

**Psychological Skills Inventory for Law Enforcement (PSI-LE):
Development and validation of a multidimensional measure of
psychological skill use for law enforcement**

FINAL REPORT

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SUMMARY

The primary purpose of the present study was to develop a practical, reliable, and valid self-assessment of the use of psychological skills for law enforcement personnel. Drawing from the core mental strategies taught as part of the Performance, Recovery, and Optimization (PRO) resiliency program curriculum, the Psychological Skills Inventory – Law Enforcement (PSI-LE) assess the use of seven central mental skills: attention management, winning mindset, combat breathing, muscle control, mental practice, physical recharge, and self-talk. Consultation with expert law enforcement personnel and PRO instructors led to the development of an initial 35-item inventory. Following, the PSI-LE was administered to 1059 law enforcement officers, and ensuing analyses resulted in a final 25-item inventory that demonstrated acceptable psychometric properties. The final inventory produces subscale scores for seven mental skills and a single overall total score.

The ability to gauge the extent to which officers utilize psychological skills and strategies to manage stress is important for determining the success and impact of mental resiliency programs. To this extent, a secondary aim of the present study was to (a) present preliminary findings regarding officers' use of psychological skills, and (b) determine the extent to which the use of such strategies are related to beneficial psychological health and wellbeing outcomes.

The PSI-LE revealed significant demographic differences in the utilization of psychological strategies. Specifically, more utilization of psychological skills were observed in younger officers, those with less time on the force, and those in lower ranks. This trend is likely related to younger officers in the current sample having more exposure to PRO curriculum as part of academy training, compared to older officers who only completed PRO as part of in-service requirements. These findings highlight the importance of implementing mental skills

training as part of academy curriculum, and the impact that these programs can have on the use of psychological strategies.

Finally, the current study also sought to determine the extent to which the use of psychological skills is linked to improved psychological health and wellbeing outcomes. Critically, preliminary analyses indicated that the use of mental strategies quantified by the PSI-LE were significantly related to a number of positive outcomes including: mental resiliency, health satisfaction, and positive affect. These findings support the underlying assumption that the use of mental skills can lead to improved psychological outcomes.

The PSI-LE represents an important tool for being able to gauge the effectiveness of psychological resiliency programs by establishing a valid and reliable measure for quantifying mental skill use, and linking the use of those skills to important psychological health and wellbeing outcomes. Providing such evidence is crucial for preserving programmatic and budgetary support, establishing program acceptance and credibility, and generating new theoretical insight into officer wellbeing. Importantly, the PSI-LE can also foster the ability of departments to perform needs assessments regarding officers' strengths and weaknesses in their use of mental skills. In doing so, this can help facilitate the design and implementation of psychological resiliency programs aimed at improving mental wellbeing and performance. Given the negative impact of trauma and critical incident stress on the mental and physical wellbeing of law enforcement officers, the ability to provide evidence-based support to resiliency programs can have important and meaningful benefits to officers' overall health and quality of life.

Psychological Skills Inventory for Law Enforcement (PSI-LE)

“For law enforcement and emergency services professionals, stress and resilience are not academic topics or luxuries; they are essential to physical and mental health, as well as to optimum job functioning” (Miller, 2008, p. 109)

Introduction

Compared to workplace stress found in other occupations, police officers and first responders are exposed to traumatic and life-threatening situations at frequencies far greater than the normal population (Aaron, 2000; Laufesweiler-Dwyer & Dwyer, 2000; LeBlanc et al., 2008; Sommer & Ehlert, 2004). Added to this, officers must maintain a constant vigilance while working long hours, often with individuals who are hostile and in crisis. These realities have led to law enforcement being considered among the most stressful occupations (Hartley, Burchfiel, & Violanti, 2008; Terry, 1981), and has led to the call for increased research and assessment of the impact of officer wellness and resiliency training programs (Copple et al., 2019; Spence, Fox, Moore, & Comrie, 2019).

A growing body of literature indicates that the frequent exposure to occupational (e.g., threats of danger, homicides, deaths, etc.) and organizational stressors (e.g., extended work hours, shift work, rigid organizational structures, etc.) found within law enforcement work elevates officers' risks for experiencing adverse mental and physical health outcomes (Joseph et al., 2009; Ramey, Downing, Franke, Perkhounkova, & Alasagheirin, 2012). Compared to the general population, officers have been shown to have an increased prevalence of cardiovascular disease, anxiety, depression, and post-traumatic stress (Arnetz, Arble, Backman, Lynch, & Lublin, 2013; Gross et al., 2006; Hartley et al., 2008; Ramey, Downing, & Franke, 2009; Wright, Barbosa-Leiker, & Hoekstra, 2011). Additionally, elevated stress has also been shown to negatively impact officer job performance. Research indicates that high levels of stress in

officers are linked to poor decision-making (Brown & Daus, 2015), increased absenteeism (Wright & Saylor, 1991), job dissatisfaction (Norvell, Belles, & Hills, 1998), burnout (Brown, Cooper, & Kirkcaldy, 1996; Lord, 1996), and early retirement (Becker et al., 2009; Kop, Euwema, & Schaufeli, 1999). These metrics do not only affect the community for whom the officers serve, but also place financial burdens on the departments themselves. From 2014-2015, the United States spent approximately \$173 billion on police and fire services (Bureau of Justice Statistics, 2014; Chantrill, 2015) with a significant portion going towards officer's health, early retirement, and excessive force civil lawsuits (Andersen, Papazoglou, Nyman, & Koskelainen, 2015).

As reflected in the report by the President's Task Force on 21st Century Policing (Pillar 6; 2015), and more recently by the passage of the Law Enforcement Mental Health and Wellness Act in 2017, concern for the mental health and wellness of law enforcement officers is gaining long overdue national recognition. Traditionally, the development of mental toughness and resiliency in law enforcement was considered as an indirect byproduct of arduous physical training, strict performance standards, stern discipline, and reality-based training scenarios (Manning, Laufer, Asken, & Hand, 2011). However, the use of such indirect methods to address mental training has been criticized (e.g., Thompson & McCreary, 2006), and the need for more explicit programs to address mental wellbeing and resiliency has been highlighted (e.g., Manning et al., 2011; Ramey et al., 2016). According to Ramey, Perkhounkova, Hein, Bohr, and Anderson (2017), programs to develop mental resiliency "should equip officers with the tools to maintain composure and self-regulate in challenging situations and should further provide techniques that teach officers to quickly regain psychological and physiological balance after experiencing these situations" (p. 441).

