findings for the additional interview themes.

¹ There were three studies that met our inclusion criteria but did not fit into these program categories. Two of these studies assessed perceptions of the effectiveness of multiple types of programs (Bonner and Crowe, 2022; Crawford, 2020). One study assessed a virtual training aimed at teaching participants to change their thought patterns when viewing videos of traumatic events (Beer et al., 2017).

TABLE 3.1
Systematic Review Results, by Program Type

Program Type	Description	Domestic Reports <i>N</i>	International Reports <i>N</i>
Mindfulness training	Program that teaches participants mindfulness skills, such as body and breath awareness and breathing techniques	9	3
Scenario-based stress response training	Program that uses role-playing or visualization to practice altering or controlling response to stressful events	4 ^a	3
Physical fitness and physical health program	Program that involves physical activity (including yoga) or teaches strategies for improving health, such as physical activity and nutrition	2	6
Psychotherapy	Group or individual psychotherapy that includes trauma-related psychotherapy or residential or retreat therapeutic program with multiple therapeutic components	7	13
Group prevention skills and knowledge training	Group program that provides participants with knowledge of mental health principles or resources, skills for dealing with stress, resilience training, or other coping skills	5	13
Mobile health application	Text message or app-based mental health or mindfulness program	2	3
Other stress-reduction program	Other program that aims to reduce stress in first responders (includes canine programs, massage therapy, etc.)	1	3
Peer-support, mentoring, and chaplain program	Program that provides peer-support, mentoring, or chaplain service	3	1
Critical incident response program	Program that provides counseling, debriefing, or support following a critical incident	4	2
Suicide prevention training	Program aimed at increasing knowledge to reduce suicide	0	4
Total		37	51

^a The location was not reported for one study in this category, but it is counted in this table as a domestic study because the authors were based at a U.S. institution.

Mindfulness Programs

Literature Review Findings

Mindfulness programs consist of education, training, and practice in mindfulness techniques, such as breathing awareness, emotion regulation, body scans to promote body awareness, and situational awareness. We identified 12 reports on ten independent evaluations of mindfulness training programs for law enforcement and other first responders (sum-

marized in Table 3.2; more details in Appendix B). Many of these studies evaluated a version of Mindfulness-Based Resilience Training (MBRT), which is based on the widely used Mindfulness-Based Stress Reduction program (Kabat-Zinn, 2013) and adapted to be relevant to police officers' experiences (Bergman, Christopher, and Bowen, 2016; Christopher et al., 2016; Christopher et al., 2018; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021; Kaplan et al., 2017). The training typically consists of eight weeks of group mindfulness classes along with meditation and mindfulness exercises to practice at home. The training includes body scans, attention exercises, mindfulness exercises during different activities (e.g., sitting, eating, walking), and exercises to practice handling interpersonal conflict. Other studies evaluated similar programs that included elements of Mindfulness-Based Stress Reduction (Denkova et al., 2020; Krick and Felfe, 2020). In addition, two studies examined online mindfulness training programs (Joyce et al., 2019; Lilly et al., 2019) and there was one single-day workshop (Giovannoni et al., 2015).

Studies found that mindfulness training had beneficial effects on a variety of self-reported mental health outcomes, including resilience, dimensions of burnout, emotion regulation, depression, anxiety, mindfulness, and stress (Christopher et al., 2016; Christopher et al., 2018; Denkova et al., 2020; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021; Kaplan et al., 2017; Krick and Felfe, 2020; Lilly et al., 2019; Navarrete et al., 2022).

Improvements were also observed for self-reported physical health outcomes, including general physical health (Christopher et al., 2016; Krick and Felfe, 2020) and sleep (Christopher et al., 2016; Navarrete et al., 2022; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021). However, findings were mixed, with several studies reporting that mindfulness did not have a significant effect on pain (Christopher et al., 2016; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021), physical health (Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021), or certain mental health outcomes (Christopher et al., 2018).

Five studies measured physiological outcomes associated with stress, such as blood pressure, cortisol, heart rate, and inflammatory biomarkers, with most finding that the effects that mindfulness had on these outcomes were mixed or nonsignificant (Christopher et al., 2016; Christopher et al., 2018; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021).

MBRT and related adaptations were the most frequently evaluated programs. Studies found that they had benefits for mindfulness, resilience, physical health, burnout, emotion regulation, and stress, though some findings were mixed (Bergman, Christopher, and Bowen, 2016; Christopher et al., 2016; Christopher et al., 2018; Grupe, McGehee, et al., 2021; Grupe, Stoller, et al., 2021; Kaplan et al., 2017).

Although findings across studies were promising, many studies were methodologically weak, often lacking control groups or with small samples. However, there were five randomized controlled trials (RCTs) that observed beneficial effects, suggesting that mindfulness training might be an effective strategy for improving police well-being (Christopher et al., 2018; Grupe, McGehee, et al., 2021; Joyce et al., 2019; Krick and Felfe, 2020; Lilly et al., 2019). However, it is important to note that rates of participation varied across studies. For example, Grupe, Stoller, et al. (2021) found that participants reported practicing mindfulness at home

TABLE 3.2
Summary of Mindfulness Program Studies

Author (year)	Program Name	Program Description	Findings
Bergman, Christopher, and Bowen (2016); Christopher et al. (2016)	MBRT	Group mindfulness training and practice with daily mindfulness homework	Training was associated with improvements in mindfulness, resilience, burnout, emotional intelligence, emotion regulation, organizational and operational stress, general stress, physical health, mental health, fatigue, sleep, and anger; no significant changes in pain, cortisol awakening response, or family functioning; facets of mindfulness predicted changes in anger and operational/organizational stress
Christopher et al. (2018)	MBRT	Group mindfulness training and practice. Each participant given iPod Touch with mindfulness practice software to use between sessions	Participants in the mindfulness group had significant improvements in burnout, organizational stress, the nonreactivity facet of mindfulness, and psychological flexibility; effects on several measures, including anxiety, depression, and nonsignificant effects on suicide ideation; mindfulness participants had significantly lower aggression than controls posttraining; mixed findings for cortisol awakening response at first follow-up, with nonsignificant results at the three-month follow-up
Denkova et al. (2020)	Mindfulness-Based Attention Training and Relaxation Training	Group mindfulness training and practice or relaxation education and practice. Both groups provided with daily audio-guided practice assignments	Significant increase in resilience in the mindfulness group but not the relaxation or control group; effects of training on positive affect, negative affect, and performance on a sustained attention task nonsignificant
Giovannoni et al. (2015)	Caring Science	Training workshop on applying mindfulness techniques to lower job-related stress levels, applying mindful relaxation techniques to prevent potential secondary trauma, addressing countertransference, letting go of distressful thoughts, etc.	Participants reported being more authentically present, reported improvement in positive regard toward clients, and engaged in more active listening
Grupe, McGehee, et al. (2021)	Adapted from Mindfulness-Based Stress Reduction and MBRT	Group mindfulness training and practice with recommended guided practices	Significant improvements in distress, mental health symptoms, and sleep quality in the experimental group as compared with control group; effects on pain, physical, health, and occupational stress nonsignificant; marginally greater reduction in cortisol awakening response in experimental group as compared to controls. Effects on inflammatory biomarkers and diurnal and hair cortisol nonsignificant.

Table 3.2—Continued

Author (year)	Program Name	Program Description	Findings
Grupe, Stoller, et al. (2021)	Adapted from Mindfulness-Based Stress Reduction and MBRT curriculums	Group mindfulness training and practice with recommended guided practices	Significant posttraining reductions in perceived stress, sleep disturbances, anxiety, the exhaustion dimension of burnout, and PTSD symptoms; changes in other self-reported outcomes (e.g., pain, physical functioning) and physical health outcomes (e.g., blood pressure, resting heart rate) nonsignificant
Joyce et al. (2019)	Resilience@Work mindfulness program	Self-paced online training exercises focused on mindfulness; acceptance and commitment therapy with an emphasis on self-compassion and acceptance skills	The intervention group and control group had similar levels of improvement in resilience at six weeks; however, at six-month follow-up, the intervention group continued to improve in resilience and active coping compared to the control at six-month follow-up
Kaplan et al. (2017) ^a	MBRT	Group mindfulness training and practice with mindfulness homework	LEOs and firefighters had significant improvements in mindfulness, resilience, and burnout. Relationship between increased mindfulness and decreased burnout partially mediated by improvements in resilience
Krick and Felfe (2020)	Based on principles of Mindfulness-Based Stress Reduction and other mindfulness-based interventions	Group mindfulness training and practice with mindfulness homework	Significant improvements in mindfulness, self-care, psychological strain, negative affect, and health complaints in the mindfulness group but not the control group. Increase in heart rate variability in the mindfulness group as compared to the control group. Short-term decrease in heart rate in mindfulness and control groups.
Lilly et al. (2019)	Destress 9-1-1	Online mindfulness intervention with seven modules completed weekly. Includes daily mindfulness activities and moderated discussion board.	Significantly greater reduction in stress, but not mindfulness, in mindfulness group as compared to control group at postintervention and three-month follow-up
Navarrete et al. (2022)	Mindfulness to Promote Police Well-Being	Group mindfulness training and practice with daily meditation homework	Mindfulness group had significant improvements in mindfulness, sleep quality, self-compassion, depression, anxiety, stress, emotion regulation, and personal/work-related burnout with no changes in the control group. Group differences in suicide ideation nonsignificant (but low baseline rate).

^a Kaplan et al. (2017) includes the same LEO sample as Bergman, Christopher, and Bowen (2016) and Christopher et al. (2016), along with an independent firefighter sample.

an average of 43 of 56 days, while Lilly et al. (2019) found that only 55.3 percent of participants completed at least six of seven online mindfulness modules.

Interview Findings

Several mindfulness programs were discussed by interviewees and were generally described as promising or beneficial. One interviewee discussed a pilot mindfulness training program based on an established program, which was found to be beneficial in a program evaluation involving an external evaluator. One interviewee believed that a program that trained officers to become mindfulness coaches reduced the stigma of seeking help, stating, “Mindfulness is not for everybody. But something [we have] seen anecdotally is that we often get a couple [of] referrals coming out of class. If [one is] teaching 20 personnel, two or three might come up to coaches and [that] lowers stigma.” One new mindfulness effort was perceived as popular, with one interviewee discussing the rapid growth of the new program.

Key Takeaways on Mindfulness Programs

Mindfulness programs were frequently discussed both in the interviews and in the first responder literature. Interviewees viewed mindfulness programs as promising. This was consistent with literature review results, which showed that mindfulness training had beneficial effects on physical and mental health outcomes, though findings for some self-reported physical health outcomes and health biomarkers were nonsignificant. Although mindfulness training appears to be a promising prevention strategy, more research is needed with larger samples and more-rigorous designs. In addition, although mindfulness training can be effective for those first responders who choose to participate, we do not know whether mandatory mindfulness programs would be similarly beneficial, particularly given the relatively low participation rates observed in several studies.

Next steps for mindfulness research and implementation include the need to determine barriers and facilitators to first responder participation in mindfulness programs. This is particularly relevant because mindfulness has been found to be beneficial for those who participate, but participation rates can be low. Although mindfulness training has been evaluated in several first responder populations, including law enforcement, firefighters, and emergency medical dispatchers, future research could determine whether certain populations are more likely than others to benefit from mindfulness training. MBRT was the most frequently studied mindfulness program and was found to have beneficial effects in several studies. Interviewees did not discuss this program, though DHS might consider adopting or adapting this training given its observed benefits in existing research.

Scenario-Based Stress Response Training

Literature Review Findings

Although this type of intervention was not discussed in the interviews, our literature review identified seven studies of programs for police officers or police recruits that involved role-playing or visualizing scenarios of stressful events (summarized in Table 3.3). The goal of these trainings was for participants to practice altering or controlling their stress responses to prepare them for possible real-world critical incidents or other stressful events. For example, one study evaluated a mental strength training program, which taught participants skills in three domains: challenge (setting goals and visualizing real-world events to prepare for stressful situations), control (controlling reactions to stressful events), and confidence (learning from reactions to events and reducing negative thoughts and emotions) (van der Meulen et al., 2018). Some trainings included heart rate or respiration biofeedback or controlled-breathing training to promote healthier responses to stressful events. For example, one study evaluated a resilience promotion training program that included education about stress management and practice controlling breathing and focusing on positive emotions while listening to critical incident scenarios (Andersen et al., 2015).

Findings for several self-reported outcomes were nonsignificant, with studies reporting that training did not have significant effects on stress (Andersen and Gustafsberg, 2016; Ramey et al., 2016; Ramey et al., 2017), anxiety (Ramey et al., 2016; Ford, 2019), depression (Arble et al., 2017; Ford, 2019; Ramey et al., 2016), hostility (Ramey et al., 2016), or PTSD symptoms (Arble et al., 2017; Ramey et al., 2016). One study found that among officers exposed to potentially traumatic events, Mental Strength Training had small beneficial effects on acceptance of self and life and on interpersonal confidence (van der Meulen et al., 2018). Another study found that participants in an imagery-based trauma prevention program experienced significant improvements in adaptive coping strategies and a reduction in anxiety-related symptoms and alcohol use (Arble et al., 2017). Four studies reported that participants experienced significant changes in heart rate or heart rate variability (Andersen et al., 2015; Andersen and Gustafsberg, 2016; Ramey et al., 2016; Ramey et al., 2017), though changes in other physiological outcomes, such as blood pressure and cholesterol were nonsignificant (Andersen and Gustafsberg, 2016; Ramey et al., 2016).

Evidence for the efficacy of scenario-based stress response training programs is mixed. Although some studies observed training benefits, effects on several self-reported and physiological outcomes were nonsignificant. However, there was a lack of rigorous evaluation of these programs. Of the studies reviewed, there were only two RCTs (Andersen and Gustafsberg, 2016; Ramey et al., 2017) and, in one of these studies, participants in both the treatment and control groups received many of the same services, potentially masking program effects (Ramey et al., 2017). Only one other study had a control group (van der Meulen et al., 2018) and, across all studies, most samples were small (only two studies had samples of more than 40 participants), which might have contributed to null findings.

TABLE 3.3

Summary of Scenario-Based Stress Response Training Studies

Author (year)	Program Name	Program Description	Findings
Andersen et al. (2015)	Resilience Promotion Training Program	Training program including education on stress and techniques to control breathing while listening to stressful critical incident scenarios	Average heart rate, but not maximum heart rate, during training scenarios decreased from day 1 to day 5. Improvements in achievement scores on the Inner Balance app, which aims to measure autonomic nervous system coherence and ability to maintain this state (achievement). Majority of participants highly satisfied with the stress reduction techniques.
Andersen and Gustafsborg (2016)	International Performance Resilience and Efficiency Program	Training that includes education about stress, techniques to control breathing, and visualization. Includes biofeedback and practice using techniques during realistic critical incident scenarios	Intervention group had lower heart rate reactivity than the control group during one of two scenarios. No significant differences in heart rate recovery, blood pressure, or postscenario self-reported stress.
Arble et al. (2017)	Not reported	Imagery-based trauma prevention program in which officers were exposed to realistic traumatic scenarios with education on coping with trauma, mindfulness during and after stressful incidents, and coping strategies	Significant improvements in some adaptive coping strategies, anxiety, and alcohol use. Changes in other outcomes, including sleep quality, depression, and PTSD symptoms, nonsignificant.
Ford (2019)	NA	Participants self-reported on whether they had completed any stress inoculation training program (involves role-playing stressful situations with the aim of reducing stress response to critical incidents)	No significant difference in anxiety or depression between those who had completed stress inoculation training before a critical incident as compared to those who had not.
Ramey et al. (2016)	Resilience Training Intervention	Educational class on physiology of stress and practice altering stress response using breathing and biofeedback. Practice in the field with biofeedback devices.	No significant changes in psychological measures of stress, but younger participants had greater postintervention improvements. Significant changes in heart rate variability and improvement in physiological coherence. No changes in other physiological measures (blood pressure, cholesterol, etc.)

