Responder Resilience

The stress of working in EMS can be combatted by improving resiliency. Photo Grant Therrien

Evidence-based program improves & sustains first-responder behavioral health

By **Jonathan Gunderson**; **Mike Grill**, MS, NREMT-P;

Philip Callahan, PhD & **Michael Marks**, PhD

On a hot and muggy summer afternoon, Fire Captain John Smith was attending a city council budget session. Upon finishing his presentation on the fire department's training budget, he received a text message from one of the firefighters on his shift asking him to call Station 2 as soon as possible.

When he called, he learned one of the members of his shift—a firefighter who had called in sick that morning—had called the station and told his peers he was going to commit suicide. Almost simultaneously, Smith received a phone call from the dispatch center informing him sheriff deputies were en route to an address for "shots fired." He immediately recognized the address as the home of the firefighter EMT threatening to take his life. Within minutes, his portable radio toned out a request for EMS to respond to the same address.

Smith immediately responded to the scene. On arrival he observed a white sheet covering what appeared to be a body on the front lawn of the residence. As he exited his vehicle two of the first responders immediately walked toward him. He knew by the distraught look on their faces what had happened.

SUICIDE & EMS

Why do tragedies like this occur, and what do we know about the first response community in regard to stress-related health issues? Research suggests that comparative measures, such as the standardized mortality rate, accident injuries and early retirement based on medical issues, are higher in first responders than for the general population.

As an example, in 2012, the Chicago chapter of the International Association of Fire Fighters' employee assistance program released a report focusing on suicides within its organization. In reviewing data

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Research in resiliency training has shown successful readjustment diminishes the risk of developing posttraumatic stress disorder. Photo Craig Jackson

from 1990–2010, researchers reviewed 1,787 deaths of active and retired Chicago Fire Department (CFD) members, identifying 41 completed suicides. Each death was a male with an average age of 55. In addition, researchers determined the likelihood of an active or retired CFD member committing suicide was 25 times greater than the general population (10–12 suicides per 100,000 in general population versus 25 suicides/10,000 for the CFD cohort).[1] Further, work-related stress has been associated with mental health problems and the prevalence of posttraumatic stress disorder (PTSD) appears to be much higher for first responders than for the general population. Some startling data suggests that first responders live 15 years less than the "civilian world."

PTSD is a mental disorder that potentially follows one or more traumatic events where an individual experiences a potential or actual loss of life or experiences a sense of helplessness or horror. The regularity of these events, as evidenced by EMS, police and firefighters, may be cumulative and add to the risk of PTSD.

Finally, such risk factors as stress, mental health problems, alcohol abuse, divorce or separation, and the presence of a firearm in the home, all contribute to the potential of intentional self-harm or suicide.

RESILIENCY PROGRAM

In January 2013, a collaborative effort between the Colorado Department of Public Health Office of Emergency Preparedness and Response, Centura Health (Colo.) Prehospital Emergency Services, and Philip Callahan, PhD, and Michael Marks, PhD, led to the development and delivery of two consecutive one-day classes at an Aurora, Colo., presentation room. The classes were called First Response Resiliency.

Resiliency is the ability of an individual to bounce back from life's adversity, cope with stresses and deal with these stresses in healthy ways. Because self-efficacy—most simply defined as the belief in one's capabilities to achieve a goal or an outcome—is related to stress reactions and quality of coping in threatening situations, maintaining a sense of personal self-efficacy, owing to resiliency, becomes foundational to producing, through one's actions, the desired level of performance. Supportive of this foundational effort is the personal examination of the individuals' past experiences that contributes to the belief of survivorship versus victimhood.

The program's goal was to apply resiliency practices that effectively manage stress and foster personal and professional development through intentionally practicing a resiliency skill set and establishing a social framework to foster resiliency. Specific focus was on research-based resiliency methods, assessment, and the physical, psychological, and social systems of resiliency.

This program emerges from a jointly developed program originating from the Southern Arizona VA Health Care System and the University of Arizona to address the reintegration of veterans into an academic setting. A dominant theme in the curriculum emphasizes resiliency.

Research in resiliency training has demonstrated that successful readjustment diminishes the risk of the development of PTSD.[3] Moreover, resiliency characteristics and the development of an adequate support system can be protective factors in preventing PTSD. Resiliency can be taught effectively in a classroom setting and the development of appropriate resiliency attitudes can lead to an increase in retention.