The vast majority of research on the impact and development of mental skills in high stress scenarios comes from the field of sport psychology. Research on elite sports has repeatedly demonstrated that the development of mental skills is critical to athletic success and enjoyment (Orlick & Partington, 1988). Specifically, the employment of mental skills acts to support the full realization of the athlete's physical performances, thus helping them to achieve their full potential (Harris, 1985). For instance, Orlick & Partington (1988), found clear differences in the use of mental skills by Olympic athletes who performed well versus those who did not. Regardless of sport, the Olympic champions engaged in deliberate systematic mental preparation characterized by establishing daily goals, creating competition plans, utilizing imagery training, and developing plans to control focus and block out distractions. Similarly, Gould, Dieffenbach, and Moffett (2002) observed that Olympic champions were defined by a number of important mental skills that were imperative for performance including: (a) ability to cope with and control anxiety, (b) confidence, (c) mental toughness/resiliency, (d) ability to focus and block out distractions, (e) ability to set and achieve goals, and (f) optimism. To date, more than 100 studies have been conducted on the use of mental skills in athletics. Importantly, this work has shown that these critical mental skills can be developed and improved via psychological skills training.

The principles and findings derived from the field of sport psychology have recently begun to be appreciated for their applicability to other high stress domains, such as law enforcement (Le Scanff & Taugis 2002; Mînjînă, 2015). Emerging evidence suggests that psychological skills training (PST) and resiliency programs can be beneficial for helping mitigate the exposure and adverse consequences to persistent high levels of stress in officers (Arnetz et al., 2013; Christopher et al., 2018; Ramey et al., 2017). In one such study, Arnetz et al. (2013) examined the impact of a PST program provided to cadets during academy training. In addition

to regular academy training, the cadets received training on the use of imagery and mental practice of police tactical skills, adaptive coping strategies, and cue-controlled relaxation to manage arousal levels and concentration. Compared to a control group, cadets who received PST showed improved markers of physical health (e.g., reduced sleep disturbances) and psychological well-being (e.g., lower levels of depression, anxiety, and social dysfunction) up to 2 years following the training.

In a similar study, Christopher et al. (2018) assessed the feasibility and impact of a mindfulness-based resilience training (MBRT) program on law enforcement officers. Following an 8-week MBRT course in which officers were taught self-awareness strategies and mindfulness-based meditation techniques, results indicated that officers reported improvements in a number of psychological health outcomes (e.g., burnout, organizational stress, and sleep disturbances). Surprisingly, however, the study found no improvement on ratings of anxiety, depression, suicidal ideation, or resilience. Moreover, after a 3-month follow-up, no differences emerged between the intervention and control groups. The authors suggested one possible explanation as being a low adherence to the ongoing practice of the psychological skills following completion of the 8-week course.

The ability to determine the extent to which officers utilize the mental strategies and techniques learned during psychological skills training is critical to being able to accurately assess the impact and efficacy of PST programs. While evidence suggests that psychological skills training can have meaningful benefits for officers (e.g., Arnetz et al., 2013), a recent meta-analysis examining the impact of PST programs in law enforcement found only small effect sizes for reducing negative physiological, psychological, and behavioral outcomes (Patterson, Chung, & Swan, 2014). However, it is unclear whether the small effects sizes are due to the content of

the programs themselves, or the lack of implementation by the officers to utilize the instructed mental skills. In order for a PST program to have a positive impact on officer psychological, physical, and behavioral outcomes, the mental training must result in officers actively utilizing the learned psychological skills.

To date, assessment of the use of psychological skills by law enforcement officers is lacking, and as such prevents a complete understanding of why, in some instances, PST programs may have a limited impact on officer well-being. It is important to not only assess the outcomes of PST programs by way of psychological, physiological, and performance outcomes, but also by the active utilization of the trained mental skills. Within the field of sport psychology, a number of assessments exists that measures the use of mental skills during competition (e.g., Test of Performance Strategies (TOPS-2); Athletic Coping Skills Inventory-28 (ACSI-28): Hardy, Roberts, Thomas, & Murphy, 2010; Smith, Schutz, Smoll, & Ptacek, 1995). Such measures allow for the assessment of strengths and weaknesses in an athlete's psychological skillset, as well as the frequency in which they employ the various mental strategies (Taylor, 2018). Assessing the changes in psychological skill use is also an important benchmark for evaluating the impact and efficacy of a PST program (Smith et al., 1995). More than just assessing whether a PST program leads to better psychological, physiological, and performance outcomes, it's imperative to examine whether PST programs result in increased use of psychological tools and strategies.

A need exists for an inventory to measure the use of psychological skills designed specifically to assess the mental strategies necessary for mental resiliency within the law enforcement community. Most closely fitting this bill is the Mental Toughness Psychological Skills Profile (MTPSP) developed by Asken (2005). The MTPSP was designed specifically for

use with civilian law enforcement personnel and measures eight psychological skill dimensions deemed relevant for mental toughness: confidence (faith in one's ability to respond effectively), attention control (ability to stay focused during a response), physical arousal (feelings of stress and anxiety), arousal control (ability to manage the effects of autonomic activation), imagery use (use of mental strategies to improve performance), commitment (satisfaction and positive involvement with one's job), self-talk use (optimism and positive outlook), and physical condition (health-related habits). While the scale has good face validity, Smith, Wolfe-Clark, and Bryan (2016) revealed that the assessment does not have acceptable psychometric properties when assessing all eight dimensions. Furthermore, a more careful examination of the items reveal that the questionnaire conflates the use of psychological skills with the quality of one's ability to use them (e.g., "I mentally practice my tactical and leadership skills" versus "Picturing myself performing my tactical military skills is easy for me"). This is an important distinction. Someone may feel that they are good at a mental skill, but this does not mean that they actually use the skill. Given these limitations in the MTPSP, there remains a lack of an acceptable measure for the use of psychological skills within the law enforcement domain.

Purpose

In response to the void created by a lack of a reliable inventory to assess the use of psychological skills for officers, the current project sought to develop and assess a novel instrument, the Psychological Skills Inventory for Law Enforcement (PSI-LE) to gauge mental skill use specifically within an officer population. Development of such a tool is imperative for assessing and validating the impact of PST programs by determining 1) whether officers utilize the psychological skills learned during training, and 2) whether the use of those mental skills facilitate improved psychological health and wellbeing outcomes. Providing such evidence is

crucial for preserving programmatic and budgetary support, establishing program acceptance and credibility, and generating new theoretical insight into officer wellbeing.