Table 3.3—Continued

Author (year)	Program Name	Program Description	Findings
Ramey et al. (2017)	Not reported	Participants in treatment and control groups attended training session that taught physiology of stress and how to modify physiological stress response. Treatment group received Inner Balance software and heart rate variability sensors to practice breathing and heart rate biofeedback and mentoring sessions with mental health professionals.	No significant changes in or between groups in self-reported stress outcomes. Improvements in the treatment group in heart rate variability coherence (changes in control group not reported).
van der Meulen et al. (2018)	Mental Strength Training	Participants were taught skills to build mental toughness, including goal setting, controlling reactions to stressful events, and reflecting on past events. Includes visualization and HeartMath techniques for controlling reactions to stressful events	Among full sample, interpersonal confidence increased in experimental group but decreased in comparison group. Effects on anxiety, depression, hostility, and PTSD nonsignificant. Among officers exposed to potentially traumatic events, small beneficial effects of training on acceptance of self, acceptance of life, and interpersonal confidence.

NOTE: NA = not applicable.

Key Takeaways on Scenario-Based Stress Response Training

Although there seems to be a growing literature base on scenario-based stress response training, these programs were not discussed in our interviews. In the literature, these programs had mixed support for their efficacy, though some evaluations lacked control groups and were limited by small samples, and those shortcomings precluded firm conclusions. Trainings were short (typically over the course of several days), which might have made them easier and less costly to implement than longer wellness programs. However, implementing some of these programs might require biofeedback equipment, which could increase costs. In addition, were DHS to consider adopting these programs, it could require tailoring training scenarios to fit the types of critical incidents experienced by DHS personnel. Given that these programs involve techniques that might not be widely familiar to DHS personnel, implementation could require third-party support from program developers, which might reduce feasibility. Although it is possible that future larger studies will observe benefits of these programs, current evidence provides limited support. Future research should include an analysis of barriers and facilitators to implementing this type of program; research designs involving larger sample sizes and control groups, when possible; and inclusion of all genders (many samples consisted primarily or exclusively of men).

Psychotherapy

Literature Review Findings

Psychotherapy includes a wide variety of talk-therapy techniques each of which rely on a therapeutic alliance between the person seeking support and a mental health professional, and can take place in variety of settings, such as one-on-one outpatient, group therapy, or a residential environment (Chaulk and Podnar, 2021). We identified 20 research studies that evaluated psychological or therapeutic approaches to addressing law enforcement and first responders' mental health, most of which focused on reducing trauma-related symptoms (summarized in Table 3.4; more details in Appendix B). Fourteen studies involved outpatient programs that incorporated CBT, EMDR, narrative exposure therapy (NET), compassion-focused therapy, or a combination of these therapeutic techniques (Alghamdi, Hunt, and Thomas, 2015; Beaumont et al., 2016; Biggs, Tehrani, and Billings, 2021; Boshoff, Strydom, and Botha, 2017; Bryant et al., 2019; Haugen, Goldman, and Owen, 2015; Haugen et al., 2016; Jarero, Schnaider, and Givaudan, 2019; Jones, Turner, and Barker, 2021; Kerswell et al., 2021; Marks et al., 2020; Smid et al., 2018; Tehrani, 2019; Won et al., 2020). The duration of the programs ranged from six to 16 weeks, with only one intervention lasting a single day (Jarero, Schnaider, and Givaudan, 2019). Only four studies were RCTs (Alghamdi, Hunt, and Thomas, 2015; Bryant et al., 2019; Jarero, Schnaider, and Givaudan, 2019; Jones, Turner, and Barker, 2021).

Of the 12 studies that measured symptom outcomes, all of them demonstrated statistically significant decreases in trauma-related symptoms and other mental health symptoms,

TABLE 3.4

Summary of Psychotherapy Studies

Author (year)	Program Name	Program Description	Findings
Alghamdi, Hunt, and Thomas (2015)	NET	Four outpatient NET sessions	Levels of reported symptoms of PTSD, depression, and anxiety were reduced, but not sustained at three- and six-month follow-up (likely influenced in part by substantial flooding to the local area)
Beaumont et al. (2016)	NA	Weekly outpatient TF-CBT or CBT plus CFT sessions	Significant reduction in symptoms of hyperarousal, avoidance, intrusion, depression, and anxiety posttherapy and a significant increase in self-compassion in both groups; adding CFT to TF-CBT did not improve outcomes in trauma-related or depression symptoms
Biggs, Tehrani, and Billings (2021)	NA	Brief trauma-focused outpatient therapy for PTSD (TF-CBT/EMDR/combination)	About 77% of those meeting criteria for PTSD and complex PTSD at baseline no longer met criteria after treatment (no difference in the decrease in symptoms of PTSD, depression, or anxiety between the two groups)
Bond (2017)	WCPR	Residential program for LEOs with PTSD symptoms; consists of peer driven, clinician-guided, group therapy, peer support, critical incident stress debriefings, CBT, EMDR, psychoeducation, AA meetings, and nondenominational spiritual support	Decrease in PTSD symptoms from the preprogram test scores at both 30-day and 60-day mark; significant decrease in scores that measured reexperiencing, avoidance, and hyperarousal
Boshoff, Strydom, and Botha (2017)	Psycho-Social Therapeutic Programme	Outpatient psychological debriefing and trauma intervention with psychological and social components (relaxation, identifying feelings and emotions, rating feelings, dealing with triggers, relapse prevention, etc.)	The intervention showed a significant positive change to police officials' overall understanding of trauma, and the acquisition of knowledge and skills to improve their mental health, better cope with the impact of traumatic events, and the ability to change trauma-related thoughts and beliefs
Brucia (2018)	WCPR	Residential program for LEOs with PTSD symptoms; consists of peer-driven, clinician-guided, group therapy, peer support, critical incident stress debriefings, CBT, EMDR, psychoeducation, AA meetings, and nondenominational spiritual support	Significant reduction in PTSD symptoms from baseline to posttreatment and 30-day follow-up

Table 3.4—Continued

Author (year)	Program Name	Program Description	Findings
Bryant et al. (2019)	Not Applicable	Outpatient CBT for PTSD	Waiting list group had smaller reductions in symptoms and smaller improvements on psychological and social quality of life than long CBT and brief CBT; no differences on outcome measures between long CBT and brief CBT at follow-up
Chaulk and Podnar (2021)	Group-Based Cognitive Processing Therapy	Group outpatient therapy sessions using the <i>Cognitive Processing Therapy Veteran/Military Version: Therapist's Group Manual</i> (Chard et al., 2013)	Participants reported experiencing less severe symptoms of PTSD, depression, generalized anxiety, and general distress at the end of treatment
Haugen, Goldman, and Owen (2015)	Not Applicable	Weekly integrative outpatient psychotherapy sessions, including elements of psychodynamic and CBT approaches	Sudden improvement in symptoms occurred in 18.9% of clients; however, these gains were not associated with treatment outcome and are similar to previous studies with naturalistic samples; sudden deteriorations occurred in 27% of clients, which is slightly higher than in naturalistic samples
Haugen et al. (2016)	Not Applicable	Weekly integrative outpatient psychotherapy sessions, including elements of psychodynamic and CBT approaches	A high therapeutic alliance, using more or less psychodynamic interpersonal techniques did not significantly affect outcomes; however, therapists' use of fewer CBT techniques when the alliance was high led to better outcomes; no differences were found between techniques and outcomes for clients with lower alliances
Jarero, Schnaider, and Givaudan (2019)	EMDR Protocol for Recent Critical Incidents	Two 60-minute EMDR treatment sessions	Results showed a significant decrease in PTSD symptoms between premeasures and postmeasures compared to control group, with treatment effect maintained at the 90-day follow-up, with participants directly exposed to potentially traumatic work-related events during this time
Jones, Turner, and Barker (2021)	Rational Emotive Behavior Coaching	Eight 60-minute outpatient cognitive behavioral 1:1 coaching sessions over a 12-week period	Significant reduction in irrational beliefs and increase in satisfaction of basic psychological needs in treatment but not control group; participants reported reduction in stress and increased psychological well-being and positive emotions

Table 3.4—Continued

Author (year)	Program Name	Program Description	Findings
Kerswell et al. (2021)	Memory Reconsolidation Therapy	Incorporating memory reconsolidation principles into evidence-based outpatient exposure therapy for PTSD	Reliable change for all three participants on measurements of general psychological well-being, which was maintained at three-month follow-up; two participants demonstrated a clinically significant reduction of trauma symptoms, while only one of these participants maintained a clinically significant change at three-month follow-up
Marks et al. (2020)	Trauma Management Therapy	Individual outpatient exposure therapy and group therapy (including anger management training, behavioral activation for depression, social reintegration, and sleep hygiene training)	At posttreatment, participants demonstrated significant decreases from pretreatment to posttreatment in clinician-rated and self-reported symptoms
McCue (2019)	LEADER program at McLean Hospital	Residential program for first responders to address trauma, depression, and/or addiction; group sessions focused on stress management, sleep, family, resiliency; individual therapy and case management; AA meetings for those with substance use issues	All participants showed improved scores for emotional functioning at discharge; participants with a non-substance use disorder diagnosis reported greater depressive symptoms upon admission and showed more symptom improvement over the course of treatment; no differences in program effect for police versus firefighters
Mithoefer et al. (2018)	Not Applicable	MDMA-assisted, client-directed outpatient psychotherapy	After one month, a larger percentage of participants in the active dose groups did not meet PTSD diagnostic criteria than in the group that received 30 mg; depression symptoms for the 125 mg group were reduced; global assessment of functioning scores improved, with significantly higher functioning in the 75 mg and 125 mg groups; more participants reached clinically significant score decreases after two active doses of MDMA
Morrissey (2016)	EMDR Integrated Group Treatment	Group EMDR therapy for first responders	Reduced scores were recorded in the areas of avoidance, intrusion, hyperarousal, and overall total scores; did not find a significant correlation between secondary traumatic stress/vicarious trauma and contributing or protective factors; PTSD was significantly associated with perceived lack of organizational support

Table 3.4—Continued

Author (year)	Program Name	Program Description	Findings
Smid et al. (2018)	Brief eclectic psychotherapy for PTSD	Outpatient TF-CBT: brief eclectic psychotherapy	Police officers who reported more injury/maltreatment events or private traumatic events (not including the loss of loved ones) were likely to have more PTSD symptoms at baseline and showed larger symptom reductions during treatment; police officers who reported more losses of loved ones or colleagues showed smaller reductions in PTSD symptoms during treatment and more persistent concentration problems posttreatment
Tehrani (2019)	Not Applicable	Outpatient trauma therapy (could include EMDR, TF-CBT, or both)	81% of participants no longer exhibited clinically significant trauma symptoms; participants reported improvements in their perceived work capacity and quality of social relationships; it was not possible to further analyze which intervention type was most effective
Won et al. (2020)	Visiting Counselling Centre for Firefighters	In an outpatient setting, the program included a group education session, and an individual counseling session, plus three additional 1:1 counseling sessions and tailored brief intensive counseling for high-risk participants or those who volunteered	Participants showed meaningful improvement in all psychopathological scales; those who participated in brief intensive counseling experienced more significant change in certain scales than the participants who did not

NOTE: AA = Alcoholics Anonymous; CFT = compassion-focused therapy; LEADER = Law Enforcement, Active Duty, Emergency Responder; MDMA = 3,4-methylenedioxymethamphetamine; TF-CBT = trauma-focused CBT; WCPR = West Coast Post-Trauma Retreat.

such as stress level, depression, and irrational thoughts. One study, which measured sudden symptom improvement and sudden deterioration or worsening of symptoms, observed that sudden deteriorations occurred in 27 percent of first responders, which is slightly higher than occurred in naturalistic samples (Haugen, Goldman, and Owen, 2015). The researchers emphasized the importance of therapists monitoring sudden deterioration using client feedback tools and making adjustments to treatment when necessary.

Two studies evaluated outpatient interventions in a group format using either EMDR or cognitive processing therapy (Chaulk and Podnar, 2021; Morrissey, 2016). EMDR is a therapeutic technique used to reduce the negative effects of recalling certain memories, while cognitive processing therapy focuses on processing emotions associated with a traumatic event. Although the designs of the studies were different, both resulted in a decrease of PTSD symptoms after treatment. Chaulk and Podnar (2021) found that scores for depression, generalized anxiety, and general distress had also decreased after the 12-week study, which used cognitive processing therapy.

Three studies evaluated two residential treatment programs designed for LEOs, the LEADER Program at McLean Hospital and the WCPR program. Both programs included such elements as group therapy, psychoeducation, and substance use support. The evaluation of the two-week LEADER program found that participants were discharged with improved scores for emotional functioning (McCue, 2019). Both studies that evaluated the six-day WCPR program also found a decrease in PTSD symptoms 30 days after treatment ended (Bond, 2017; Brucia, 2018).

One study examined the efficacy of combining a psychoactive medication and psychotherapy. Biggs, Tehrani, and Billings (2021) reported on a phase 2 clinical trial of the efficacy and safety of MDMA-assisted psychotherapy for treating veterans and first responders with chronic PTSD who did not obtain good results with previous treatment. One month after the initial intervention, the treatment groups that received dosages of 75 mg and 125 mg had significantly greater decreases in PTSD symptoms than the group that received only 30 mg, indicating that adequate doses of MDMA could influence the effects of psychotherapy.

Interview Findings

One interviewee explained that during the initial training period, LEOs across all federal departments (DHS, the U.S. Department of Defense, the U.S. Department of Justice, U.S. Department of Treasury, U.S. Department of Agriculture, etc.) have access to mental health counselors for support as needed. The counseling and assessment services are offered by one of the on-site licensed clinicians, and a trainee can either be referred by a program coordinator or instructor or initiate services themselves by calling a 24-hour support line. Once trainees complete their training, they are expected to contact their EAPs for support.

Some field office locations have on-site clinicians, but many of the remote field offices lack this type of support. One interviewee reiterated that the use of licensed professional mental health clinicians to support employees, whether it be through counseling or through

a training program, is an effective practice. The in-house mental health clinicians in some components provide support initially but then refer out to a contracted EAP counselor or to a clinician in the local community. Although interviewees discussed programs providing or connecting DHS employees with clinician support, they did not discuss specific therapeutic approaches used in DHS or local/state law enforcement agencies or the average duration of treatment.

Each component in DHS has contracted with an EAP to support its employees with a variety of needs, such as mental health and relationship counseling, financial and legal services, and other resource- and referral-based assistance. There are plans as of this writing to roll out a DHS-wide EAP, which will standardize this employee benefit across the organization. One interviewee mentioned that components do have some flexibility, including hiring an EAP clinician for each field office and sending EAP personnel to specific offices, for such instances as the loss of an agent. At least one component employs a hybrid approach in which both EAP-contracted vendors and internal clinicians are used.

Interviewees from several components commented on the short-term nature of the counseling services offered through their EAPs (e.g., capped at three sessions per presenting issue), which could be considered a drawback or inefficiency that might deter employees. Others expressed concerns about the service providers lacking cultural competence, specifically as it relates to law enforcement. In addition, one interviewee suggested that the EAP utilization rates in their component were low.

Key Takeaways on Psychotherapy

According to the literature, incorporating CBT as a treatment approach is effective for reducing symptoms of PTSD and other mental health symptoms for law enforcement professionals. Short-term, intensive, residential programs and group psychotherapy also appeared to benefit this population. Other treatment techniques showed some potential as well, such as EMDR and MDMA-assisted therapy. The limitations of these studies, which focused specifically on law enforcement, were small samples, lack of control groups, and a lack of long-term assessment (more than one year after intervention) of mental health symptoms.