In their work reintegrating Iraq and Afghanistan veterans into society, Callahan and Marks found that a cohort-based social framework, encouraged in their curriculum, provides an integrative support system that reduced hyperarousal (a chronic state of fight or flight) and makes use of "veteranism," or comradery, and trust. Their approach doesn't pathologize a veteran's readjustment, but instead focuses on resiliency and education to practice positive adaptation in a nonclinical setting. In other words, this approach doesn't treat someone as psychologically unhealthy. Rather, this is an entirely educational approach to learning and adopting resiliency skills in a nonclinical setting. Results showed statistically significant increases in measures of resiliency over the course of a semester and a subsequent increase in retention, or continuity in the college setting.

Although these increases in measures of resiliency, such as the ability to set goals, improve overall nutrition, improve sleep hygiene and the ability to form a strong social support network, occurred over the span of one semester with veterans, the program for first responders was developed with the intent that comparable improvement in resiliency could occur within a much briefer period of

time with a population that shares, to some degree, comparable characteristics.

The resulting program for first responders was designed to see if measurable change would occur within a span of several hours of instruction. And, if change did occur, would the change be sustained? Further, would participants perceive the program provided them with the ability to be more resilient and beneficial in dealing with stressful events?

PROGRAM PRESENTATION

The First Responder Resiliency program consisted of 25 participants who had either direct or indirect involvement in the Aurora Theatre incident that occurred in July 2012, including police, fire, EMS and agency intervention personnel.

The room arrangement allowed participants to form groups of three to four people to facilitate discussion. Two identically formatted sessions occurred over two days in the same room.

Twenty-five participants were provided an overview of the program at the outset of the presentation and self-selected to be involved in the research. Participants were tested at the onset of the presentation and at the end of the class. Fifteen of these participants were tested with the researchers approximately six weeks following the class.

The classes were taught by Callahan and Marks in a team approach. Each class occurred in one day for about seven hours.

A curriculum-specific text was used for the program as both a personal journal for the learners and as a basis for presenting instruction. Additionally, a Web-based application allowed the skills to be examined on participants' personal computers or portable devices.

The First Response Resiliency curriculum addresses 12 resiliency skills. These include:

1. Goal setting;
2. Nutrition;
3. Exercise;
4. Sleep;
5. Relaxation;
6. ABCs (activating events, beliefs and consequences);
7. Perspective;
8. Self-defeating thoughts;
9. Empathy;
10. Wins and losses;
11. Reaching out; and
12. Social support.

Given the brevity of the one-day program, the skills of goal setting, sleep, relaxation, perspective, ABCs, empathy and social support were directly addressed. The remaining skills were to be addressed by participants after the class, but within a one-month time span.

Since social support is fundamental to resiliency, participants were encouraged to complete these remaining skills in a setting where social interaction could occur and could be potentially fostered into a social support system. Participants were encouraged to complete these remaining skills with their immediate discussion group when possible.

Each skill is modularized so it can be presented by itself or in conjunction with other skills as time permits. Each skill is addressed in less than one hour and encourages extensive interaction and reflection in a learner-centered education format.

The idea of reflection and problem solving is further encouraged through the use of think-aloud pair problem solving (TAPPS), whereby one individual orally presents an idea and the other listens and offers feedback regarding the clarity and thoroughness of the idea.

TAPPS aids in the development of analytical reasoning skills and encourages social interaction that allows rehearsing of an idea and produces deeper understanding. In this instance, groups of three or four were used as a matter of convenience and to encourage the group to stay together as long-term study support.