Specifically, the current project sought to develop the PSI-LE as a measure of psychological skill use amongst officers in alignment to the curriculum of the *Performance, Recovery, and Optimization* (PRO) program. PRO is the San Antonio Police Department's (SAPD) resiliency, stress, and performance enhancement training program. This program has received national recognition, and was one of the 11 case studies reported on in the Law Enforcement Mental Health and Wellness Programs report (Cople et al., 2019). Developed to cater directly to the needs of civilian officers, the program is rooted in performance and sports psychology, and it utilizes the most up-to-date scientific literature on stress and performance optimization. PRO is divided into four learning modules: optimal response, optimal response tactics, mind tactics, and recharge. Each module is comprised of additional sub-topics and associated mental skills. In total, PRO stresses the importance of utilizing seven primary mental skills: combat breathing, muscle control, attention management, mental practice, performance self-talk, physical and mental recharge, and developing a winning mindset.

The aims of the current project were three-fold: 1) develop and assess the psychometric properties of the PSI-LE, 2) determine which psychological skills were most and least utilized by officers, thus providing programmatic feedback, and 3) provide preliminary evidence on the relationship between psychological skill use and mental health and wellbeing.

DEVELOPMENT OF THE PSI-LE

The development of the PSI-LE was comprised of 6 stages (see Table 1).

Table 1. Stages in the development of the PSI-LE

Stage	Method	Products	Objective
1) Identification of psychological skills for law enforcement	Review of PRO training material. Interview with PRO instructors.	Identified 7 main psychological skills domains.	Establish a comprehensive list of psychological skills domains trained via PRO
2) Initial item pool	Review of sport psychology assessments. Focus group with PRO instructors.	Initial item pool containing 81 items related to the 7 PRO mental skill domains.	Develop a comprehensive list of items reflecting the use of PRO skills with language relevant for law enforcement.
3) Item pool reduction	Expert ranking of items for relevancy.	Final set of 35 items, 5 items for each PRO mental skill domain.	Create a succinct item pool that reflects each of the 7 skill domains.
4) Development pilot	Administration of the PSI-LE: 483 respondents. Exploratory factor analysis.	6 principle factors were identified by the EFA with acceptable psychometric properties.	Determine the psychometric properties of the PSI-LE
5) Refinement of inventory	Analysis of pilot data. Creation of additional items.	7 additional items were added.	Refinement of scale to further distinguish between the 7 PRO skill domains.
6) PSI-LE administration	Administration of the PSI-LE: 576 respondents. Confirmatory factor analyses.	7 principle factors identified with acceptable psychometric properties associated with PRO skill domains.	Determine final psychometric properties of the PSI-LE

1) Identification of Psychological Skills for Law Enforcement

The PSI-LE was designed to specifically measure the use of psychological skills associated with *Performance, Recovery, and Optimization* training. PRO curriculum is divided

into four modules: optimal response, optimal response tactics, mind tactics, and recharge. The optimal response module is the foundation of the PRO program. In this module, officers are taught the survival stress response system, including adrenaline and cortisol and the autonomic nervous system, and ways to modulate this system. Specifically, officers are taught how the autonomic nervous system activates and fluctuates throughout the day, even when a survival threat is not presented. Officers are also introduced to how this can take a significant toll on the body over time (i.e., cardiovascular disease, diabetes, sleep issues, weight gain, etc).

In the optimal response tactics module, officers are taught how to modulate their stress response initially through combat (controlled) breathing and muscle control. They are taught the proper way to do deep, controlled breathing to activate the parasympathetic nervous system, which calms heart rate and reduces adrenaline and cortisol in order to facilitate the ability to think clearly for appropriate decision making. Heart rate monitors are utilized to help teach awareness of these physiological changes. They are also taught ways to focus on their muscle tension and reduce it, thereby reducing adrenaline and cortisol, heart rate, and distracted thoughts.

The mind tactics module is a more advanced sports psychology module and includes training on performance self-talk, mental practice, attention management, and mindset to help prepare officers to modulate their stress response. For example, officers are taught Self-Talk for Enhanced Performance Under Pressure (STEP-UP; Asken, 2005) to control mental static that may interfere with their ability to focus and accomplish a task or endure a long shift. Officers are also instructed on the concept of mental practice whereby they can utilize visual imagery to facilitate training and proper decision making. Furthermore, officers are provided information on how attention can be diverted and misdirected as a result of adrenaline and cortisol. They are

taught how attention is a limited resource; and despite the fact that two officers may encounter the same situation, there will be two different accounts of that critical incident. Mindset is an important central theme to PRO, and efforts are made to demonstrate the importance of having a clear sense of purpose regarding their jobs. Officers identify their core values and seek to highlight them in everything that they do throughout the academy, their career, and at home. Finally, the recharge module focuses on how officers can rest both physically and mentally to include making time for hobbies, optimizing sleep, creating an appropriate work-life balance, and maintaining a strong social support network.

The PRO curriculum is comprehensive in nature, and covers content that has been demonstrated to be important for officer well-being (e.g., Arntez et al., 2013; Christopher et al., 2018; Mînjină, 2015). Through a thorough review of PRO curriculum, and interviews with PRO instructors, seven primary mental skills were identified. These seven primary skills reflect the techniques and strategies taught to officers across each of the four learning modules. The seven mental skill domains are as follows: combat breathing, muscle control, attention management, mental practice, performance self-talk, physical and mental recharge, and developing a winning mindset.

- **Combat breathing** – strategies to control arousal (i.e., induce relaxation) and maintain focus through controlled breathing.
- **Muscle control** – strategies to reduce muscle tension caused by excessive stress.
- **Attention management** – strategies to maintain situational awareness and concentration.
- **Mental practice** – the use of mental rehearsal and imagery to practice and prepare for potential scenarios.
- **Self-talk** – strategies to guide and maintain focus through directing internal dialogue.

- **Physical and mental recharge** – strategies to maintain physical and mental well-being.
- **Winning mindset** – strategies for controlling negative thoughts, maintaining focus on aspects that are within one’s control, and maintaining clarity of purpose.