Because of the heterogeneity of the studies, a synthesis of the results was not possible. However, there are evidence-based psychotherapy practices that DHS could implement to strengthen the current offerings. As summarized in Table B.6, most individual outpatient counseling interventions lasted a minimum of six to eight sessions and, as stated above, included elements of CBT. Because only two group therapy studies focusing on law enforcement personnel were included in this study, a next step should be to review research conducted with non-law enforcement populations to determine whether group therapy could be included as a program that DHS offers through one of its existing mechanisms.

Although it appears that on-site counselors are available during the initial training period for LEOs, there was limited discussion during the interviews about the use or success rate of continuing outpatient therapy through outside providers. This information was difficult

to capture through our interviews due to the confidential nature of psychotherapy as a support service. Given the evidence supporting the benefits of psychotherapy for law enforcement personnel, DHS should consider reviewing its referral process to external providers and improving this process, as needed, to support continuity of care for employees.

Although several interviewees spoke about the usefulness of EAPs for identifying specific types of resources to support various needs, such as child care and legal support, there seemed to be several challenges related to the mental health counseling component. Interviewees cited the limited number of sessions and concerns about cultural competence as factors that influenced the use of the service. Although counseling services through the EAPs were commonly discussed in interviews, very little (if any) efficacy research has been conducted about these programs.

Group Prevention Skills and Knowledge Training

Literature Review Findings

Group prevention skills and knowledge training programs are group programs that provide participants mental health–related knowledge or teach skills for improving mental health, stress, or resilience. We identified 18 research studies that assessed group prevention skills and knowledge training programs (summarized in Table 3.5; more details in Appendix B). Most of the programs were designed to address multiple wellness-related topics with a focus on one or more core themes, including recognizing and managing stress, increasing resilience, and promoting emotional well-being. Less frequently studied topics included trainings focused specifically on depression, stigma associated with LEO mental health reporting, and psychological distress associated with coronavirus disease 2019 (COVID-19).

Most studies reported that trainings had at least one beneficial outcome, while three studies did not report significance tests because they used descriptive analysis or they were pilot or exploratory studies (LaMontagne et al., 2021; Sommerfeld et al., 2017; Turgoose et al., 2017). One RCT of a resilience intervention found that it did not have a significant effect on resilience, well-being, or other mental health outcomes (Wild, 2016).

Most studies included LEOs in their sample, though several included other first responders. The studies were conducted in 10 countries, with 5 in the United States (Blumberg et al., 2020; Drake, 2021; Kosor, 2017; Mahaffey et al., 2021; Thompson and Drew, 2020). Six of the studies used a variant of a time-series design without a control group (Au et al., 2019; Blumberg et al., 2020; Carleton et al., 2018; Drake, 2021; Stelnicki et al., 2021; Turgoose et al., 2017) and 8 self-identified as RCTs (Brouzos et al., 2021; Chitra and Karunanidhi, 2021; LaMontagne et al., 2021; Mahaffey et al., 2021; Nwokeoma et al., 2019; Skeffington et al., 2016; Wild, 2016; Wong, 2021). Most of the studies used a questionnaire to measure outcomes, and many relied on well-established batteries to gather information about depression, anxiety, or stress (such as the Depression Anxiety Stress Scale-21 or Connor-Davidson Resilience Scale 10).

TABLE 3.5

Summary of Group Prevention Skills and Knowledge Training Studies

Author (year)	Program Name	Program Description	Findings
Au et al. (2019)	Emotional fitness training	Training in emotional fitness, including resilience, positive emotions, cognitive flexibility, and emotional well-being; provided to staff and supervisors	Support for the effectiveness of emotional fitness training to enhance resilience, positive emotions, cognitive flexibility, and emotional well-being
Blumberg et al. (2020)	HEROES	Training that combines specific techniques (e.g., mindfulness, breathing exercises, psychoeducation) for promoting well-being among first responders	Results showed that participants with higher distress and fewer psychological resources before the training benefited most from the HEROES Project and that the training significantly improved psychological capital (including self-efficacy, hope, optimism, and resilience) and reduced stress, depression, anxiety, and trauma symptoms for all participants.
Brouzos et al. (2021)	Stay Safe–Feel Positive	An adaptation of the “Staying Home–Feeling Positive” intervention (Brouzos et al., 2021), seeking to meet police officers’ needs regarding the promotion of their personal strengths and resilience and the prevention and/or alleviation of psychological distress caused by the COVID-19 pandemic	Results showed the intervention group had significant increase in empathy, resilience, and positive emotions and a significant decrease in fear of the coronavirus, negative emotions, loneliness, depressive symptoms, and anxiety emotions compared to the control group; police officers in the intervention group were able to develop their personal strengths in challenging times.
Carleton et al. (2018)	Road to Mental Readiness	Training to improve short-term performance and long-term mental health outcomes	No significant changes in mental health, resilience, or work engagement; significant increases in mental health knowledge and small temporary decreases in stigma
Chitra and Karunanidhi (2021)	Not named	Resilience training on psychoeducation, reflection, role-playing, modeling, self-monitoring of response, and image-guided relaxation.	Results indicate that the training showed improvement in enhancing resilience, job satisfaction, and psychological well-being of female police officers and in reducing occupational stress
Drake (2021)	Blue Courage	Police training program to integrate officer wellness and legitimacy; holistic training program about wellness, culture, and cynicism; teaches breathing techniques to manage stress and exposes officers to other wellness techniques	Positive significant difference in emotional wellness scores after completing training
Kosor (2017)	Psychological Readiness Training	Training that included PTSD, depression, anxiety, and stress levels	Significant improvement on all four topics

Table 3.5—Continued

Author (year)	Program Name	Program Description	Findings
LaMontagne et al. (2021)	Creating Healthy Workplaces	Multicomponent leadership development program for station leaders (Leading for Well-Being) and tailored mental health literacy training for station leaders and troops (HM@W)	Participation rates with leadership were highly variable—about half of leaders and troops completed the literacy program; findings included a list of barriers and facilitators to participation that should be considered in the design of future programs; descriptive analysis, significance tests not reported
Mahaffey et al. (2021)	Disaster Worker Resiliency Training Program	Workshop on recognizing signs of stress, obtaining support, and building resilience using stress reduction and coping strategies	Significantly greater increase in healthy lifestyle behaviors, but not stress, PTSD symptoms, or depression symptoms in training group as compared to control group. Among participants exposed to potentially traumatic events following the intervention, significantly improved healthy lifestyle behaviors and lower stress, PTSD symptoms, and depression symptoms in training groups than in the control group.
Nwokeoma et al. (2019)	Rational Emotive Occupational Health Coaching	Training on the meaning of stress, identification of stressors and symptoms, perception stress, stressful situations during operations, relevant skills to stop automatic thought patterns, choosing best alternative plan, acting out the plan, assessment of the chosen plan, changing behavior patterns, and sleep management skills	Program had significant effect on work-related stress management
Romosiou, Brouzos, and Vassilopoulos (2019)	Integrative Group Intervention	Group training program on concepts from person-centered approach, positive psychology, CBT	Improved emotional intelligence, empathy, resilience, and perceived stress in the experimental group following training as compared to control group. Some effects decreased over time at the three-month follow-up.
Skeffington et al. (2016)	Mental Agility and Psychological Strength training	Resilience training for PTSD with education on responses to stress, coping strategies, the role of support, and self-care	Results indicated training was effective in producing trauma knowledge, but no evidence that the intervention was effective across other measures.
Sommerfeld et al. (2017)	Wellness kit	Training workshop and online modules designed to provide education on wellness	Participants reported positive feedback about the information that they received from the workshop and the modules.

Table 3.5—Continued

Author (year)	Program Name	Program Description	Findings
Stelnicki et al. (2021)	Before Operational Stress	Designed to fill a gap in public safety personnel services about operational stressors on individuals; combines educational and didactic materials from CBT with group processing facilitated by a clinician; not a treatment program; designed to increase self-awareness, healthy relationships, and positive mental health habits	Small, statistically significant improvements in symptoms of PTSD, quality of life, stigma, and perceived social support from baseline; qualitative findings revealed that participants had a positive perception of the program.
Thompson and Drew (2020)	warr;or21	A pilot study that included an in-person introduction followed by online training and journaling	Course was well received, participants mostly satisfied, breathing and gratitude exercises were considered successful, and participants reported they would continue
Turgoose et al. (2017)	Unnamed pilot	Training on compassion fatigue, secondary traumatic stress, and burnout	Results indicated that officers who served longer had greater compassion fatigue, secondary traumatic stress, and burnout.
Wild (2016)	Mind's resilience intervention	Builds on five paths to well-being: be active, take notice, keep learning, give, connect. Training and online interventions	Intervention did not have a significant effect on resilience, well-being, self-efficacy, feelings of support at home or work, or other mental health outcomes.
Wong (2021)	CBT with mindfulness	CBT psychoeducational intervention on symptom levels of anxiety and depression; in-person classes facilitated by a mental health professional on the fundamentals of CBT and mindfulness	Statistically significant improvement in self-reported symptoms of depression

NOTE: HEROES = hope, efficacy, resilience, optimism, empathy, and socialization; HM@W = Healthy Minds @Work.

The authors reported some common barriers to implementing the trainings and accurately measuring the results, including officer cynicism and police culture, that reduce the efficacy of programs (Carleton et al., 2018). Other barriers were identified during our review that made it difficult to draw conclusions about the collective body of literature. First, the durations of the trainings ranged from 90 minutes to 55 weeks, with most of the training requiring eight or more weeks to complete. It is possible that the length of the training is correlated with the outcome, particularly on measures of knowledge and awareness. Second, the programs did not identify their conceptual models with enough specificity to allow comparisons and did not use a common implementation or evaluation that is needed to compare results across studies. Third, many of the programs were not evaluated with a rigorous design, such as an RCT. Fourth, although many of the studies used well-established batteries (as mentioned previously), they were not consistently applied, making the comparison of findings more difficult.

Interview Findings

Several interviewees reported that participants often received introductory information about the various services available during their operational training but that there was a preference to present the initial wellness-related training separately from the operational training. Respondents also noted that it would be ideal for the training sessions to include the staff who will provide posttraining mental health support. Their experience showed, they said, that this allows for more realistic discussions during the training and builds a rapport that can carry forward in the field.

One interviewee explained that there are approximately 20 wellness-related programs and curriculums that can be taught to law enforcement trainees during their initial training periods, depending on the government agency and the component. The content could include skill techniques, such as self-defense and exercise physiology, and there are five or six mental health segments that review such concepts as healthy coping skills.

Although interviewees in several components talked about resilience training, it did not appear to be a uniform program across DHS. Because of the nature of our semistructured interviews, the nuances of the content of the training programs were not captured in detail. Several interviewees reported that the curriculums are based on scientific literature but noted that they would like to see programs incorporate more evidenced-based strategies based on research conducted on the law enforcement population.

Key Takeaways on Group Prevention Skills and Knowledge Training

Combing the literature and the interviews yields key takeaways for future programs and evaluations. DHS interviewees were supportive of resilience and stress reduction training and would like to see more evidence-based trainings related to law enforcement. It should be noted that the literature review identified 18 studies published since 2015 with law enforcement or other first responders in their samples. However, the varied program duration, training con-

tent, and evaluation methods might impede the ability of the content developers to identify which programs were successful and which program components would be successful.

The varied content and format of group prevention skills and knowledge training programs might make it difficult for organizations, such as DHS, to determine which programs would be beneficial to their populations. In addition, little guidance exists to help organizations implement existing programs with fidelity. Research is needed that evaluates manualized training programs specifically geared to law enforcement and first responder populations. This could help DHS determine which programs fit its needs and have the potential to provide wellness benefits, a need expressed by the interviewees.

Physical Fitness and Physical Health Programs

Literature Review Findings

Law enforcement wellness physical fitness programs are designed to promote the health and fitness of police officers and other law enforcement personnel. These programs typically include a combination of physical training, nutrition guidance, and mental health support to help officers maintain their physical and mental well-being, which is critical to their demanding and often stressful jobs. The aim of these programs is not only to enhance the overall health of law enforcement personnel but also to improve job performance, reduce the risk of injuries, and increase overall job satisfaction.

The literature review found eight articles that met our criteria and focused on physical fitness evaluations (summarized in Table 3.6; more details in Appendix B). The eight programs involved some sort of physical education, training program, meditation, or yoga program. Although the studies had different outcomes, the overall findings were positive. For example, studies found significant reductions in psychological distress during the intervention (Chu, Lau, and Mak, 2022); significant reductions in PTSD scores, depression, anxiety, and stress and marginal reduction in insomnia severity (Rosenbaum et al., 2022); and better stress management and less tobacco use, better sleep quality and amounts, better general health, and decreased alcohol use (Kuehl et al., 2016). Another evaluation found that participants in the physical practice (total body conditioning) and wellness courses had fewer mental health problems and had an increase in the use of adaptive coping strategies between the two time points studied. An evaluation of a fatigue management training intervention found reductions in insomnia and headaches and improvements in satisfaction with sleep (James, Samuels, and Vincent, 2018). After a psychoyoga training intervention, an evaluation found that the experimental group had improved in areas of emotion management, self-motivation, empathy, social skills, satisfaction with life, and self-esteem and experienced a reduction of verbal aggression, hostility, anxiety, and perceived stress as compared to control group (Singh et al., 2021).

TABLE 3.6

Summary of Physical Fitness and Physical Health Studies

Author (year)	Program Name	Program Description	Findings
Chu, Lau, and Mak (2022)	Modified Healthy Body Healthy Mind program	Physical activity	Reductions in depression 1-week postintervention in intervention group but not control group. Intervention group reported lower quality of life one week postintervention. Treatment group had increase in perceptions of treatment credibility.
Fischetti et al. (2019)	Not Reported	Multilateral training program consisting of agility and resistance training	Results indicated that the treatment group showed less stress and greater physical and mental well-being than the control group.
James, Samuels, and Vincent (2018)	Calgary Police Service Fatigue Training Program	Fatigue management training intervention	Improvements in insomnia, satisfaction with sleep, and headaches
Kuehl et al. (2016)	SHIELD	Physical education	Better fruit and vegetable intake, better stress, better tobacco use. Marginally better sleep quality and amounts, general health, and heavy alcohol use
Maran, Zedda, and Varetto (2018)	Not Reported	Physical education or meditation	Participants in the physical practice and wellness courses had fewer mental health problems and reported an increase in the use of adaptive coping strategies.
McKeon et al. (2021)	Not Reported	Mental health-informed physical activity program	Qualitative results indicated high acceptability. Results indicated significant reductions in psychological distress during the intervention. Significant improvements in quality of life measures found during preintervention and postintervention periods, total depression, anxiety, and stress scores. Changes in perceived social support from family, friends, and sleep quality were not significant.
Rosenbaum et al. (2022)	Reconnect	Supervised exercise sessions	Significant reductions in PTSD scores, depression, anxiety, and stress. Marginal reduction in insomnia severity. No significant changes in alcohol use.
Singh et al. (2021)	Not Reported	Psychoyoga training intervention	After the 8-week program, the experimental group had improved verbal aggression, hostility, emotion management, self-motivation, empathy, social skills, anxiety, perceived stress, satisfaction with life, and self-esteem as compared to the control group.

NOTE: SHIELD = Safety and Health Improvement: Enhancing Law Enforcement Departments.

The program durations varied significantly, lasting four hours (James, Samuels, and Vincent, 2018), six weeks (Chu, Lau, and Mak, 2022), eight weeks (Fischetti et al., 2019; Singh et al., 2021), ten weeks (McKeon et al., 2021), and 12 weeks (Rosenbaum et al., 2022).