The presentation of each skill occurred in the following manner in approximately 50 minutes:

1. **Review of prior skills** *(0–5 minutes)*: The participants identify the previously discussed skills and provide a very brief definition of each. The process of verbalizing key points of the prior skills improves retention, identifies functionally useful information, and situates a skill within the overall context of the skillset.
2. **Introduction of the skill** *(10–15 minutes)*: The content component of the skill is presented as relevancy, or why the skill is important to personal resilience, and processed as a procedure or algorithm describing how the skill can be implemented. A case study is used to situate the skill and provide an example of how the case is translated into the skill algorithm so as to promote relevant experiential learning. One of the tools we can use to help maximize our resiliency in the face of a stressful situation is to change our perspective about that situation. This process considers the probabilities of the worst-case and best-case outcomes.
3. **Internalize the skill** *(10 minutes)*: To make the skills more useful, they're explored in multiple contexts that might include reflecting on or internalizing a past or current personal experience where the skill was used in some form. Building upon past learning makes incorporating the newer aspects of the skill more relevant and memorable. Focusing on a past success using the skill, as well as the vicarious experience of seeing others' successes with the skill, enhances the possibilities of improving upon one's self-efficacy. Further, one is encouraged to write the information related to the skill. A growing amount of literature suggests that addressing psychological needs in methods such as expressive writing produces psychological and physical health benefits.[4]

CLASSROOM APPLICATION: INTERNALIZE THE SKILL

Break into groups of two or three and use members in your group to assist you in the following exercise. Recall, in as much detail as possible, a past personal experience where you used Perspective to address a stressful situation and complete the entries in the following Perspective worksheet. The intent is to reflect upon a past experience in sufficient detail so as to complete all or as many of the entries as possible.

Identify the stressful situation, worst fear, & likelihood the worst fear will come true (1 - 10).

Identify an alternative improved scenario & likelihood this will come true (1 - 10).

Identify the most likely scenario, likelihood this will come true (1 - 10) & anything that needs to be done to help make desired scenario true.

4. **Externalize the skill** *(10 minutes)*: Writing is encouraged in this activity to aid in the clarification of thinking and to familiarize oneself with the skill and algorithm to explore it in a problem-based learning setting with support provided by others in the group. In this instance, individuals assemble into smaller groups to address a scenario they're likely to encounter in the field and come to some resolution as to how they would use the current skill, in

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addition to any other, to best address the scenario. This process allows individuals to work as a team and realize the potential of establishing a social support network, the most powerful resiliency skill.

CLASSROOM APPLICATION: EXTERNALIZE THE SKILL

To change our perspective about a situation is to consider the probabilities of the worst-case and best-case outcomes. Perspective allows us to grow as a result of trauma using adaptive skills, behaviors and attitudes developed in response to trauma and further reminds us that trauma survivors are not powerless victims. Given these tools, let us examine the following case study. The intent is to apply the skill to someone other than you.

Case Study: You are at the scene of a major weather-related event. A microburst or perhaps a tornado has devastated several structures in about a one-block area. The weather has cleared and miraculously no one was physically injured beyond a few scratches. There are, however, several homeowners who have lost their homes. One such homeowner, standing in front of rubble that was the home, is bemoaning the loss of their home. The homeowner looks to you for support. Break up into groups of two or three and put this situation into perspective.

Identify the stressful situation, worst fear, & likelihood the worst fear will come true (1 - 10).

Identify an alternative improved scenario & likelihood this will come true (1 - 10).

Identify the most likely scenario, likelihood this will come true (1 - 10) & anything that needs to be done to help make desired scenario true.

5. **Review of the skill** *(5–10 minutes)*: Allows for clarification, a review of externalization of the skill, and also addresses self-efficacy. In other words, what have participants learned from this skill?
6. **How to effectively remember this skill** *(5 minutes)*: This homework event asks participants to explore the skill in the context of a current situation. Ideally, support is provided by others in the study group to ensure some degree of success in completing the skill. The intent is to make the skill more personally memorable.
7. **Externalize to a community** *(5 minutes)*: The intent of this exercise is to consider the application of the skill to others in a community by advancing it beyond the individual. Although there's little expectation this process can be fully developed in the class setting, it's intended to provoke further thought on the usefulness of the skill to others and provide an intended contrast. Because community is a variable term, an individual may define this as the immediate family and apply the skill in the context of the family. This approach fosters the notion of social support and mentoring, that the individual can both use as well as provide for a social support network.
8. **Summarize the skill** *(5 minutes)*: This provides a further review of the skill if questions arise after earlier exercises. Emphasis is placed on the idea of mentoring and demonstrating the skill to others. Participants might be asked: What did you do well? What was difficult about this skill? What might you improve upon when using this skill?

Testing included learners' measures of resiliency and learners' perceptions regarding curriculum understanding and effectiveness. Perceptions were measured using a 10-item open-ended questionnaire. The questionnaire addressed learner self-assessment, review of major objectives and curricular perceptions.