2) Initial Item Pool

Based on the seven mental skill domains identified above, a review of assessments from the fields of sport psychology and law enforcement was conducted to identify potential items related to each of the domains. For an item to be considered, it must be relevant to one of the seven domains, and it must exemplify a behavior representative of utilizing the skill (e.g., “When I experience negativity, I focus on what I can control”).

In addition to drawing items from established assessments, a focus group was conducted consisting of three PRO instructors. The instructors consisted of one lead psychologist with the primary responsibility of implementing PRO, and two experienced officers who implement PRO within tactical training. The purpose of the focus group was two-fold. First, the focus group ensured that the wording and language of the items were consistent with the vernacular of police officers. A number of items were drawn from the domain of sports and athletics, and thus needed to be made relevant to law enforcement. Second, the focus group developed additional items relating to the use of PRO skills within law enforcement not covered by items drawn from sport psychology. A provisional item pool of 82 items was generated covering the 7 psychological skill domains.

3) Item Pool Reduction

The next stage in development of the PSI-LE consisted of reducing the provisional item pool from 82 items to a more succinct list of items such that the overall length of the questionnaire did not place an undue burden on officers to complete. To reduce the item pool, a

focus group consisting of 3 PRO instructors individually ranked ordered the items for each mental skill domain. The instructors ranked the items based on relevance and clarity in reflecting the use of the associated mental skill. Based on the rankings, the top five items for each mental skill area was retained for inclusion in the inventory. Thus, a total of 35 items were included in the initial pilot questionnaire. The PSI-LE pilot questionnaire consisted of the following items:

Combat Breathing Items

1. When the pressure is on, I actively control my breathing to focus
2. I utilize combat breathing when in a tense situation at home
3. When I need to focus, I concentrate on slowing down my breathing
4. After a high adrenaline incident, I focus on my breathing to calm down.
5. I make sure to breathe from my stomach when trying to manage my stress

Muscle Control Items

1. I practice controlling muscle tension
2. If I'm feeling tense, I stretch to loosen up
3. When I observe a "death grip" on the steering wheel, I tap my fingers and stretch my hands in order to focus and relax
4. I pay attention to when I'm feeling tense and stiff
5. To maintain my situational awareness, I move my head from side to side.

Self-Talk Items

1. I often talk myself through difficult situations
2. I change negative moods into positive ones by controlling my thinking/self-talk
3. I often talk myself through tough situations by focusing on what I need to do
4. I talk to myself to help my police performance
5. I have specific cue words or phrases that I say to myself to help my performance during a call

Mental Practice Items

1. I mentally rehearse my response to potential scenarios
2. I mentally practice my tactical skills
3. I mentally practice for critical situations
4. Before a call, I think through potential scenarios and options
5. I deliberately reflect on past calls to improve future performance.

Attention Management Items

1. I recognize when I'm affected by adrenaline
2. I control my focus to maintain situational awareness during my shift or on a call
3. I practice blocking out distractions
4. I regain control of my concentration when I become distracted
5. I notice when I'm not focused

Winning Mindset Items

1. When I experience negativity, I focus on what I can control
2. I often reflect on my purpose for being a police officer
3. I recognize what is and isn't in my control
4. I often worry about things outside of my control
5. I focus on what's important now

Physical and Mental Recharge Items

1. I set specific goals for my fitness level
2. I get a yearly physical/check-up
3. I try to ensure that I get a minimum of 6 hours of sleep each day
4. I purposefully maintain friends outside of law enforcement
5. I eat healthy and limit my intake of "junk food"

As a final step, a five-point Likert scale was chosen to gauge the frequency in which the officers applied the skills. The descriptive anchors consisted of 1 – “Never”, 2 – “Rarely”, 3 – “Sometimes”, 4 – “Frequently”, 5 – “Almost Always”. Scoring was reversed for negatively worded items. The questionnaire was designed to produce an overall assessment of PRO mental skill use, as well as individual scores for each of the seven specific mental skill areas.

4) Development Pilot

As an initial assessment of the PSI-LE, the inventory was administered to 483 officers as part of annual in-service training. Participant demographics are presented in Table 2. Using this data, an exploratory factor analysis (EFA) with varimax orthogonal rotations was performed to explore the construct validity of the initial hypothesized seven factor model (see Figure 1). The number of factors was specified to seven, which was associated with the seven mental skill

domains of PRO. Individual items were retained if the factor loading was greater than or equal to .35 without double cross loadings.

Table 2. Development pilot sample characteristics (Total Sample $N = 483$)

	<i>f</i>	%
Gender		
Male	373	77.2
Female	43	8.9
Rank		
Patrol	283	58.6
Detective	89	18.4
Sergeant	4	.8
Captain	3	.6
Other	10	2.2
	<i>M</i>	<i>SD</i>
Age	41.95	9.97
Years in Law Enforcement	15.14	9.70

The EFA revealed that the initial hypothesized seven-factor model did not produce an adequate fit to the sample data. There were 13 items with double-cross loadings and/or factor loadings lower than .35. Of these questionable items, three items were from the winning mindset factor, three items from attention, three items from the physical health factor, two items from combat breathing, and two items from the self-talk factor. Subsequently, these questionable items were removed. Additionally, two items initially attributed to winning mindset were moved to the attention management factor because of high correlation between items. Finally, we performed the EFA analysis with varimax orthogonal rotations once more. The number of factors were specified to six. The results revealed that all of six factors had eigenvalues over Kaiser's criterion of 1 (1.06-6.96), and accounted for 49.36% of the variance. Additionally the factor loadings for the items ranged from .39 to .95 (see Table 3).