Interview Findings

During the interviews, physical fitness programs and initiatives were discussed. DHS is working on its health and wellness policies and programs, which include both physical fitness and mental health activities. We heard about an agencywide physical fitness program that dedicates three hours a week to physical fitness. According to one interviewee, this program is seen as a benefit across the agency. Another component also has designated time for physical fitness, with a maximum of six hours per pay period. An interviewee said of the program, “It allows you to be able to touch some grass and take time out of our pay day and go to the gym, go for a walk, etc.” Another interviewee discussed plans for revising health and wellness, which include employees receiving five hours a week: three hours for physical fitness and two hours for mental health activities. The interviewee said of the program, “So . . . meditation, mindfulness, yoga, breathing, walking, . . . things like that, and we think that’s going to be very paramount, especially for our first responders to try to just take a few minutes of time, some dedicated time to help.”

When discussing dedicated time for physical activity, an interviewee acknowledged that there are a lot of things that could be done during that time. They told us about an early evaluation of a fitness app (the interviewee did not provide the name of the app) that is in the second phase of evaluation.

We also heard about the launch of a physical readiness assessment to the field. This includes job simulations that can be done on the job to give the individual an idea of where they are and, more importantly, to give the organization an idea of where its employees are with regard to readiness.

Key Takeaways on Physical Fitness and Physical Health Programs

Law enforcement wellness physical fitness programs include a combination of physical training, nutrition guidance, and mental health support to help officers maintain their physical and mental well-being. These outcomes are critical to their demanding and often stressful jobs. We heard during the interviews that these programs are widely implemented across DHS. Although there were limited evaluations on this type of wellness program, the overall findings were positive in terms of reductions in depression, anxiety, stress, and improved sleep quality.

Mobile Health Applications

Literature Review Findings

In more recent years, there has been an uptick in the development of mobile apps to support mental health and wellness, though we identified only five studies related to law enforcement use of mobile health programs (summarized in Table 3.7; more details in Appendix B). We identified one study that evaluated the efficacy of a mental health- and wellness-related text message program geared toward first responders that sent participants daily supportive and psychoeducational text messages. The findings demonstrated a reduction in symptoms of anxiety and depression (Obuobi-Donkor et al., 2023).

Fitzhugh et al. (2019) evaluated mindfulness tools for police officers in the United Kingdom (UK) that were available either through apps or web browsers. Participants were randomly assigned to one of three groups: the Headspace mindfulness app, MindFit Cop (online mindfulness training for police), or a control group. Police officers in the Headspace and MindFit Cop groups had improvements in a variety of outcomes, including life satisfaction and resilience, but also reported barriers to use, which included finding time and a place to use the app and technical issues. The researchers noted that 27 percent of the participants in the Headspace group and 21 percent of the participants in the MindFit Cop group did not end up using the app; therefore, data were not collected and analyzed for these participants (Fitzhugh et al., 2019).

In terms of feasibility of mobile apps as a tool for law enforcement and first responders, three studies aimed to learn more about the use and perceived helpfulness of mobile apps (Anderson, 2021; Heyen et al., 2021; Stern, 2019). Although all three had small samples, some preliminary information was gained. Although LEOs and first responders indicated that mental health apps could be helpful, this population might be disinclined to use an app that is directly associated with a mandatory training course. One study found that participants used modules in the app related to self-efficacy and mindfulness more than they use those for such topics as sleep quality and gratitude or positive reframing (Heyen et al., 2021).

Interview Findings

In the early 2000s, one DHS component purchased a Headspace subscription for employees at the agency to use on their government-issued smartphones. Other DHS employees have access to a mobile health app that provides mental health screening tools, such as the Patient Health Questionnaire and Alcohol Use Disorders Identification Test, along with tips and information on demand. Another component was also said to have subscribed to Headspace for a specific group of employees, and it was noted during an interview that the utilization rate was around 10 percent. One interviewee believed that employees might be more likely to use the app than to use their EAPs.

Efforts to identify a broadly applicable wellness app have also been made; however, it has been difficult to find an app that addresses multiple areas of wellness, such as physical fitness,

TABLE 3.7
Summary of Mobile Health Application Studies

Author (year)	Program Name	Program Description	Findings
Anderson (2021)	PTSD Coach	Smartphone app that provides psychoeducation, symptom tracking, symptom management, and resources for PTSD	68–91% of participants found the app to be at least “moderately helpful”
Heyen et al. (2021)	COVID-19 Anxiety and Stress Resilience Training	Unguided electronic mental health program	The self-efficacy memory module was used most often; the second-most frequently used module was mindfulness
Fitzhugh et al. (2019)	Headspace; MindFit Cop	Headspace group had access to Headspace app, a mindfulness app, and website. MindFit Cop group had access to an 8-week online mindfulness course for police	The Headspace group had improvements in life satisfaction, resilience, mindfulness, and performance at ten weeks and 24 weeks; the MindFit Cop group had improved well-being and life satisfaction scores at ten weeks and 24 weeks, and improvements in resilience and performance at 24 weeks; both intervention groups had reduced presenteeism at 24 weeks, but no effects on sick leave or other type of leave
Obuobi-Donkor et al. (2023)	Text4PTSI	Participants received daily supportive and psychoeducational SMS text messages for six months	Results showed a significant reduction in symptoms associated with major depressive disorder and reduced severity of anxiety symptoms
Stern (2019)	Advanced Law Enforcement Resilience Training (ALERT)	Resilience/mindfulness training derived from dialectical behavior therapy delivered via mobile phone app	Findings indicate that it is not feasible to get police to engage with a mobile app after training using the current methodology; on average, participants engaged with the app for six minutes over the course of the study (90 days) and discontinued using the app after only 68 days

nutrition, mental health, **and** sleep. In addition, one interviewee conveyed the challenges of getting apps approved by agencies. Even if an app is approved for government-issued smartphones, concerns about privacy might deter employees from using them.

Key Takeaways on Mobile Health Applications

Very few studies have evaluated the efficacy of mental health apps for the law enforcement population; however, there does appear to be some potential for mobile apps that focus on mindfulness. According to the research and our interviews, some of the barriers to making use of mobile apps are time constraints, finding an appropriate location to engage with the

apps, and having access to them only on their government-issued phones, given that privacy was also a concern. DHS might consider subscribing to a mindfulness app for its employees that is not related to mandatory training and can be used from their personal smartphones.

Peer Support, Mentoring, and Chaplain Programs

Literature Review Findings

Law enforcement peer support and mentoring programs are initiatives designed to provide emotional and mental health support to law enforcement personnel from their fellow officers. Although these terms are often used interchangeably, *peer support* involves people with similar experiences coming together to help each other, and *mentoring* often involves one-to-one support from a mentor. These programs recognize the unique challenges and stresses that law enforcement professionals face and aim to create a support network in the department. These programs recognize that officers often turn to their peers first when facing challenges. We have included chaplain programs in this section because DHS uses chaplains across the agency as one way to provide emotional and mental health support. Although the literature review revealed no studies about chaplain programs for law enforcement, the interviewees spoke of these programs.

Although formal and informal peer support is implemented across DHS, we found limited research testing the effectiveness of these programs. Only four articles met our search criteria (summarized in Table 3.8; more details in Appendix B). Overall, despite the dearth of evaluations of these programs, positive outcomes were achieved. Outcomes that were measured included decreased anxiety (Gill, Roulet, and Kerridge, 2018), increased program satisfaction (Hale, 2020), and increased mental health literacy and that the information was used in other facets of participants' lives (Katzman et al., 2021; Milliard, 2020).

Mentors reported higher levels of meaning, and mentees had marginally lower levels of self-reported competence and marginally higher self-determination. Qualitative findings showed that mentors viewed mentoring as a source of satisfaction and meaning, though it was a responsibility. Mentees appreciated practical support and guidance (Gill, Roulet, and Kerridge, 2018).

A qualitative evaluation of a peer-support programs found that peer support contributes to enhancing mental health literacy among police officers and that it significantly contributes to reducing the stigma associated with seeking help (Milliard, 2020).

Interview Findings

During the interviews, we discussed peer-support programs with people from many of the components. Congress recently sent out a mandate about peer support, in particular DHS has tasked all components with implementing peer support by 2027. Most components already have it, but not all of them are large, comprehensive programs. Some of the newer components do not have any. As one interviewee stated, "Longer term, [I would] like to establish a peer

TABLE 3.8
Summary of Peer Support, Mentoring, and Chaplain Program Studies

Author (year)	Program Name	Program Description	Findings
Gill, Roulet, and Kerridge (2018)	Not Reported	Mentorship	Mentors in experimental group had lower anxiety than those in control group; no differences in anxiety for mentees; mentors reported higher levels of meaning; mentees had marginally lower levels of self-reported competence and marginally higher self-determination; qualitative findings showed that mentors viewed mentoring as source of satisfaction and meaning, though it was a responsibility; mentees appreciated practical support and guidance
Hale (2020)	Hartford Police Peer Support Program	Peer-support program	34% reported having used the peer-support program at least once. Among those who had used the peer-support program, 53% reported being very satisfied, 35% reported being satisfied, 3% reported being unsatisfied, and 3% reported being very unsatisfied; 100% would recommend the peer-support program to another member of the police department
Katzman et al. (2021)	Project Echo	Peer-support program	External factors (the greatest barriers arose from external global factors); community during sessions (the greatest strength of Echo was that it successfully built community during sessions); used skills after sessions (participants used the information and skills that they learned in Echo in their personal and professional lives); and amplification of information (participants shared the information they learned with their colleagues [i.e., other first responders] and their patients or communities [e.g., family])
Milliard (2020)	Not Reported	Peer-support program	Peer support enhances mental health literacy among police officers, and it significantly contributes to stigma reduction; internal policy demonstrated an organizational commitment to mental health and peer support; provincial standard is necessary to ensure best practices and risk management in the creation and maintenance of peer-support programs

support network that would allow peer supporters, no matter where they’ve been trained, to support employees who might be in components that don’t have an established program yet.”

A few of the components had formalized training programs that cover active listening, depression, suicide prevention, and critical incident debriefing. Peer support is integrated into trainings; one component has started to train agents in high-stress departments (such as human trafficking) in peer support.

Many of the programs mentioned were working hard to create better peer-to-peer mentorship opportunities. Interviewees mentioned that they do not have a formal peer-support program but use informal peer networks.

Multiple components explained that they did have chaplain programs, some more robust than others. Some of the chaplain programs are used similarly to the peer-support programs

and are used after significant events. One component has a basic chaplain's course and an advanced chaplain's course. The advanced chaplain's course teaches additional information, including an additional suicide prevention module to increase participants' skills. One interviewee mentioned that there is a lot more involved with the chaplain academy than first appears, so when chaplain applicants are solicited, very few people apply, and most of those never qualify. One interviewee said, "Some chaplains, they rarely talk to anybody or hardly do anything because they just don't have that time. Plus, you know, a lot of people like the idea of being a chaplain, but they don't really understand what is involved."

Key Takeaways on Peer Support, Mentoring, and Chaplain Programs

DHS has put a lot of emphasis on implementing and using peer-support programs, including chaplain programs, with the understanding that there are unique challenges and stresses that law enforcement professionals face and that officers often turn to their peers first when facing challenges. Few rigorous evaluations have been conducted on the efficacy of these programs; however, the research that does exist points to satisfaction among users and to the fact that the programs can contribute to enhancing mental health literacy among police officers and significantly contribute to stigma reduction. As components work to design and strengthen their existing programs, they should consider what guidelines and existing programs exist, including at DHS, that have been developed by the International Association of Chiefs of Police (2020) and by law enforcement agencies across the country (Ramchand et al., 2019). The chaplain program in particular seems to be in need of a set of practices and resources.

Critical Incident Response Programs

Literature Review Findings

Critical incident response programs provide support, debriefing, counseling, and other services to first responders in the aftermath of critical incidents or potentially traumatic events. These programs vary in their content and delivery, ranging from single debriefing sessions to programs with multicomponent follow-up support. We identified six studies of critical incident response programs (summarized in Table 3.9; more details in Appendix B).

Four of the six studies assessed general perceptions of critical incident response programs (Calhoun, 2020; Jonker, Graupner, and Rossouw, 2020; Taylor-Gray, 2018) or the relationship between receipt of critical incident response services and wellness outcomes (Wills, 2018). Counseling services were perceived as effective across two studies (Jonker, Graupner, and Rossouw, 2020; Taylor-Gray, 2018). Results were mixed for debriefing; in a study of employees in high-risk professions, formal debriefing after traumatic incidents was perceived as insufficient (Jonker, Graupner, and Rossouw, 2020), though several participants in a study of EAP professionals viewed debriefing as effective (Taylor-Gray, 2018). Although Wills (2018) found that officers provided with more critical incident services had lower PTSD symptoms and stress levels, many postincident interventions were not associated with wellness outcomes.

There were only two evaluations of critical incident response programs (Boothroyd, Green, and Dougherty, 2018; Watson and Andrews, 2018). One of these programs involved participation in a retreat program that incorporated components of critical incident stress management, a multicomponent critical incident response program that includes critical incident stress debriefing (Boothroyd, Green, and Dougherty, 2018). The other critical incident response program evaluated involved peer-supported risk assessment and support following trauma (Watson and Andrews, 2018). These studies both observed beneficial program outcomes, including fewer perceived barriers to receiving help (Watson and Andrews, 2018), lower levels of PTSD symptoms (Watson and Andrews, 2018), and improved posttraumatic growth (Boothroyd, Green, and Dougherty, 2018).

Although some critical incident response programs were perceived as effective, most of these studies were limited by the fact that they only assessed participant perceptions, rather than evaluating single programs. Two evaluations of critical incident response programs observed beneficial outcomes, though these studies did not use rigorous experimental designs that would allow one to draw strong conclusions about program effectiveness.

Interview Findings

Several interviewees discussed programs that provide support following critical incidents or potentially traumatic events. An interviewee mentioned that in one component, psychologists, chaplains, and peers provides *postvention* support following critical incidents. Another interviewee discussed a response team, which responds to a variety of critical incidents and is made up of part-time volunteers. One interviewee discussed critical incident stress debriefing as part of the component's use-of-force policy. An interviewee mentioned several mechanisms through which clinician support is provided following traumatic incidents, stating, "[It c]ould be that [a] supervisor says we should bring [a] clinician in. [The program] coordinator could also say this. Or [a] clinician could get word of it and say it reaches [a] threshold where intervention is needed, or we provide encouragement to reach out."

Key Takeaways on Critical Incident Response Programs

There are several programs that DHS uses to support law enforcement and emergency first responders after a critical incident. These programs serve as *postvention* programs whose goal is to act as a first line of defense for individuals and to determine other necessary interventions. The literature review showed that perceptions of the effectiveness of these programs were mixed. Two evaluation studies found that these interventions had benefits for participants. However, these studies did not have methodologically rigorous designs, which precludes the possibility of reaching conclusions about their effectiveness.

In addition, there were relatively few reports about critical incident response programs for first responders published since 2013. The limited number of recent studies could be attributable to the fact that earlier studies found that debriefing can be ineffective or even harmful depending on how it is delivered (World Health Organization, 2012). Compulsory single-

TABLE 3.9

Summary of Critical Incident Response Program Studies

Author (year)	Program Name	Program Description	Findings
Boothroyd, Green, and Dougherty (2018)	Operation Restore	Brief posttrauma intervention for first responders	91.9% of participants experienced some degree of positive increase in their traumatic growth scores from preintervention to postintervention.
Calhoon (2020)	NA	Critical incident stress management program	74.7% of overall sample saw Critical Incident Stress Management programs as effective
Jonker, Graupner, and Rossouw (2020)	NA	Psychological trauma management program	Participants viewed multiple counseling sessions, face-to-face counseling, and receiving support as effective in managing trauma; formal debriefing after traumatic incidents viewed as insufficient
Taylor-Gray (2018)	NA	Critical incident response services	Critical incident response programs identified included one-on-one support, peer services, psychological first aid, mixed services, mental health services, chaplain services, intensive/residential programs, and debriefing; one-on-one services provided by a mental health professional reported as effective by five interviewees; debriefing, defusing, and psychological first aid perceived as effective by 2 or 3 participants
Watson and Andrews (2018)	Trauma risk management	Peer-support process to support employees after a critical incident	Those who received the intervention found that there were fewer perceived barriers to receiving help after a critical incident. In addition, those who received the intervention had lower levels of PTSD and fewer stigmatized views toward receiving help.
Wills (2018)	NA	Critical incident response services	Officers provided with more total critical incident services had lower PTSD symptoms and lower police operational and organizational stress. Total services not correlated with posttraumatic growth; psychological education, peer support, preincident preparation, and psychological first aid associated with at least one beneficial psychological outcome; professional intervention, family intervention, postevent individual intervention, and postevent group intervention not associated with beneficial outcomes

session debriefing, for example, was found to be ineffective in previous research (Rose et al., 2002). Our interviews did not provide details about the specific format and content of these programs, but DHS might consider reviewing current critical incident response programs, adapting programs as needed, and incorporating evaluation into existing programs to assess whether they are serving the intended purpose for DHS personnel.