Resiliency measures were obtained using the Response to Stressful Experiences Scale (RSES) test from the VA National Center for PTSD. Testing occurred immediately before and after the class and also approximately six weeks later.

WHAT WE FOUND

The combined group pretest (mean [M] = 70.5, standard deviation [SD] = 10.4) (95% confidence interval [CI]: 66.4 to 74.6) and post-test (M = 77.2, SD = 8) (95% CI: 74.0 to 80.3) resiliency scores demonstrated significant improvement, t-value [t] (23) = 2.07, p-value [p] < 0.05 using the RSES test. See Figure 1 for a comparison of pre- and post-resiliency scores.

The six week follow-up to the class using a convenience sample—a sample chosen because of its ease of attainability—showed pretest (M = 74.9, SD = 4.0) (95% CI: 71.4 to 78.4) and six-week follow-up test (M = 81.3, SD = 13.1) (95% CI: 78.3 to 84.4) resiliency scores demonstrated significant improvement, t(13) = 2.16, p < 0.05 using the RSES test. See Figure 2 for a comparison of pre-, post-, and six-week resiliency scores.

Regarding the qualitative aspects of the program survey, 15 respondents met with researchers at the time of visitation to provide qualitative aspects of the program survey and hence formed a convenience sample representative of the disciplines participating in the training. To the questionnaire query of "Did you complete the remainder of the skills?," 10 of the 15 completed the skills, seven of whom did so on their own. In response to the query "Did you develop and meet with your social support group?," 14 of the 15 did so.

To the query of "Did the training help you to better cope with stressful events?," 14 of the 15 responded affirmatively. The single participant who responded negatively didn't complete the remainder of the skills but felt the "messaging is repetitive and can get lost on some personalities in the community."

To the query of "What changes would you like to see to the training?," nine of the respondents articulated a need for "more" training in the form of addressing all skills, such as "would enjoy two full days ... to cover all skills," and inclusion of additional scenarios such as "more real-life practice in the exercise scenarios."

Finally, to the query of "Would you recommend this training to others?" all 15 responded affirmatively. Respondents, did, however, qualify the recommendations to extending it to the family and to selective groups.

SUMMARY

The questions posed in this study were:

1. **Can individuals make significant resiliency improvements within the span of several hours of intense instruction? And, if change does occur, can this change be sustained?**

This study suggests resiliency characteristics can be taught effectively using compressed one-day problem-based learning. Both cohorts achieved significant improvements in resiliency scores from pre-test to post-test. Further, it appears within the term of approximately six weeks, the effects are sustained.

2. **Do participants perceive the training will provide them with the ability to be more resilient? In effect, is the program**

perceived to be beneficial in dealing with stressful events?

Following the six-week interim from the training, 14 of the 15 participants responded affirmatively. The participants were unanimous in recommending the training to others. Not all of the participants completed the training outside of the class. Given the cultures and lack of time, this aspect didn't appear to seriously erode the resiliency scores nor the participants' perceived ability to deal with stressful events. Although two days of training covering all of the resiliency skills have been considered more ideal by participants (unpublished study), the costs and logistics of such an endeavor are onerous. Moving those skills not covered in class to more formalized distance learning may provide more scaffolding for completion beyond the classroom. Additionally, this same format could simplify spousal training in resiliency.

3. **What can be determined from this cohort regarding persistence of resiliency and retention?**

Long-term measures are beyond the scope of this pilot study but certainly deserve consideration, as does much more extensive training with diverse audiences. Given the successes with the aforementioned veteran's model, we might argue this cohort model provides a foundation for establishing a learning community and a sense of inclusive educational and social community.

The goal of this program is to understand, assess, plan and apply resiliency practices that manage stress in a manner that fosters personal and professional development. Specific focus is on research-based resiliency methods, assessment, and the physical, psychological and social systems of resiliency.

These training results indicate positive outcomes. Pre-tests and post-tests indicate participants demonstrated significant gains in resiliency.

Those interviewed six weeks after the training demonstrated significant gains in resiliency from the pretest. A majority of the participants perceived the resiliency training to be beneficial in dealing with stressful events and unanimously recommended the training to others.

WHERE DO WE GO FROM HERE?