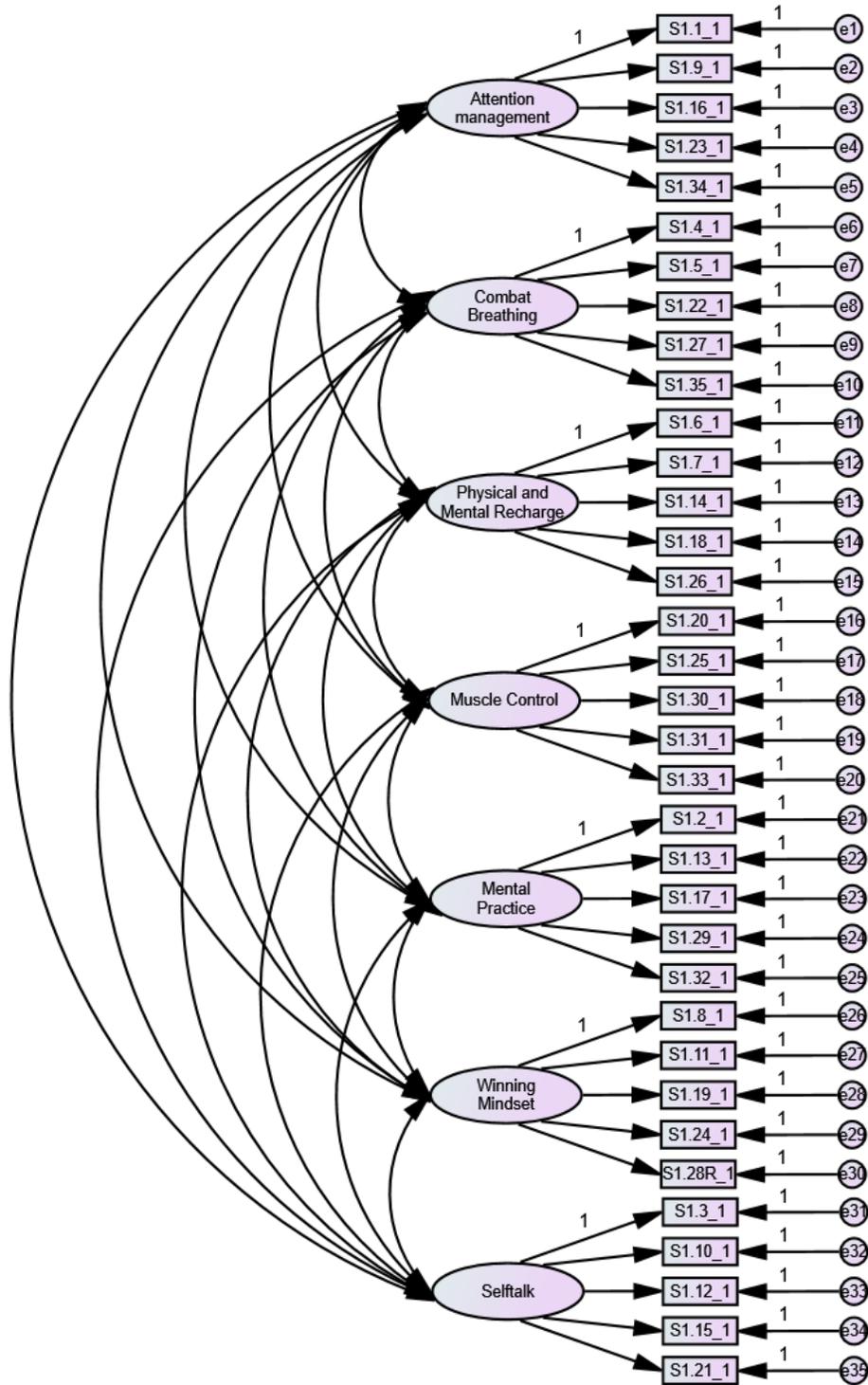


Figure 1. Initial seven-factor model

Table 3. PSI-LE items retained after EFA with Cronbach alphas for each subscale and factor loadings for each item

Subscale and Items	Factor Loading	Cronbach Alpha
Combat Breathing Items		.77
1. When the pressure is on, I actively control my breathing to focus	.47	
2. I utilize combat breathing when in a tense situation at home	.60	
3. When I need to focus, I concentrate on slowing down my breathing	.77	
Muscle Control Items		.72
1. I practice controlling muscle tension	.67	
2. If I'm feeling tense, I stretch to loosen up	.50	
3. When I observe a "death grip" on the steering wheel, I tap my fingers and stretch my hands in order to focus and relax	.41	
4. I pay attention to when I'm feeling tense and stiff	.56	
5. To maintain my situational awareness, I move my head from side to side.	.42	
Self-Talk Items		.82
1. I often talk myself through difficult situations	.71	
2. I often talk myself through tough situations by focusing on what I need to do	.75	
3. I talk to myself to help my police performance	.70	
Mental Practice Items		.83
1. I mentally rehearse my response to potential scenarios	.70	
2. I mentally practice my tactical skills	.60	
3. I mentally practice for critical situations	.71	
4. Before a call, I think through potential scenarios and options	.61	
5. I deliberately reflect on past calls to improve future performance	.47	
Attention Management Items		.62
1. When I experience negativity, I focus on what I can control	.41	
2. I focus on what's important now	.39	
3. I control my focus to maintain situational awareness during my shift or on a call	.53	
4. I notice when I'm not focused	.51	
Physical and Mental Recharge Items		.66
1. I set specific goals for my fitness level (fitness)	.95	
2. I eat healthy and limit my intake of "junk food"	.46	

5) Refinement of Inventory

The PSI-LE was intended to measure seven factors aligning to the PRO mental skillsets. Based on the initial psychometric properties of the PSI-LE, only 6 factors emerged from the exploratory factor analysis. Specifically, items pertaining to the mindset factor tended to be conflated with items from the attention management factor. Given that these two PRO topics

both consist of controlling one's thoughts, it is not surprisingly that there was not a clear separation in factor loadings between these two domains.

While being identified as a unique factor, the physical and mental recharge skillset contained only two items with acceptable psychometric properties. Thus, in an attempt to refine the PSI-LE in order to more clearly delineate between the attention management and mindset factor, along with establishing a more robust physical and mental recharge item pool, additional items were created for the inventory. Drawing from the initial item pool created in stage two of the inventory development process, seven items were added to supplement the existing PSI-LE item pool. The following items were added for both the mindset and physical and mental recharge factors:

Winning Mindset Items

1. I remind myself the reason for why I do my job to keep me motivated and driven.
2. I often focus on what I am thankful for in my life.

Physical and Mental Recharge Items

1. I used fewer than five alcoholic drinks per week.
2. I make plans to get enough exercise per week.
3. I actively engage in hobbies outside of the department for stress relief.
4. I am planning for my retirement.
5. I drink more than three cups or glasses of caffeinated beverages per day.

6) PSI-LE Administration

The revised PSI-LE, including the additional items added during step 5, was administered to 576 officers as part of annual in-service training. Officer included in this sample did not overlap with officers from the previous sample. Participant demographics are presented in Table 4.