Other Stress Reduction Programs

Literature Review Findings

Four studies investigated the use of other stress reduction programs and their potential effectiveness for first responder mental health and wellness (summarized in Table 3.10; more details in Appendix B). These programs included the use of support canines in the workplace (Binfet, Draper, and Green, 2020; Curley et al., 2021), breathing-based meditation (Iwakuma et al., 2017), and using neurotechnology to improve mental health in LEOs (Tegeler et al., 2020).

Tegeler et al. (2020) assessed a neurotechnology that involved playing tones for participants with the goal of teaching participants to optimize brain activity. This study observed significant reductions in symptoms of insomnia, depression, PTSD, perceived stress, and anxiety, in addition to improvements in quality of life (Tegeler et al., 2020). In addition, Binfet, Draper, and Green (2020) and Curley et al. (2021) found that there was a general positive attitude toward support canines for first responders and that support canines provided significant reductions in stress. Iwakuma et al. (2017) found that participants reported improvements in mood immediately following a breathing-based meditation class.

Overall, these studies found that other stress reduction programs were beneficial for first responders and LEOs. However, most of these studies had small samples ($n = 15-20$ for three of the four studies), and additional research is necessary to determine the efficacy of these programs. In addition, the sample population is not representative of the greater population, with the studies primarily focused on white men.

Interview Findings

Interviewees discussed several programs aimed at reducing stress. One interviewee discussed a DHS canine support program, stating, “Canines go to places where [a] traumatic incident has happened to provide support or to help people in general. Handlers are peer support team members, so everything is confidential, and they have training to refer people correctly.”

Several interviewees also discussed scheduling changes to either provide more time off for rest or provide time for wellness activities during the workday. One DHS program discussed provides paid rest time off, while another implemented a compressed work schedule to allow employees to take a day off every other Friday. Several interviewees discussed programs to provide time for wellness activities during the workday. A separate DHS program provides three hours per week for employees to participate in wellness activities. A new policy revision will provide three hours weekly for physical fitness and two hours weekly for mental health activities, such as meditation, mindfulness, yoga, and breathing.

Key Takeaways on Other Stress Reduction Program Studies

There are several alternative stress reduction programs that focus on holistic wellness and meditation that have been used by DHS components. The programs that DHS uses allow

TABLE 3.10
Summary of Other Stress Reduction Program Studies

Author (year)	Program Name	Program Description	Findings
Binfet, Draper, and Green (2020)	Canines and handlers from Building Academic Retention Through K9s program	Therapy dogs to assist LEOs who experienced trauma	Both officers and civic employees reported significant reductions in stress
Curley et al. (2021)	Support canines	Introducing support canines into first responder workplaces	No significant variations in psychological wellness or help-seeking attitudes; positive attitudes toward canines in general
Iwakuma et al. (2017)	Not Reported	Single-group breathing-based meditation seminar	Improvements in mood states (anger, confusion, depression, fatigue, strain, and vigor) from pretraining to immediately posttraining. Participants expressed desire to continue meditation in daily life.
Tegeler et al. (2020)	High-resolution, relational, resonance-based, electroencephalic mirroring	Noninvasive, closed-loop, allostatic, neurotechnology that echoes specific brain frequencies in real time to support self-optimization of brain rhythms	Significant improvements posttreatment for insomnia, depression, PTSD, perceived stress, anxiety, and quality of life

more rest time to be scheduled in the day to allow for employees to focus on mental health activities. One interviewee discussed a canine support program, and two studies focused on canine programs for first responders. Because existing research is currently limited, future research is needed that evaluates these programs for first responders with a focus on wellness outcomes, such as reduced stress and better mental health. There was one study of a single breathing-based meditation training that found short-term benefits for mood but did not assess long-term outcomes. Because this was a single, short-term study, DHS might wish to focus on mindfulness programs, which have been more frequently evaluated and shown to have benefits for first responders.

Suicide Prevention Training

Literature Review Findings

Although the programs discussed previously are designed to work with first responders on issues of PTSD, depression, anxiety, and overall mental and physical health, we found only four studies that met the eligibility criteria of suicide prevention trainings evaluated with law enforcement and first responders (summarized in Table 3.11; more details in Appen-

dix B). These programs were specifically designed to present information on suicide awareness, including warning signs and risk factors, and prevention efforts. Overall, this research found an increase in knowledge, attitudes, and confidence (Hofmann et al., 2021; Marzano et al., 2016). One study looked at trainings with psychologists, supervisors and union representatives and found a significant reduction in reported police suicides in Montreal (Mishara and Fortin, 2022).

Interview Findings

The interviewees discussed the issues of mental health and well-being, especially in their line of work. They discussed support from their peers, clinicians, and chaplains and such programs as resilience training, which are designed to provide help before thoughts of suicide. A few of the components specifically spoke of suicide prevention trainings, all unique in their delivery of information and resources used. One component has 60- to 90-minute mandatory suicide prevention training that has been specifically designed for law enforcement. Another component has been implementing a train-the-trainer suicide prevention program that uses safeTALK and Applied Suicide Intervention Skills Training (ASIST) curriculums, which are both evidence-based (Gould et al., 2013; Holmes et al., 2021). Other components provide suicide prevention information as part of training.

Key Takeaways on Suicide Prevention Training

Suicide prevention is a major concern across DHS, and multiple interviewees spoke of the goal of many of these wellness programs being to decrease suicides. Some of the components are working more rigorously to implement suicide prevention programs.

There is little research about the effectiveness of these programs with law enforcement specifically; however, it does appear that educational trainings aimed at increasing knowledge and awareness are beneficial. In addition, some outcomes, such as suicide rate, cannot be easily evaluated using a standard RCT because they are rare events that would likely require a large sample and extended time frame to detect. A next step should be to review the studies completed with non-law enforcement populations to ensure that evidence-based practices have been incorporated into DHS's existing suicide prevention programs and to begin the process of evaluating DHS suicide prevention programs.

Additional Interview Findings

Perceptions of Wellness Program Effectiveness

Certain programs, such as suicide prevention training, physical fitness programs, mindfulness training, and mandatory postvention efforts, were generally described as effective across components. In addition, most interviewees agreed that mental health stigma was slowly but surely declining, especially with the increase of younger professionals joining the workforce.

TABLE 3.11
Summary of Suicide Prevention Training Studies

Author (year)	Program Name	Program Description	Findings
Arensman et al. (2016)	Optimising Suicide Prevention Programmes	Training addresses symptoms, warning signs, and risk factors associated with depression and suicidal behavior, as well as help-seeking behavior.	Study found significant differences in exposure to suicidal persons and amount of training. Results found that training knowledge and confidence in all three countries.
Hofmann et al. (2021)	Coping with Suicide	Three modules covering the topics of delivering death notifications, dealing with individuals with suicidal ideation, and dealing with one's own distress and suicidal ideation in the police profession	Results indicated a significant increase in knowledge and perceived competence after training. Other measures, such as mental health and attitudes toward suicide, did not change significantly.
Marzano et al. (2016)	Not applicable	Training in suicide awareness and prevention	Results indicated that, after the training, suicide prevention attitudes, confidence, and knowledge were positive and improved significantly. Positive feedback on the course was collected.
Mishara and Fortin (2022)	Together for Life	Program included training with psychologists about suicide, training for supervisors and union representatives on how to identify a person at risk of suicide intention, a telephone helpline, and a publicity campaign	Significant reduction in numbers of reported police suicides in Montreal; Montreal significantly less than rest of Quebec

Many also noted the importance of employing innovative, evidence-informed strategies to support wellness across DHS.

One concern that was expressed several times was the perceived lack of culturally competent EAP counselors, which could potentially and substantially hinder the effectiveness of the service. In addition, the brevity of the counseling service appears to have also left the impression that the program is more ineffective than beneficial for employees.

Barriers to Wellness Program Use

Through our interviews, we also assessed some of the main barriers to wellness program use, some of which were unique to the law enforcement profession, such as the influence of a workplace culture that discourages help-seeking and fear of losing one's security clearance or approval to carry a firearm. As stated earlier, *cultural competency* (the need for the organization to be aware of, and responsive to, cultural perspectives and backgrounds) was also cited as a deterrent to seeking support or continuing to use counseling services through the EAP. Organizational barriers include a lack of resources to fund programs or on-site mental health clinicians and employees not feeling they have sufficient time (or have been allocated

the time from higher leadership) to seek out support, especially employees who have very demanding roles.

Other reasons, which are more common across many types of industries, are concerns about confidentiality, insufficient leadership support, and lack of awareness of the resources available to employees.

Automatic Triggers for Intervention or Evaluation

Interviewees were asked whether their office requires that the occurrence of certain events—such as a weapon discharge, surge operation, or death in the unit—acts as an automatic trigger to provide individuals with counseling or other interventions. Very few automatic triggers for intervention were identified during our interviews. One component has mandatory daily check-ins during deployments and training about how to refer peers to supervisors for wellness checks. Resources are often provided following a critical incident but are usually offered to groups of employees, rather than to individual employees. In addition, there are also reporting requirements for such incidents as criminal activity or sharing suicidal thoughts.

Conclusion

The literature review identified several promising wellness program types—such as mindfulness, psychotherapy, physical fitness programs, and group skills/knowledge training—and many of these types of programs were discussed by interviewees. However, the literature review did not identify studies that applied these programs specifically to the DHS context. Because programs included in the literature varied widely in their content and format, it is difficult to determine which program elements are associated with beneficial outcomes and the extent to which DHS wellness programs align with existing non-DHS programs evaluated in the literature.

Although a growing body of research has focused on wellness programs for law enforcement and first responders, many studies have methodological weaknesses, such as lacking a control group or having a small sample, making it difficult to draw conclusions about effectiveness. Although mindfulness programs are often standardized (many are adapted from the Mindfulness-Based Stress Reduction program), other types of programs, such as group skills and knowledge training, vary widely in their content and implementation. This makes comparison of research findings difficult and could pose challenges for agencies wishing to adopt the programs.

DHS has implemented a variety of wellness programs, many of which were also discussed in the literature review, such as mindfulness, physical fitness programs, and group resilience training. Peer support programs and EAPs were widely discussed by interviewees, but little research has evaluated the programs' effectiveness. Similarly, suicide prevention was identified as a strong priority by interviewees, but there have been few evaluations of suicide pre-

vention programs for LEOs. Psychotherapy was the most widely evaluated program in the literature review, with studies finding beneficial effects. Interviewees discussed short-term counseling programs, such as those administered by on-site clinicians, though there were challenges associated with implementing these programs in DHS, such as difficulty accessing remote work locations.

Barriers to program use, including a culture discouraging help-seeking, continue to be viewed as problematic, but some interviewees believed that stigma around mental health was declining among the younger members of the workforce. Although many interviewees acknowledged the importance of evidence-based practice, they noted the need to adapt programs to meet the unique needs of the DHS workforce. Although the literature review identified promising program areas, such as mindfulness, psychotherapy, physical fitness programs, and group skills/knowledge training, we did not identify studies that applied these programs specifically to the DHS context. Therefore, evaluation studies are needed for wellness programs specifically tailored to DHS components.

Evaluability Assessment

This chapter presents what we learned from the programs about their readiness to be evaluated. Using the information collected from July–September 2023, we conducted an initial EA for several of the programs we discussed during the interviews. These were agreed on by the sponsor to explore further. Dunn (2008, as cited in Davies, 2013), suggests using the following questions to drive the investigation of an EA:

1. **Is it plausible to expect impacts?** Do stakeholders share a clear understanding of how the program operates, and are there logical links from program activities to intended impacts?
2. **Is it feasible to measure impacts?** Is it possible to measure the intended impacts, given the resources available for the impact assessment and the program implementation strategy?
3. **Would an impact assessment be useful?** Are there specific needs that the impact assessment would satisfy, and can it be designed to meet those needs?

Information gathered as described above was synthesized using a modified PIER tool, structured to follow the interview guide. We modified this tool to capture the constructs unique to the DHS context. Table 4.1 describes the overarching criteria and description of each of the tool's domains.

Findings

As Tables 4.2 and 4.3 indicate, one program met five of the six evaluability criteria assessed; each of the other programs met only one or two criteria. Generally speaking, program staff were interested in evaluation and were supportive of evidence-based practices. Interviewees stated that some programs had more leadership support than others, which was also reflected in the resources currently dedicated to them. Another criterion we used to assess readiness is program implementation, which has to do with how the program is structured (who is leading the program, whether there is a process in place to document and track program implementation, etc.). All programs, with the exception of one, had either too much variation in them or did not currently track (or were not able to track) participation status or retention. Programs also did not have evaluation designs, but that was to be expected considering the

TABLE 4.1
Criteria and Descriptions of Evaluability Assessment Domains

Domain	Definition
Organizational Culture and Capacity	Organizational support, organizational maturity, and stable staff history
Leadership Readiness	Leadership support and commitment to evidence-informed practice
Program Staff Readiness	Program staff experienced or willing to learn about implementing intervention and committed to evidence-informed practice
Program Design and Implementation	Intervention clearly defined and appropriate for target population; plan to track and document program implementation; lead person for program and intervention; training plan
Research Design	Program participation requirements and recruitment; plan for comparison group in evaluation design
Data Collection	Stakeholder agreement on data collection; defined evaluation processes and procedures; defined outcome measure

SOURCE: Modified from the PIER tool.

TABLE 4.2
Summary of Programs, by Criterion

Criterion	Program 1	Program 2	Program 3	Program 4	Program 5
Organizational Culture and Capacity	Y	N	Y	U	N
Leadership Readiness	U	U	Y	N	Y
Program Staff Readiness	Y	Y	Y	Y	U
Program Design and Implementation	N	N	Y	U	N
Research Design	N	U	N	N	U
Data Collection	N	U	Y	N	N

NOTE: Y = yes; N = no; U = unknown.

known limitations of program staff and resource allocations. There was only one program with defined outcome measures and a process for data collection.

Program Highlight: U.S. Customs and Border Protection Suicide Prevention Training

In this section, we highlight the program that is most ready to be evaluated, the CBP suicide prevention program (Program 3 in Table 4.2). Although the program presents strongly in

TABLE 4.3
Summary of Criteria, by Program

Criterion	Number of Programs Present	Example	Number of Programs Absent	Example
Organizational Culture and Capacity	2	<ul style="list-style-type: none"> • Program in place for several years • Program stability 	2	<ul style="list-style-type: none"> • Insufficient resources
Leadership Readiness	2	<ul style="list-style-type: none"> • Senior leadership support 	1	<ul style="list-style-type: none"> • Lack of management/ leadership support
Program Staff Readiness	4	<ul style="list-style-type: none"> • Staff focused on evidence-based research and use of data • Train-the-trainer program established 	0	<ul style="list-style-type: none"> • NA
Program Design and Implementation	1	<ul style="list-style-type: none"> • Regularly updated program participation reports • Program tailored for law enforcement culture 	3	<ul style="list-style-type: none"> • Lack of program standardization • Inability to track participants across entire course of program participation • Only one or two staff members with limited additional capacity for evaluation
Research Design	0	<ul style="list-style-type: none"> • NA 	3	<ul style="list-style-type: none"> • Lack of plan for research design • No control group identified
Data Collection	1	<ul style="list-style-type: none"> • Defined outcome measures • Process for data collection 	3	<ul style="list-style-type: none"> • Data on outcomes not collected • Data not collected for evaluation purposes; might not be available for evaluation • Inability to collect long-term data

NOTE: This table summarizes information that was captured during the interviews. For some programs, it was not possible to determine whether a criterion was present or absent, because of the semistructured format of the interviews.

some of the domains, there are several key areas that need improvement before an evaluation is possible.