Further research in this resiliency training program is necessary with replication at diverse settings and with a broad range of vocational expertise ranging from academy to retiree. This requires further dissemination and broadening the research base. Also, additional research should be focused on incorporating spousal and family resiliency education and its impact on quality-of-life issues. With continued persistence in this research the hope remains to make a healthy difference in the lives of those who save others. JEMS

Figure 1: Comparison of participants' pretest and post-test resiliency scores

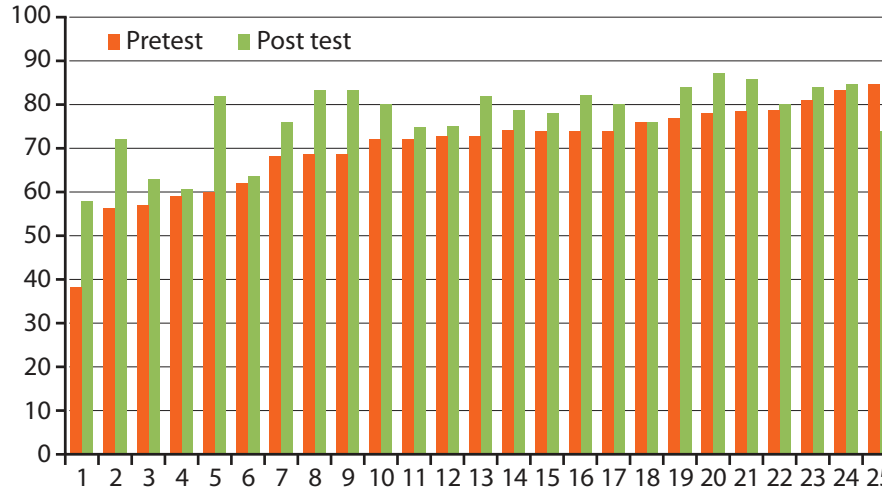
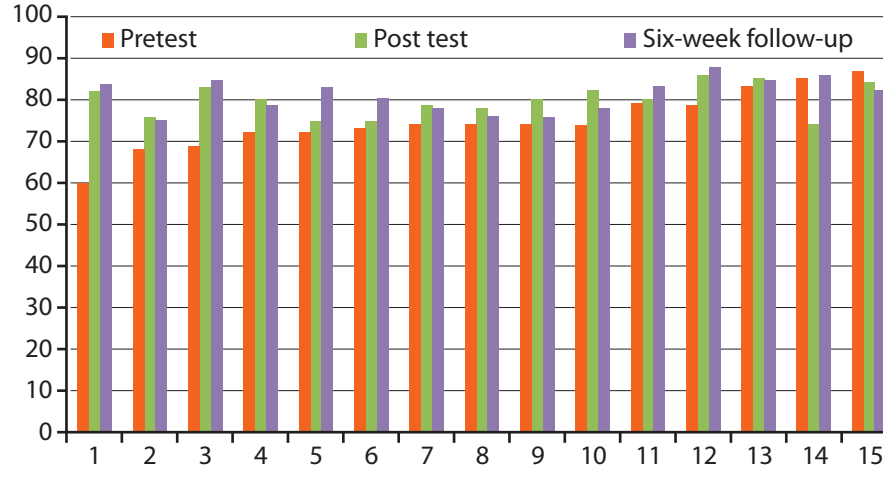


Figure 2: Comparison of participants' pretest, post-test and six-week resiliency scores



Jonathan Gunderson works as a behavioral health specialist for the Office of Emergency Preparedness and Response in the Colorado Department of Public Health & Environment, designing and overseeing initiatives and projects to mitigate the effects of extreme stress and trauma in collaboration with first-response communities, faith communities and academic institutions.

Mike Grill, MS, NREMT-P, is the EMS regional program director for Centura Health's South Denver (Colo.) EMS Team. Mike has been active in fire/EMS since 1985.

Philip Callahan, PhD, has served as associate professor at the Veterans Education College of Agriculture and Life Sciences, and is currently emeritus at the University of Arizona. He's also served in Arizona as a paramedic and firefighter.

Michael Marks, PhD, is currently the lead psychologist and evidence-based practices coordinator at the Southern Arizona VA Healthcare System and assistant clinical professor at the University of Arizona in Tucson.

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