Confirmatory factor analysis (CFA) was employed to examine the construct validity of the modified seven-factor model in sample two. Multiple fit indices including the chi-square to degrees of freedom ratio (χ^2/df), the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the goodness of fit index (GFI), and the root mean square error of approximation (RMSEA) were used to evaluate goodness of fit of the seven-factor model. Specifically, the criteria for acceptable fit were considered as values of χ^2/df less than 3.0 (McIver & Carmines 1981), CFI, TLI, and GFI values exceeding .90 (Hu & Bentler, 1995), and RMSEA values less than .05 were considered as a close fit, and values between .05 and .08 considered as a marginal fit of the model (Browne & Cudeck, 1993). Data were analyzed using AMOS 5.0, and the maximum likelihood method was employed to derive parameter estimates in the modified seven-factor model.

Table 4. Administration sample characteristics (Total Sample $N = 576$)

	<i>f</i>	%
Gender		
Male	475	82.5
Female	75	13
Race/Ethnicity		
White(non-Hispanic)	203	35.2
African American	30	5.2
Latino/Hispanic	314	54.5
Asian	4	.7
Other	16	2.7
Rank		
Patrol	416	72.2
Detective	141	24.5
Sergeant	2	.3
Other	14	2.5
Age		
22-32	198	33.6
33-43	183	33.2
44+	189	33
Years in Law Enforcement		
0-5	192	34.8

6-14	189	32.0
15+	189	33.0
	<i>M</i>	<i>SD</i>
Age	38.07	10.24
Years in Law Enforcement	11.38	8.79

In addition to model fit, Cronbach's alpha coefficients were used to examine the internal consistency of test scores produced by the PSI-LE. Traditionally, internal consistency is deemed acceptable if Cronbach alpha values are greater than .70, but some statisticians (e.g., Aron, Aron, & Coups, 2005; Kline, 1999) note that when dealing with psychological factors, Cronbach alpha coefficients less than .70 might be expected because of the diversity of the constructs being measured.

The CFA revealed that the seven-factor model represented an adequate fit to the sample data. The χ^2/df was found to be less than three at 2.54, which is indicative of good fit. Also, multiple indexes (CFI = .92, GFI = .92, TLI = .91, and RMSEA = .05) met the criterion established by Hu and Bentler (1995) indicating an adequate fit for the seven-factor model. Additionally, all standardized factor loadings were significant and ranged in size from .47 to .88 (see Table 5), indicating that all the items were strong indicators of the factors they were hypothesized to measure. Cronbach's alpha coefficients for the attention management, combat breathing, winning mindset, muscle control, mental practice, physical recharge, and self-talk were .65, .79, .72, .69, .83, .79, and .81, respectively, which indicated the scores produced by the PSI-LE had marginally acceptable internal consistency.

Table 5. PSI-LE items retained after CFA with Cronbach alphas for each subscale and factor loadings for each item

Subscale and Items	Factor Loading	Cronbach Alpha
Combat Breathing Items		.79
1. When the pressure is on, I actively control my breathing to focus	.87	
2. I utilize combat breathing when in a tense situation at home	.62	
3. When I need to focus, I concentrate on slowing down my breathing	.74	
Muscle Control Items		.69
1. I practice controlling muscle tension	.64	
2. If I'm feeling tense, I stretch to loosen up	.56	
3. When I observe a "death grip" on the steering wheel, I tap my fingers and stretch my hands in order to focus and relax	.47	
4. I pay attention to when I'm feeling tense and stiff	.67	
5. To maintain my situational awareness, I move my head from side to side.	.48	
Self-Talk Items		.81
1. I often talk myself through difficult situations	.82	
2. I often talk myself through tough situations by focusing on what I need to do	.73	
3. I talk to myself to help my police performance	.75	
Mental Practice Items		.83
1. I mentally rehearse my response to potential scenarios	.80	
2. I mentally practice my tactical skills	.73	
3. I mentally practice for critical situations	.77	
4. Before a call, I think through potential scenarios and options	.69	
5. I deliberately reflect on past calls to improve future performance	.50	
Attention Management Items		.65
1. When I experience negativity, I focus on what I can control	.54	
2. I focus on what's important now	.52	
3. I control my focus to maintain situational awareness during my shift or on a call	.65	
4. I notice when I'm not focused	.56	
Physical Recharge Items		.79
1. I set specific goals for my fitness level (fitness)	.88	
2. I eat healthy and limit my intake of "junk food"	.55	
3. I make plans to get enough exercise per week.	.84	
Winning Mindset		.72
1. I often reflect on my purpose for being a police officer.	.72	
2. I remind myself the reason for why I do my job to help keep me motivated and driven	.78	

Discussion

Based on an initial administration of the inventory, and a subsequent exploratory factory analysis, results indicated that the PSI-LE yielded a six-factor model solution. Closer inspection

of the six factors revealed that the initial inventory did not adequately distinguish between attention management and winning mindset, with items from each domain cross loading onto a single factor. This perhaps is not surprising given that attention management teaches strategies to “maintain situational awareness and concentration”, while winning mindset emphasis “strategies for controlling negative thoughts, maintaining focus on aspects that are within one’s control, and maintaining clarity of purpose.” Largely, both topics concern controlling one’s thoughts, attention, and focus. Therefore, while the two topics may be treated as distinct within the PRO curriculum, it is likely that the two topics are largely taping into the same underlying construct, namely attentional control. The only items associated with winning mindset that did not load onto the attention management factor pertained to maintaining clarity of purpose, which may be distinct from one’s ability to maintain attentional focus.

Furthermore, the initial exploratory factor analysis revealed that only three items sufficiently loaded onto the mental and physical recharge factor. Again, while this topic is considered as a single curriculum topic within PRO, it is likely that the underlying latent construct representing strategies for mental and physical wellbeing is reflected by separate distinct factors (e.g., different factors for the physical and mental components). Given these initial shortcomings of the PSI-LE, a revised version of the inventory was developed in order to better differentiate attention management (i.e., controlling one’s focus and attention) from winning mindset (i.e., maintaining perspective of one’s purpose) and to explore the potential for mental and physical recharge items to load onto separate factors.

Results of the revised PSI-LE resulted in an improved seven-factor solution with acceptable psychometric properties. Moreover, the revised PSI-LE successfully distinguished between attention management and winning mindset. With respect to the mental and physical

recharge subscale, examination of item content revealed that only behaviors reflecting physical recharge successful loaded onto the factor. As such, the factor was renamed to physical recharge, as the PSI-LE was not able to gauge the use of psychological skills related to mental recharge.