Program Design and Implementation

The CBP suicide prevention program has a strong, well implemented program design. The program consists of a 60- to 90-minute in-person, mandatory training. The program focuses on destigmatizing suicide, recognizing the warning signs, and reviews the options that are

available when a participant or someone they know needs help. There is a list that is drawn both daily and weekly showing which employees have yet to be trained. Program staff also have access to a dashboard that displays relevant information, such as the number of suicides in CBP to date, how that figure compares with that of the general population, and the attributes of CBP employees who have died by suicide.

The foundation of the content comes from the U.S. Department of Health and Human Services, but it was built to make it relevant to law enforcement. This program is different from the previous online training program, which was used for two to three decades. The course aims to teach employees how to understand suicide at a deeper level, rather than give them a checklist of things to do, with the hopes that if they truly understand it, they can help make an impact.

This program uses a train-the-trainer model. At first, it was predominantly peer support counselors and chaplains that were trained, but it has grown to include supervisors and those with lived experience. There are 350 trainers, and their job is to either deliver the course or train instructors.

At the time of our interview in September 2023, 68 percent of the workforce had been trained (44,000 total, including 900 instructors and 350 trainers). With that said, a new curriculum was scheduled to be implemented in January 2024 that has been modified based on the gaps found over the past several years.

Organization Culture and Capacity

According to our interview, the program appears to have a supportive organizational culture and capacity and has received \$26 million from Congress. There have been 72 town halls with senior DHS leaders out in the field talking about this issue. It is important to expose the entire CBP workforce to prevention and outreach information. The development of the current suicide prevention program started in 2021, and an updated version was scheduled to be implemented in January 2023.

Leadership Readiness

Through our interviews, it appears that CBP senior leaders are actively talking about this issue and working with other senior leaders on the implementation of solutions. This indicates that leaders at multiple levels are prioritizing this suicide prevention program.

Program Staff Readiness

In early 2021, DHS hired a suicidologist, who was a driving force in the implementation of this program. In terms of program staff, instructors are volunteers, and each instructor is empowered to coordinate training for employees in their region. Trainers have access to the list of employees who have not been trained and coordinate with them to set up a training.

Research Design

To develop a rigorous research design, several aspects of the program would need to be refined. Establishing a control group is difficult because the program is mandatory for all employees. According to one interviewee, outcomes of interests are “saves” and “deaths,” which are inherently difficult to measure. As stated by the interviewee, “In terms of metrics, we don’t expect to ever see zero [suicides] because there’s never been a time in history where people have gone to zero and stayed at zero. If we can get to [an] 80 percent [reduction], I’d get more resources for R&D [research and development] for how to get the other 20 percent.” Determining how to best measure the success of the program would be necessary for an evaluation to take place. Other outcomes of interest that pose methodological issues are shifts in the culture and staff investment.

Data Collection

At this stage, only limited data are currently collected. A pre–post survey has been implemented on participants’ comfort and confidence level in their ability to help people in distress or crisis. However, most of the time, this is determined by asking participants to rate their comfort level on a scale of 1 to 10 on sticky notes and raising them for the facilitator to view, rather than capturing the information through a formal data-collection process. Some suicide prevention trainings take place at the CBP Advanced Training Center in Harpers Ferry, West Virginia. Each attendee of this training completes a survey through SurveyMonkey on their confidence level following the trainings; more than 500 responses have been collected to date.

Evaluability Assessment Conclusions

The interviewees discussed the importance of evidence-based practice and data-driven decisionmaking. However, many also recognized that the wellness programs discussed were not ready to be evaluated. Barriers included lack of time or resources and insufficient support from leadership. In addition, programs typically did not have existing data-collection efforts or had limitations in the ability to access data for research.

Of the programs included in the EA, the CBP suicide prevention program seemed most ready for evaluation. The program has strong leadership support, an established and extensive program for training trainers, a leader overseeing the program who is committed to the program and evidence-based practice, and a system for tracking program participation and posttraining survey responses. However, defining outcome measures as they relate to suicide reduction poses challenges that are not specific to this program. In addition, there is not currently a comprehensive effort to collect data on program participants’ perceptions posttraining. Overall, this program seems well positioned to complete a thorough process evaluation, but it remains to be seen whether an outcome evaluation is feasible.

Conclusion

This final chapter of this report summarizes the key findings from the literature review and interviews conducted during the project, with six sections that include an overview of the evidence of programs, limitations to the existing research, DHS-specific challenges, DHS-related needs, barriers to seeking help, the current state of DHS wellness implementation, and results from the EA. This chapter also provides recommendations to DHS for future research and a description of the limitations of the project.

Key Findings

Evidence on Programs

The literature review found that several types of programs had beneficial effects on wellness outcomes, though many studies reviewed did not use rigorous methods (such as random assignment to treatment and control groups, which reduces the possibility of selection effects). In addition, in each program type, programs varied in content and delivery. This makes it difficult to draw conclusions about program effectiveness and to determine whether the DHS programs discussed by interviewees were consistent with effective practices in the literature. Despite these limitations, key findings for each of the programs are summarized below:

- **Mindfulness programs** were found to have beneficial effects in the literature review. Although many were not methodologically strong, several evaluations used RCTs. Interviewees also viewed mindfulness programs as promising, and several mindfulness efforts in DHS were discussed.
- **Scenario-based stress response training** was evaluated in the literature but was not discussed in the interviews. Support for these programs was mixed, and there were few rigorous evaluations.
- **Psychotherapy** was found to be effective based on the literature review. Incorporating CBT as a treatment approach was effective for reducing symptoms of PTSD and other mental health symptoms for law enforcement professionals. Short-term, intensive, residential programs and group psychotherapy also appeared to benefit this population. Other treatment techniques, such as EMDR, showed some potential as well. Although psychotherapy is well researched, DHS is not necessarily in a position to offer long-

term psychotherapy. Interviewees discussed short-term clinical programs or clinicians offered through EAP or after critical incidents, but these were not available long term.

- **Group prevention skills and knowledge training** programs were often found to be effective in the literature, but most studies were not methodologically strong. In addition, the comparability of studies was limited because of the wide variation in training content and delivery. We found support for these programs in the interviews, but DHS implementation of evidence-based programs might be hampered by the limitations of current empirical studies.
- **Physical fitness and physical health programs** were generally found to be effective, but conclusions are limited by methodological limitations. Physical health programs were discussed by interviewees, though program content did not necessarily closely align with that of the programs in the literature review.
- **Mobile health applications** were evaluated in few studies of law enforcement or first responders, though there was some evidence of the efficacy of mindfulness apps. Apps were not widely discussed by interviewees, though at least one component purchased a Headspace mindfulness app, the efficacy of which was supported in the literature review.
- **Peer support, mentoring, and chaplain programs** were not widely discussed in the literature. Although the limited existing research points to some positive benefits, there was only one RCT, which evaluated a mentoring program. Despite the limited research, peer-support programs, including chaplain programs, have been strongly emphasized by DHS.
- **Critical incident response programs** were discussed by interviewees, but very little recent literature examined these programs. In addition to methodological limitations of studies assessing critical incident programs, these programs can vary widely in their content, making it difficult to draw generalizations about their effectiveness. It should also be noted that earlier studies generally led to the conclusion that critical incident stress debriefing can be ineffective or even harmful depending on how it is delivered (World Health Organization, 2012). Our interviews did not provide details about the specific format and content of these programs, but DHS might consider reviewing current critical incident programs and, if used, evaluating the use of compulsory single-session debriefing, which has been shown to be ineffective (Rose et al., 2002).
- **Other stress reduction programs** were evaluated in the literature review, such as canine support programs, which were also discussed in the interviews. There was some support for the benefits of these programs, though studies were not methodologically strong. Interviewees also discussed other programs, such as scheduling changes that allow for more rest and wellness time.
- **Suicide prevention trainings** were generally described as effective by interviewees, but there were few studies identified in the literature review. Suicide prevention is a major concern across DHS. Although some studies found beneficial effects, there were few suicide prevention training studies identified in the literature review. The lack of studies

limits the conclusions that can be drawn about the benefits of these programs for first responders.

Limitations to Research Published Since 2015

More new research on the impact of these programs on law enforcement personnel is needed with larger samples, rigorous designs, and outcomes other than knowledge change (such as mental health and wellness outcomes). Although our literature review findings, which were limited to publications released between 2015 and 2023, were generally promising, methodological weaknesses limit the conclusions that can be drawn. The comparability and generalizability of the studies are limited because of the use of different outcome measures, evaluation designs that are less rigorous because they are secondary to the overall training goals of the program, and low participation and response rates.

Although we were able to review evaluations of mental health and wellness programs, all were conducted with first responder personnel because of our search criteria. There is additional literature with other populations that needs to be reviewed and that might provide additional insights into workplace wellness programs.

U.S. Department of Homeland Security–Related Research Needs and Challenges

Interviewees expressed concern about the use of programs that have not been previously evaluated. Some recommended adopting robust, evidence-informed, non-DHS programs and adapting them for the DHS population, with the understanding that DHS poses unique challenges. When DHS considers implementing wellness programs, even those that have demonstrated efficacy among voluntary samples in the literature, it will be important to develop strategies to ensure that employees are interested and able to access programs, particularly those that are not mandatory. We also heard concerns about the size of the agency and its ability to tailor interventions by component. Last, there are logistical challenges related to ensuring participant confidentiality. In addition, the need to obtain labor union support for research involving DHS employees was raised as a concern.

Stigma and Barriers to Seeking Help

Some interviewees agreed that mental health stigma was slowly but surely declining, especially with the increase of younger professionals joining the workforce. Nonetheless, interviews identified barriers to wellness program use, some of which were unique to the law enforcement profession, such as the influence of a workplace culture that discourages help-seeking and fear of losing one's security clearance or approval to carry a firearm. Insufficient understanding of law enforcement culture was also cited as a deterrent to seeking support or continuing to use counseling services through the EAP. Organizational barriers include

a lack of resources to fund programs or on-site mental health clinicians, and employees not feeling they have sufficient time (or have been allocated the time from higher leadership) to seek out support, especially employees who have very demanding roles. In addition, many DHS employees operate in remote environments that make it more difficult to provide on-site wellness resources. Other concerns, which are more common across many types of industries, include confidentiality, insufficient leadership support, and lack of awareness of the resources available to employees.

Current State of DHS Wellness Implementation

It is clear from the DHS strategic plan's focus on championing the DHS workforce that the mental health and overall well-being of DHS personnel is a priority. This importance was echoed by interviewees. As components work to design and strengthen their existing programs, they should look to and learn from the programs that already exist across DHS.

Results from the Evaluability Assessment

The EA showed that four of the five programs met only one or two of the evaluation readiness criteria. Challenges included lack of time, resources, and leadership support. In addition, programs did not have existing data-collection efforts or access to data for research. The CBP suicide prevention program was most ready for evaluation, meeting five of the six criteria assessed. This program had evidence of a strong program design, leadership support, program staff readiness, and limited data collection. We were able to focus on only five programs in the EA, though there are many more programs in DHS.

Recommendations for Future Research

Building on a recommendation made in Farmer, Whipkey, and Chamberlin (2019), sponsored by the Office of the Chief Human Capital Officer, future research and evaluation remain top priorities as DHS continues its work implementing health and wellness programs.

Why Conduct Research?

Conducting research takes resources, time, and commitment. Research is critical to agencies as they attempt to improve and strengthen programs and ensure the most effective use of limited resources. Conducting research allows programs to consider and develop criteria to assess program effectiveness, develop appropriate data-collection capabilities, and consider external evaluations of programs. Research and evaluation often fail because criteria or data-collection capabilities are not considered, and no formal program design or model is in place. It is important to note that a program as designed can be different from the program as

implemented. Thus, simply implementing an evidence-based program without considering the population, organization, data capabilities, and buy-in might prove not to be beneficial.

Initial Considerations

As stated previously, programs need to determine the outcomes of interest. Also, they need to ask, what does the research say about the effectiveness of similar program models? This paper serves as a foundation for that understanding. With the understanding that DHS might have a unique population, researchers can help practitioners plan, implement, and evaluate their programs to achieve results. This includes thinking about needs and resources, goals, evidence-based practices, fit, capacity, plan, implementation, outcome evaluation, continuous quality improvement, and sustainability (Chinman et al., 2001).

Having initial discussions to clarify the purpose, scope, and who the important stakeholders are can help prevent wasting resources on premature or misfocused research and inform judgments about the worth and usefulness of a potential evaluation. The second step is to determine if and what adjustments to program design, implementation, and measures/data systems are needed to support a more useful evaluation. Bringing in relevant stakeholders to build consensus about the program and its evaluation is also critical. Another critical step is to formalize an agreement between the evaluators and the program office about what is most important in the program, anticipated problems with evaluation, and what is needed for successful evaluation.

Initial Research Questions and Measurement

We combined the results of the literature review and the expert interviews to create a preliminary list of high-priority research questions. We identified research needs from the literature and many operationally relevant needs from the expert interviews. Choosing to do future research acknowledges that there is a need for foundational knowledge on this topic and that research funding is critical, as are appropriate research designs that necessitate adequate data and methods. High priority research questions focus on the effectiveness of existing programs, program needs and gaps, barriers to program use, and supporting programs for evaluation readiness. Across this research, common challenges included limited ongoing data-collection efforts; ensuring participant confidentiality; obtaining data access; and the need for participant, union, and leadership buy-in.

Table 5.1 presents these research questions, potential study designs, and methodological challenges.

Measurement

As discussed previously, after identifying research questions and establishing group consensus on outcomes of interest, researchers should then identify measures of those outcomes. Many outcomes, such as stress, depressive symptoms, physical health, and burnout, were shared across the different types of wellness programs included in the literature review.

TABLE 5.1
Research Questions

Example Research Question	Potential Study Designs	Challenges
What programs are most effective?	<ul style="list-style-type: none"> • Outcome evaluation • Impact evaluation 	<ul style="list-style-type: none"> • Comparison group • Participant buy-in • Union and leadership support • Lack of ongoing data-collection efforts • Ensuring participant confidentiality • Need for data standardization • Data access
What evidence-based programs can be implemented in DHS, and how can evidence-based practices be incorporated into programs that are already implemented?	<ul style="list-style-type: none"> • Interviews • Focus groups 	<ul style="list-style-type: none"> • Participant buy-in • Union and leadership support • Ensuring participant confidentiality
What are barriers to program access and seeking help among DHS employees?	<ul style="list-style-type: none"> • Interviews • Focus groups • Surveys 	<ul style="list-style-type: none"> • Participant buy-in • Union and leadership support • Ensuring participant confidentiality • Participant time constraints
What are the perceived needs and gaps in service for DHS employees?	<ul style="list-style-type: none"> • Interviews • Focus groups • Surveys • Policy review 	<ul style="list-style-type: none"> • Union and leadership support • Ensuring participant confidentiality • Participant buy-in • Participant time constraints • Data access
How can existing DHS wellness programs be improved to better meet the needs of DHS employees?	<ul style="list-style-type: none"> • Interviews • Focus groups • Surveys • Policy review 	<ul style="list-style-type: none"> • Participant buy-in • Union and leadership support • Ensuring participant confidentiality • Participant time constraints • Data access
How can DHS wellness programs be supported to be ready for evaluation?	<ul style="list-style-type: none"> • Formative evaluation • EA • Interviews • Focus groups 	<ul style="list-style-type: none"> • Union and leadership support • Ensuring participant confidentiality • Participant buy-in • Participant time constraints • Lack of ongoing data-collection efforts • Need for data standardization • Data access

Short, validated, self-reported measures are available for each of these outcomes, which could be included in a wellness program evaluation.