PSI-LE AND OFFICERS' USE OF PRO SKILLS

A fundamental aim of this project was to develop an inventory to gauge the use of mental skills associated with the PRO psychological skills training program. In doing so, the inventory was designed to provide scores for each mental skill domain, as well as an overall total score representing general use of all PRO skills. These scores can be generated to provide department level and/or individual level reports reflecting which PRO skillsets are most and least utilized. These reports are important for providing programmatic feedback regarding which content and curriculum areas may need continued support and training. Thus, providers of PRO training can utilize these scores to continue to refine program implementation.

Data Analyses

Preliminary results from the PSI-LE subscales are reported using general descriptive statistics (*M* and *SD*). To determine whether significant differences existed in the utilization of each of the seven subscales, a repeated measures analysis of variance (RM ANOVA) was performed with mean scores for each subscale as a within-subjects factor. Additionally, separate analyses of variance (ANOVA) were performed to explore whether significant differences existed in the overall combined PSI-LE score (i.e., TotalPRO) with respect to various demographic groups (e.g., gender, age, rank, and years in law enforcement).

Results and Discussion

Table 6 presents the means and standard deviations for each mental skillset and total PRO score broken down across gender, rank, age, and years in law enforcement. Based on the overall sample, the scores¹ for each mental skill area ranked most to least used are as follows:

1. Mental Practice (M = 4.00, SD = .65)
2. Attention Management (M = 3.98, SD = .50)
3. Combat Breathing (M = 3.59, SD = .85)
4. Physical Recharge (M = 3.54, SD = .87)
5. Self-Talk (M = 3.48, SD .85)
6. Winning Mindset (M = 3.46, SD = .89)
7. Muscle Control (M = 3.27, SD = .66)

A repeated measures analysis of variance (RM ANOVA) was performed to determine whether significant differences existed between scores on the seven subscales. Results of the RM ANOVA confirmed that scores on the various subscales differed significantly, $F(6, 3450) = 173.76, p < .001, \eta_p^2 = .23$. Bonferroni adjusted post hoc tests indicated that all subscales were statistically different (p 's < .001) from one another except between attention management – mental practice, combat breathing – physical recharge, physical recharge – self-talk, and self-talk – mindset. From these results, it is clear that some PRO skillsets (e.g., mental practice and attention management) are used more often than other skillsets (e.g., muscle control, winning mindset, and self-talk). These findings are beneficial for providing feedback on areas for programmatic development. For example, future implementations of PRO may consider how to encourage and highlight the value of mental skill domains that are underutilized (e.g., mindset, muscle control, and self-talk). Research from the domain of sport psychology has repeatedly demonstrated the benefit of utilizing mental skills relating to arousal control (e.g., breathing and muscle control) and self-talk (Hanton, Mellalieu, & Williams, 2015). Thus emphasizing these

¹ Scores reflect the extent to which officers utilize the mental skills ranging from 1 “Never” to 5 “Almost Always”.

mental skill domains are important and likely to benefit law enforcement personnel (Le Scanff & Taugis 2002; Mînjină, 2015).

Table 6. General descriptives (*Mean* and (*SD*)) for each PSI-LE subscale

	Attention	Combat Breathing	Mindset	Muscle Control	Mental Practice	Physical Recharge	Self-Talk	TotalPRO
Gender								
Male	3.96 (.50)	3.58 (.84)	3.44 (.89)	3.26 (.67)	4.00 (.65)	3.50 (.89)	3.45 (.84)	25.20 (3.56)
Female	4.05 (.49)	3.65 (.89)	3.62 (.91)	3.36 (.62)	4.01 (.60)	3.71 (.77)	3.75 (.77)	26.15 (3.52)
Rank								
Patrol	4.00 (.50)	3.66 (.83)	3.50 (.91)	3.32 (.67)	4.04 (.64)	3.53 (.88)	3.52 (.86)	25.58 (3.52)
Detective	3.90 (.50)	3.38 (.86)	3.34 (.86)	3.12 (.65)	3.87 (.67)	3.55 (.85)	3.38 (.84)	24.53 (3.56)
Other	3.93 (.45)	3.61 (.92)	3.37 (.72)	3.33 (.55)	3.91 (.49)	3.65 (.76)	3.39 (.83)	25.19 (3.41)
Age								
22-32	4.00(.50)	3.66 (.83)	3.50 (.91)	3.32 (.67)	4.04 (.56)	3.53 (.88)	3.52 (.86)	25.58 (3.52)
33-43	3.90 (.50)	3.38 (.86)	3.34 (.86)	3.12 (.65)	3.87 (.67)	3.55 (.85)	3.38 (.84)	24.54 (3.56)
44+	3.93 (.45)	3.61 (.92)	3.37 (.72)	3.33 (.66)	3.92 (.49)	3.65 (.76)	3.39 (.83)	25.19 (3.41)
Years in Law Enforcement								
0-5	4.07 (.50)	3.73 (.80)	3.69 (.84)	3.45 (.65)	4.17 (.57)	3.77 (.78)	3.62 (.84)	26.49 (3.14)
6-14	3.94 (.45)	3.62 (.85)	3.38 (.90)	3.23 (.63)	3.97 (.62)	3.45 (.94)	3.45 (.84)	25.04 (3.44)
15+	3.91 (.53)	3.43 (.85)	3.32 (.89)	3.13 (.67)	3.86 (.70)	3.39 (.85)	3.39 (.85)	24.42 (3.71)
Sample Total	3.98 (.50)	3.59 (.85)	3.46 (.89)	3.27 (.66)	4.00 (.64)	3.54 (.87)	3.48 (.85)	25.32 (3.55)

Interestingly, the extent to which PRO skills were utilized varied by demographic group (see Table 6). For example, female officers reported significantly higher overall total scores (i.e., TotalPRO) ($F(1, 548) = 4.71, p = .031$) compared to male officers. Additionally, the use of mental skills varied by rank, age, and years in law enforcement. Patrol officers scored significantly higher on overall skill use (i.e., TotalPRO) compared to detectives, $F(1, 555) = 9.30, p = .002$. TotalPRO scores also differed by age group ($F(2, 569) = 15.25, p < .001$), with Tukey post hoc tests indicating that officers ranging in age between 22-32 reporting significantly higher use of PRO skills than officers ranging in age from 33-43 and 44+, $p = .001$ and $p < .001$, respectively. Likewise, the use of PRO skills also varied significantly with years in law enforcement ($F(2, 569) = 18.30, p < .001$). With a general trend towards lower skill use with increasing number of years in law enforcement, Tukey post hoc tests revealed that officers who

had been in law enforcement from 0-5 years showed significantly higher use of PRO skills compared to officers who had been in the service from 6-14 years and 15+ years, both p 's < .001.