For example, stress is often measured using the Perceived Stress Scale 10, which is a well-established measure assessing perceived stressfulness of life situations (Cohen and Williamson, 1988). Similarly, depressive symptoms could be measured using the Center for Epidemiological Studies Depression Scale, which is a well-established, self-reported questionnaire used to assess depressive symptoms in the general population, rather than to screen for a disorder (Radloff, 1977). The Centers for Disease Control and Prevention Health Related Quality of Life-14 is a widely used measure of overall health and health impacts on quality of life. It has the advantage of being self-reported by the respondent rather than requiring access to medi-

cal records. Several self-reported burnout measures are also available, including the Maslach Burnout Inventory—General Survey, which includes Exhaustion, Cynicism, and Professional Efficacy subscales (Maslach, Jackson, and Leiter, 2018), and the Oldenburg Burnout Inventory, which includes Exhaustion and Disengagement subscales (Demerouti et al., 2001). The choice of measure will depend on the goals of the research, anticipated outcomes, and practical considerations related to the research context (e.g., time available for respondents to answer questionnaires).

Limitations

A few limitations in this research need to be discussed. Our search terms for the literature review identified types of programs and populations to review, and might not have captured all relevant organizational practices (e.g., scheduling) or similar programs focused on non-law enforcement populations. Extensive discussion of organization practices, such as scheduling and other administrative issues, were beyond the scope of this review. However, future research should examine the effect of organizational practices on law enforcement wellness. Future research is needed to investigate this issue. An additional limitation of the literature review was that it was limited to research published from 2015 to 2023. Although this has the advantage of focusing on the most up-to-date findings, the literature review should not be viewed as representative of earlier literature.

In the expert interviews, we spoke with only 18 interviewees, so we might not have a comprehensive picture of wellness resources available. For the EA, we spoke with only six interviewees (representing five programs), and interviewees might not all be familiar with the research process. Therefore, this was not a comprehensive picture of wellness resources available. Last, the consent language used in the interviews limits the ability to name programs.

Conclusions

Law enforcement and first responders face serious health and wellness challenges, both in the daily course of their work and through their exposure to potentially traumatic critical incidents. A wide variety of wellness programs have been implemented across DHS, including on-site clinicians, resilience training, suicide training, physical fitness programs, mindfulness programs, peer support, and EAPs. These programs aim to address the multifaceted wellness needs of DHS personnel. Although evidence-based practice is a priority of many DHS wellness staff, barriers to program evaluation mean that few programs are currently ready for evaluation. Nonetheless, steps could be taken (such as developing logic models, identifying metrics, and collecting outcome data) that could increase their readiness for an outcome evaluation. Existing research on first responder wellness programs has found support for the effectiveness of certain programs. Although lack of program standardization could make it challenging for DHS to adopt existing programs, DHS could consider focusing

on program areas that have strongest research support, such as psychotherapy, mindfulness, physical fitness programs, and group skills and knowledge training. Future research priorities identified in this report could also help DHS develop an ongoing research agenda with the potential to improve existing wellness programs and identify where needs are still unmet, ultimately leading to better organizational and wellness outcomes.

Systematic Review Search Strategy

For this literature review, we looked systematically at what we know about mental health and wellness research. The literature review followed a systematic search strategy developed and piloted in consultation with a RAND librarian. The strategy incorporated a series of search strings designed to query repositories of both academic and gray literature for recent (published since 2015) publications about mental health and wellness research.

Databases Searched—Complex Search Strategies

- Academic Search Complete
- Business Source Complete
- Criminal Justice Abstracts
- Foreign Legal
- HeinOnline Law Journal Library
- Index to Foreign Legal Periodicals
- National Criminal Justice Reference Services (EBSCO)
- PAIS Index
- Policy File Index
- Scopus
- Social Science Abstracts
- Sociological Abstracts
- Web of Science.

Databases Searched—Simple Search Strategies

- Google Scholar
- OAIster
- advanced Google searches targeting relevant websites
- World Bank
- Organisation for Economic Co-operation and Development
- Polaris.

Search Terms

We used the following search terms:

(“DHS Federal Law Enforcement” OR “Southern Border Patrol” OR “Homeland Security Investigations” OR “TSA Federal Air Marshalls” OR “Child Exploitation Unit Personnel” OR “Leadership within Federal Law Enforcement” OR “Adjudication Officers” OR “Non-DHS Federal Law Enforcement” OR “State law enforcement” OR “Local Law Enforcement” OR “Tribal Law Enforcement” OR Campus Law Enforcement”)

AND (“mental health” OR “mental Hygiene” OR itigat* OR substance* OR morale OR “work-related stress” OR “job retention” OR “work satisfaction” OR Well-being OR depressi* OR Anxi* OR PTSD OR “post-traumatic stress disorder” OR prevent* OR Neuros* OR Community OR “coping mechanisms” OR Crisis OR “holistic care” OR “mental illness” OR trauma OR “vicarious trauma”)

AND (gap OR miss* OR know* OR need OR itigat*) AND (evidence OR data OR information OR proof OR knowledge)

AND (reduc* OR avoid* OR prevent* OR itigate* OR address* OR tackl* OR resolv* OR investigat* OR minimiz* OR punish* OR prosecut* OR remed* OR restor*) AND (policy OR program* OR interven* OR practice OR initiative)

AND (policy OR program* OR interven* OR practice OR initiative).

Additional Details About the Studies Included in the Systematic Review

Key details of the reports and evaluations of programs found during the literature search are presented in the main text. Tables B.1. through B.10. contain additional details on each study, such as information on the sample, program duration, and method.

TABLE B.1
Detailed Descriptions of Mindfulness Program Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Bergman, Christopher, and Bowen (2016); Christopher et al. (2016) ^a	United States	Police officers	43	64% male	8 weeks (weekly classes)	Within-individual changes with three baseline and two follow-up assessments, no control group
Christopher et al. (2018)	United States	Full-time sworn LEOs with no prior exposure to a mindfulness course recruited from law enforcement agencies in the Pacific Northwest	61	90% male, 10% female	8 weekly 2-hour sessions (with one 6-hour session)	RCT with outcomes measured at baseline, posttraining, and three months posttraining
Denkova et al. (2020)	United States	Firefighters from Miami-Dade Fire Rescue Department	121	81% male, 19% female	4 weekly 2-hour sessions	Participants assigned by work shift to mindfulness training group, relaxation training group, or no-training control group. Outcomes measured pretraining and posttraining.
Giovannoni et al. (2015)	United States	Parole officers	28	16 female, 12 males	Six-hour training; 30 days of program-related reinforcement emails	Quantitative and qualitative; paired-sample repeated measure design
Grupe, McGehee, et al. (2021)	United States	Sworn LEOs from Dane County, Wisconsin Sheriff's Office, Madison Police Department, and University of Wisconsin–Madison Police Department	114	60% male, 40% female	8 weekly 2-hour sessions (with one 4-hour session)	RCT with assessments pretraining, posttraining, and at three-month follow-up
Grupe, Stoller, et al. (2021)	United States	Sworn noncommand LEOs from Madison Police Department	30	53% female, 47% male	8 weekly 2-hour sessions (with one 4-hour session)	Within-individual changes across three time points up to five months, no control group

Table B.1—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Joyce et al. (2019)	Australia	Firefighters	143	96% male, 4% female	6 self-paced online training exercises (20 to 25 minutes each) over the course of 3.5 weeks	Clustered RCT with outcomes measured at baseline, 6 weeks, and 6 months
Kaplan et al. (2017) ^a	United States	LEOs and firefighters from Pacific Northwest	69	Law enforcement sample: 57% male; Firefighter sample: 73% male	8 weekly 2-hour sessions (with one 6-hour session)	Outcomes measured pretraining and posttraining. Mediation analyses. No control group.
Krick and Felfe (2020)	Germany	Police officers	267	78.7% male	6 weekly 2-hour sessions	RCT with outcomes measured pre–post intervention
Lilly et al. (2019)	United States and Canada	9-1-1 emergency medical dispatchers	323	81.9% female	7 weeks of 20- to 30-minute online modules	RCT with outcomes measured at baseline, postintervention, and three-month follow-up
Navarrete et al. (2022)	Spain	National and municipal police officers from Valencia, Spain	38	61% male, 39% female	8 weekly 2-hour sessions	Nonrandomized trial with experimental group and wait-listed control group

^a Kaplan et al. (2017) includes the same LEO sample as Bergman, Christopher, and Bowen (2016) and Christopher et al. (2016), in addition to an independent firefighter sample.

TABLE B.2

Detailed Descriptions of Scenario-Based Stress Response Training Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Andersen et al. (2015)	Finland	Regional Special Response Teams officers	18	100% male	5-day program with 60-minute sessions each day	Heart rate and autonomic nervous system coherence measured across five days of training. Group focus group feedback session
Andersen and Gustafsberg (2016)	Finland	Federal Special Response Teams officers	12	100% male	3 days	RCT with pretest and posttest measurements
Arble et al. (2017)	United States	New police officers from the Detroit Police Academy	32	78% male	Five 90-minute sessions over a one-week period	Assessment of within-individual changes with one-year follow-up
Ford (2019)	United States	Police officers who experienced a critical incident from Aurora, Colorado, Police Department and El Paso County, Colorado, Sheriff's Department	85	89% male, 11% female	Not Applicable	Survey-based on self-reported completion or stress inoculation prior to experiencing a critical incident
Ramey et al. (2016)	Not Reported	Police officers	38	76% male	3.5 months (one educational class, one mentoring session, and three months practice in field)	Outcomes measured at baseline, three months, and six months with control group comparisons
Ramey et al. (2017)	United States	Police recruits from the police academy for the Milwaukee Police Department	34	82% male	2-hour educational class with four mentoring sessions 2–3 weeks apart	RCT with follow-up 3–4 weeks after final mentoring session
van der Meulen et al. (2018)	Netherlands	Police officers	305	73.9% male, 26.1% female	4 days	Control group without random assignment. Pretraining assessment and two follow-ups

TABLE B.3
Detailed Descriptions of Physical Fitness and Physical Health Studies

Author (year)	Country	Sample	<i>N</i>	Sex	Program Duration	Method
Chu, Lau, and Mak (2022)	Hong Kong	Police officers	18	Not Reported	6 weekly sessions. Each session lasted for 2.5 hours	RCT with assessments at baseline and 1-week postintervention
Fischetti et al. (2019)	United States	Police officers	20	Male	8 weeks	Pre-post surveys
James, Samuels, and Vincent (2018)	Canada	Canadian National Police Force	61	Not Reported	4-hour session	Pre- and posttraining survey
Kuehl et al. (2016)	United States	Law enforcement personnel	408	Not Reported	12 30-minute, team-based, scripted, peer-led sessions	Survey at four time points and group interviews
Maran, Zedda, and Varetto (2018)	Italy	Police officers	105	34% male	Varied	Quasi-experimental. Pre-post with no control group
McKeon et al. (2021)	Australia, New Zealand	First responders and their self-nominated support partners	24	54% female	10-week	Quasi-experimental. Pre-post comparisons (outcomes measured at baseline, 6 weeks, and 12 weeks)
Rosenbaum et al. (2022)	Australia	New South Wales police officers experiencing PTSD or a psychological injury	60	Not Reported	12-week individualized exercise intervention (twice weekly)	Surveys at baseline, week 6 and week 12
Singh et al. (2021)	India	Female recruits	200	100% female	8 weeks	Pre- and posttest experimental group design

TABLE B.4
Detailed Descriptions of Peer Support, Mentoring, and Chaplain Program Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Gill, Roulet, and Kerridge (2018)	England	Police officers	56	Not Reported	Unclear	Mixed-method study; RCT (mentor-mentee pairs randomly assigned to participate in program or control group) with quantitative outcomes measured at baseline, four months, and eight months; qualitative interviews
Hale (2020)	United States	Police officers	99	Not Reported	Not Applicable	Survey
Katzman et al. (2021)	United States	Rural first responders (firefighters, paramedics, dispatch, and law enforcement)	2,222	Not Reported	Unclear	Postsession evaluations and focus groups
Milliard (2020)	United States	Police officers with lived trauma and/or mental health issues	9	Not Reported	Not Applicable	Interviews

TABLE B.5
Detailed Descriptions of Mobile Health Application Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Anderson (2021)	United States	LEOs	13	Not reported	Not reported	Survey design to assess perceived helpfulness and satisfaction with the app
Fitzhugh et al. (2019)	UK	Police officers and volunteers at five police forces (Avon and Somerset, Bedfordshire, Cambridgeshire, Hertfordshire, and South Wales)	1,337	65% female, 35% male	24 weeks (8 weeks of content for MindFit Cop)	RCT with assignment to one of three groups: Headspace app, MindFit Cop, or wait-list control with self-reported outcomes collected at baseline, 10 weeks, and 24 months. Interview data collected from 29 participants. Sickness absence data collected from human resources.
Heyen et al. (2021)	Switzerland	First responders, consisting mostly of ambulance workers and firefighters	42	18 (43%) females, 24 (57%) males	15 weeks	Data were collected on activity/use of app, along with survey feedback
Obuobi-Donkor et al. (2023)	Canada	Public safety personnel, including emergency department health workers, paramedics, firefighters, and police/law enforcement agents	18	31 males (38.3%), 47 females (58%), 3 other (3.7%)	Six months	Participants received daily SMS text messages and completed questionnaires to assess depression, anxiety, PTSD, and resilience symptoms at baseline, six weeks, three months, and six months after enrollment
Stern (2019)	United States	Police recruits and active-duty officers, detectives, and sergeants from various police departments	30	27 males, 3 females	In-person three-hour mindfulness training, followed by downloading and using the Advanced Law Enforcement Resilience Training (ALERT) app for up to three months	Mindfulness training was mandatory; participants then voluntarily engaged with the mobile app afterward (no control group)

TABLE B.6
Detailed Descriptions of Psychotherapy Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Alghamdi, Hunt, and Thomas (2015)	Saudi Arabia	Firefighters	34	100% male	Three weeks in outpatient setting	RCT (wait-listed control group received same intervention 3 weeks later)
Beaumont et al. (2016)	England	Fire services personnel	17	12 males, 5 females	Up to 12 weeks in outpatient setting	2x2 mixed-group design with repeated measures, pretest/posttest design (not randomized)
Biggs, Tehrani, and Billings (2021)	UK	Police	162	51% male, 49% female	Support services offered were delivered in 6–8 outpatient sessions, each 60–90 minutes in length	Used clinical data from the Trauma Support Service to assess the effectiveness of the service for police with complex PTSD
Bond (2017)	United States	Police officers	93	Not provided	Six days in residential setting	Pretest/posttest comparison, within-subject, single-group design using archival data (no control group)
Boshoff, Strydom, and Botha (2017)	South Africa	Police officers	28	20 males, 8 females	The outpatient program was presented over a period of 12 weeks, for a total duration of 18 hours	Pretest/posttest comparison and mixed-methods approach, involving an experimental group (psychosocial therapeutic program intervention) and a comparison group (no treatment); not randomized
Brucia (2018)	United States	Police officers	192	158 (82%) males, 34 (18%) females	Six days in residential setting	Quasi-experimental pretest/posttest design with outcomes measured through self-report at baseline, posttreatment, and 30-day follow-up (no control group)
Bryant et al. (2019)	Australia	Police officers, firefighters, and paramedics	100	77 males, 23 females	12 weeks in outpatient setting	RCT (three groups: immediate CBT—prolonged exposure to trauma memories, CBT-brief exposure to trauma memories, or wait-list, which was then randomized to one of the above conditions)

Table B.6—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Chaulk and Podnar (2021)	Canada	Members and veterans of Canadian Armed Forces and Royal Canadian Mounted Police	36	29 (78%) males, 7 (19%) females	12 weekly group outpatient sessions and 13th “booster session” three months after 12th session	Pretest/posttest comparison with outcomes measured using self-report, pretreatment, midtreatment, posttreatment, and three-month follow-up
Haugen, Goldman, and Owen (2015)	United States	World Trade Center first responders; law enforcement workers (22.2%), engineers (11.1%) construction workers (8.3%), remaining occupations representing no more than 5.6% each	36	32 males, 4 females	Weekly outpatient therapy sessions; mean of 15 sessions	Quasi-experimental pretest/posttest design (no control group)
Haugen et al. (2016)	United States	Law enforcement personnel (20.7%); each of the remaining occupations represented no more than 6.9% of the total sample	29	24 males (82.8%), 5 females (17.5%)	Weekly outpatient therapy sessions; mean of 15 sessions	Quasi-experimental pretest/posttest design (no control group)
Jarero, Schnaider, and Givaudan (2019)	Mexico	First responders on active duty (firefighters, paramedics, emergency nurses) with high PTSD scores	60	68.3% male, 31.7% female	One day in outpatient setting	RCT with outcomes measured at baseline, 10–12 days posttreatment and 90 days posttreatment

Table B.6—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Jones, Turner, and Barker (2021)	UK	Police officers and senior staff	50	22 males, 28 females	Eight outpatient cognitive-behavioral 1:1 coaching sessions over a 12-week period	RCT with outcomes measured at baseline, 12 weeks (immediately postintervention), and 6 months; qualitative feedback on treatment
Kerswell et al. (2021)	Australia	Police officers who experienced traumatic event in course of service and were diagnosed with PTSD	3	2 males, 1 female	12 weekly 90-minute outpatient sessions	Case series design, measuring outcomes after the completion of treatment and three-month follow-up (no control group)
Marks et al. (2020)	United States	Firefighter/emergency medical services and LEOs who sought treatment for problems related to traumatic events	29	26 males, 3 females	Delivered in 29 outpatient sessions in either traditional (16–17 weeks) or intensive format (3 weeks)	Quasi-experimental, pretest/posttest design
McCue (2019)	United States	Police officers and firefighters on leave or retired from service	130	100% male	Two weeks in residential setting	Pretest/posttest comparison using archived data from three self-report measures (no control group)
Mithoefer et al. (2018)	UK	Military veterans, firefighters, and police officers	26	19 (73%) males, 7 (27%) females	18 hrs. of nondrug outpatient psychotherapy and 16–24 hrs. (2–3 sessions) of MDMA-assisted psychotherapy	RCT; three conditions: MDMA was administered orally at 30 mg (active control), 75 mg, or 125 mg in two blinded experimental sessions spaced 3–5 weeks apart

Table B.6—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Morrissey (2016)	United States	Nurses, emergency medical technicians, paramedics, and firefighters	18	15 males (83%), 3 females (17%)	Three hour-long outpatient group EMDR sessions	Quasi-experimental, pretest/posttest design (no control group)
Smid et al. (2018)	Netherlands	Police officers	534	370 (69%) males, 164 (31%) females	Weekly individual outpatient sessions, each lasting 45–60 min for a duration of 15–16 weeks	Pretest/posttest comparison (no control group)
Tehrani (2019)	UK	Emergency service professionals (police, ambulance, and fire personnel)	377	Of initial 429 participants, 194 were male, 235 were female	6 sessions in outpatient setting	Quasi-experimental pretest/posttest design; participants were assigned to the nearest available therapist (no control group)
Won et al. (2020)	South Korea	Firefighters	1,859	94.5% male, 5.5% female	Total duration of outpatient intervention was 90–240 minutes; full duration was unclear	Quasi-experimental pretest/posttest design (no control group)

TABLE B.7

Detailed Descriptions of Group Prevention Skills and Knowledge Training Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Au et al. (2019)	Hong Kong	Police staff and supervisors	300	Not reported	18 weeks with 3 6-week phases with 15 hours, 2.5 days, and 2 days of training	Pretest/posttest; follow-up posttest questionnaires
Blumberg et al. (2020)	United States	First responders	124	NA	8 weeks	Pre-post surveys and follow-up measurements were obtained for two years following the baseline assessment.
Brouzos et al. (2021)	Greece	Police officers	94	Treatment 30 males, 19 females; control 32 males, 13 females	6 1-hour sessions over 2 weeks	RCT; questionnaire completed at pre, post, 1.5-month follow-up and postbooster session
Carleton et al. (2018)	Canada	Police	147	56.5% female, 43.5% male	52 weeks	Questionnaire completed at baseline, 6 months, and 12 months
Chitra and Karunanidhi (2021)	India	Female police officers	63	100% female	Training 3 times per week for 8 weeks for treatment, none for control	RCT; data collected at 3 points in time
Drake (2021)	United States	Police officers	174	80% male, 19% female	16 hours over 2 days	Pretest/posttest survey design (no control)
Kosor (2017)	United States	Professional first responders: police and firefighters	119	111 males, 8 females	8 weeks	Quasi-experimental, pretest/posttest survey design
LaMontagne et al. (2021)	Australia	Station leaders (sergeants and similar) and troops from a statewide police force	53	Not specified	From baseline measure to complete was approximately 2.5 years; intervention periods lasted 12–15 months for stratum 1 and 9–10 months for stratum 2	RCT design with semistructured interviews and field notes; no random assignment; selection of departments within the state and the assignment to treatment and control groups were random

Table B.7—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Mahaffey et al. (2021)	United States	Active disaster response workers who responded to Hurricane Sandy recruited through agencies, such as ambulance services, fire departments, law enforcement, and hospitals	167	51.3% male, 47.4% female	One 4-hour session	RCT with outcomes measured at baseline and three-month follow-up
Nwokeoma et al. (2019)	Nigeria	Nigeria police force	63	56 males, 8 females	3 months	RCT, 2 self-report questionnaires at times 1, 2, and 3
Romosiou, Brouzos, and Vassilopoulos (2019)	Greece	Police officers	50	Not reported	Not reported	Quasi-experimental; assessed at pretraining, immediately after training, and 3 months later
Skeffington et al. (2016)	Australia	Career recruits at the Department of Fire and Emergency Services	45	NA	4 hours	RCT
Sommerfeld et al. (2017)	Canada	Firefighters	Phase 1: 72, phase 2: 19	Phase 1: 66 males, 6 females, Phase 2: 10 males, 9 females	Phase 1: 3 hours of intervention Phase 2: one-hour interviews	Phase 1: online modules and in-person workshops Phase 2: qualitative interviews
Stelnicki et al. (2021)	Canada	Public safety personnel (e.g., communications officials, corrections workers, firefighters, paramedics, and police officers)	15	8 males, 7 females	8 weeks + 10 months follow-up	Study participants were recruited via email; surveys at baseline and 5 times during follow-up period

Table B.7—Continued

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Thompson and Drew (2020)	United States	LEOs	61	21.3% male, 32.8% female, 46% no answer	21 days	Voluntary; recruited by author through personal networks; evaluation of program by participants through a survey; thematic analysis of a purposeful sample of respondents
Turgoose et al. (2017)	UK	Sexual Offenses, Exploitation and Child Abuse Command of the London Metropolitan Police Service	142	62% female, 38% male	90-minute training session	After training and recruiting, participants completed a questionnaire, viewed 3 vignettes, and completed another questionnaire about the vignette; follow-up was administered after 8–10 weeks
Wild (2016)	UK	Emergency workers	430	186 females, 131 males	6 2.5-hour sessions of group-based resilience interventions	RCT with a 3:1 ratio of receiving the intervention or not
Wong (2021)	Canada	Firefighter, paramedic, police officer, and emergency communication personnel who experienced symptoms of a mental health condition but did not meet full criteria for a diagnosis	60	71.4% male, 28.6% female	5 90-minute trainings	RCT; self-report questionnaires at three time points: screening interview, completion of class sessions, and long-term follow-up

TABLE B.8
Detailed Descriptions of Other Stress Reduction Program Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Curley et al. (2021)	Canada	First responders	140	64.3% male	One-time survey to assess support for program	Self-reported inventory of mental health, psychological help-seeking, and attitudes and experience with support canines
Curley et al. (2021)	Canada	LEOs and staff	20	Not reported	90-minute session for 8 weeks	Self-reported symptom inventory and a 10-item survey to understand perceived stress. The EQ-5D was used to evaluate quality of life
Iwakuma et al. (2017)	Japan	Health care professionals who experienced the Great East Japan Earthquake	17	94% female, 5.9% male	Single 45-minute session	Pre-post quantitative assessment of mood traits and qualitative questions on meditation experience; no control group.
Tegeler et al. (2020)	United States	LEOs	15	14 males, 1 female	12.2 sessions over 7.9 in-office days	Survey to assess mental health symptoms, survey to assess attitudes toward canines, survey to assess perception toward support canines as a tool to support psychological wellness

TABLE B.9
Detailed Descriptions of Critical Incident Response Program Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Boothroyd, Green, and Dougherty (2018)	United States	First responders who had been exposed to traumatic events	207	67% male	Not Applicable	Within-individual prepost quantitative assessment with posttreat and three-month follow-up. Qualitative survey questions posttreat. No control group.
Calhoun (2020)	United States	Emergency first responders who had at least one year of service	284	55.8% male, 44.1% female	Not Applicable	Survey on perceptions of programs
Jonker, Graupner, and Rossouw (2020)	South Africa	Employees from police agencies, mining organizations, and emergency medical services who were exposed to at least one traumatic incident in line of duty	95	68% male, 29% female	Not Applicable	Semistructured interviews and focus groups
Taylor-Gray (2018)	United States	EAP professionals who work with law enforcement and respond to critical incidents	12	67% male, 33% female	Not Applicable	Interviews
Watson and Andrews (2018)	UK	Police officers and police staff	859	55% male, 45% female	Not Applicable	Comparison of personnel from 3 police forces using trauma risk management and two forces without trauma risk management
Wills (2018)	United States	Police officers from three states in the West and Pacific Northwest	119	86% male, 14% female	Not Applicable	Survey; participants reported on exposure to critical incidents, critical incident services provided, and self-reported psychological measures

TABLE B.10

Detailed Descriptions of Suicide Prevention Training Studies

Author (year)	Country	Sample	N	Sex	Program Duration	Method
Hofmann et al. (2021)	Germany and Switzerland	Police officers	102	61.8% male	Self-directed with up to 3 weeks to complete	Quasi-experiment
Mishara and Fortin (2022)	Canada	Police	4,178 (2000) 4,557 (2018)	77.9% male, 22.1% female	1.5 days of training followed by ongoing helpline and publicity campaign	Used administrative records from Quebec Chief Coroner's Office investigation reports of all police suicides combined with data from Montreal PD on suicides; 2009–2018; compared suicide rates before and after program in Montreal with those in the rest of Quebec

Interview Guide

We conducted interviews with experts to get input from a diverse set of stakeholders. Our goal was to gather information about the research that the individuals or their agencies were involved in and what they think are the most pressing topics related to law enforcement wellness. We used the interview instrument described below to guide the discussions.

Overall Use of Programs

1. How does your agency address mental health and wellness/how does mental health and wellness fit into your agency mission?
 - a. What services/programs are available?
2. Do you think people in your office generally use the mental health services they have access to?
 - a. Do you think people in your office generally use their EAP?
 - b. Privacy concerns, effectiveness (trust), customer service issues
3. How effective is self-identification for mental health needs?
4. Are automatic triggers for counseling/evaluation (weapon discharge, suspect death, death in unit, surge op >3 days, sexual assault response, child crime response, every 5 years, upon promotion, during requalification . . .) used in your office?
 - a. What kind of outcomes do they usually have?
 - b. Do you think they're effective in promoting well-being?

Specific Programs

5. What have you seen as the most effective preventative mental health program/intervention?
6. After a critical incident, what is the most effective intervention?
7. Does your office have an official mentorship program?
 - a. Are many people involved in it?
 - b. Are there unofficial mentoring relationships?
 - c. Are there any formal or informal support networks within your office (cohort groups, ERGs [employee resource groups], carpooling, etc.)?

- d. How socially connected do you think your office is?
- 8. Have any mindfulness or mental health apps or initiatives been promoted in your office as part as overall wellness?
 - a. What about nutrition or physical fitness apps or initiatives?
 - b. Were they presented similarly?
 - c. How do you think any of these would be received in your office?
- 9. What would be the most impactful work-life/EAP/LEO training module to improve mental health?

Agency Culture/Barriers

- 10. Do you think people in your office generally feel like they have sufficient access to mental health services?
- 11. What are the most common barriers to seeking mental health services?
 - a. Are those barriers ones that can be institutionally reduced?
 - b. Are they cultural?
- 12. Seeking help with emotional and psychological well-being is sometimes counter to the culture of an agency. Does the culture of your office or agency support seeking help?
 - a. Does it vary based on the kind of help (leave vs. EAP vs. counseling)?
 - b. Has it changed over time? If so, how so?
- 13. In regard to long- and short-term mental health in high-stress, high-consequence professions, how can a higher headquarters best support frontline units? Policy, training, intervention teams?

Research

- 14. What aspect particular to LEOs (what health needs are different for LEOs vice civilians) should be researched/evaluated to improve mental health outcomes?
- 15. Do you have research questions about wellness, such as measuring program effectiveness or training requirements, that you feel should be prioritized?
- 16. What is the most challenging aspect of researching mental health issues within law enforcement organizations?

Evaluation Readiness

- 17. What is the aim of [name of program]?
- 18. Do you collect data on [name of program]?
 - a. What data do you currently include in the database?

19. Do you think [name of program] is effective?
20. Have you participated in an outcome evaluation in the past (internal or external)?
What do you think are the advantages and disadvantages to participating in this type of evaluation?
21. Would you be interested in participating in an evaluation?
 - a. What type of approval would you need to receive?
22. How many clients do you expect the program to enroll each year?

Abbreviations

CBP	U.S. Customs and Border Protection
CBT	cognitive behavioral therapy
COVID-19	coronavirus disease 2019
DHS	U.S. Department of Homeland Security
EA	evaluability assessment
EAP	employee assistance program
EMDR	eye movement desensitization and reprocessing
LEADER	Law Enforcement, Active Duty, Emergency Responder
LEO	law enforcement officer
MBRT	Mindfulness-Based Resilience Training
MDMA	3,4-methylenedioxymethamphetamine
NA	not applicable
NET	narrative exposure therapy
PIER	Program Implementation and Evaluation Readiness
PTSD	posttraumatic stress disorder
RCT	randomized controlled trial
UK	United Kingdom
WCPR	West Coast Post-Trauma Retreat

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Concerns about the physical health, mental health, and safety of first responders and law enforcement officers have been increasing for some time. The goal of this research is to synthesize evidence from the growing literature on mental health and wellness programs studied with law enforcement and first responder populations to help the U.S. Department of Homeland Security (DHS) identify and strengthen programs and policies and to conduct an evaluability assessment (EA) to provide direction for future research.

This report presents findings from multiple research tasks, including a review of domestic and international literature on first responder wellness programs and interviews with key stakeholders in DHS about existing DHS wellness programs, wellness program implementation, and subsequent challenges. Authors conducted an EA of programs identified as potentially ready for evaluation in the stakeholder interviews. The authors of this report synthesized the findings from these tasks to develop a research agenda for future DHS wellness research efforts.

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