The trends in the use of PRO mental skills is such that less utilization of PRO skills were observed with one's increasing age, the longer one was on the force, and with increasing rank. Given that these three characteristics are closely correlated, r 's ranging from .322 to .860 in the current sample, this observed trend is likely due to a singular underlying cause. The most likely explanation is that officers with less than 5 years of service were also the ones who were most likely to have received PRO training as part of their academy curriculum. PRO was first introduced to cadets in 2013, and consisted of eight to ten hours of didactic style lectures spread out over the first month of academy training. The skills taught in PRO were subsequently reinforced and embedded throughout their tactics, driving, and firearms training. As such, those who received PRO education during academy training may have a better understanding and integration of PRO tactics than other officers who only received PRO as part of in-service training². Importantly, these findings highlight the benefit of implementing mental skills training as part of academy curriculum. Relative to academy training of PRO, in-service training of PRO may be less effective. However, more research is needed to validate this contention.

In addition to the mean scores for each mental skill domain, assessment of individual item scores may provide more precise programmatic feedback regarding the use of specific behaviors taught via PRO. Following are the top 5 and bottom 5 ranked items reflecting specific use of PRO strategies.

Top 5 highest scored items

1. I control my focus to maintain situational awareness during my shift or on a call. (Attention Management, $M = 4.29$).
2. Before a call I think through potential scenarios and options. (Mental Practice, $M = 4.29$).

² In-service training of PRO consists of 5 hours of didactic lectures.

3. I deliberately reflect on past call to improve future performance. (Mental Practice, M = 4.20).
4. I focus on what's important now. (Attention Management, M = 4.11).
5. I mentally practice my tactical skills. (Mental Practice, M = 3.96).

Top 5 lowest scored items

1. I practice controlling muscle tension. (Muscle Control, M = 3.02)
2. When I observe a "death grip" on the steering wheel, I tap my fingers and stretch my hands in order to focus and relax. (Muscle Control, M = 3.06).
3. I eat healthy and limit my intake of "junk food". (Physical Recharge, M = 3.29).
4. I talk to myself to help my police performance. (Self-talk, M = 3.33).
5. To maintain my situational awareness, I move my head from side to side. (Muscle Control, M = 3.35)

From these item rankings, it is clear that officers are highly utilizing specific strategies related to the domains of attention management and mental practice. However, these ranking suggests that additional attention during training should be given to the use and importance of specific strategies related to self-talk, winning mindset, and muscle control.

ASSOCIATION BETWEEN PSI-LE AND PSYCHOLOGICAL HEALTH AND WELLBEING OUTCOMES

In addition to quantifying the extent to which officers utilize the mental skills learned during PRO training, a second primary goal was to assess whether the use of those skills is linked to better psychological health and wellbeing outcomes. A growing body of research suggests that implementing PST programs for officers can result in a number of positive benefits such as improved judgement and decision-making (McCraty & Atkinson, 2012), improved memory recall (Page, Asken, Zwemer, & Guido, 2015), reduced sleep disturbances (Arnetz et al., 2013; Christopher et al., 2013), reduced burnout, aggression, stress (Christopher et al., 2013), and improved mental wellbeing and resiliency (Arnetz et al., 2013). However, to date, these studies have only looked at overall programmatic impact, and not more specifically at the direct relationship between the use of mental skills and their subsequent influence on psychological health and wellbeing outcomes. Consequently, the present project performed an exploratory

analysis on the extent to which the use of PRO mental skills would predict measures of psychology health, wellbeing, resiliency, and job satisfaction. It was hypothesized that higher use of mental skills would lead to better overall psychological health and wellbeing outcomes.

Method

Participants and Procedures

Participants consisted of 576 active duty police officers from the San Antonio Police Department. Participant demographics are presented in Table 2. Data were collected from officers during annual in-service police training. Upon administering and gathering informed consent, it was stressed that participation was voluntary and that responses would remain anonymous. Furthermore, it was explicitly stated that responses to the inventory would not be used for individual job performance evaluations. Survey packets were distributed and collected by in-service training officers. All ethical procedures recommended by the university's institutional review board were strictly followed.

Measures

Psychological skills inventory. The revised³ *Psychological Skills Inventory for Law Enforcement* (PSI-LE) was utilized, which consisted of self-report items designed to assess the extent to which law enforcement officers utilize PRO psychological skills (see Appendix A). The inventory contains seven subscales that gauge the use of mental skills associated with attention management, winning mindset, self-talk, mental practice, muscle control, combat breathing, and physical recharge. The inventory produces domain scores for each subscale, as well as, an overall mental skill use score. Preliminary psychometric properties indicate acceptable reliabilities ranging from $\alpha=.65$ to $\alpha=.83$ and factorial validity.

³ The revised version of the PSI-LE from Stage 6 of development was used in assessing officer's reported use of mental skills.

Psychological health and resiliency measures. The *Anxiety Depression Distress Inventory – 27* (ADDI-27; Osman et al., 2011) is a 27-item survey, which contains three subscales that measure positive affect, somatic anxiety, and general distress (See Appendix B). The ADDI-27 was developed as a short version of the Mood and Anxiety Symptom Questionnaire-90 (Watson & Clark, 1991), and assesses domains relevant to the tripartite model of affect. The positive affect subscale assesses the frequency in which individuals experience positive emotions such as feelings of happiness, satisfaction, confidence, and pride. The general distress subscale assesses the extent to which individuals experience psychological distress such as feelings of worthlessness, disappointment, and hopelessness. The somatic anxiety subscale reflects the extent to which individuals experience physiological correlates of anxiety such as dizziness, dry mouth, and trouble swallowing. The ADDI-27 has been validated against other measures of anxiety and depression, and has demonstrated good reliability ($\alpha \geq .80$). Previous research has demonstrated that officer mental toughness is significantly correlated with each of the three subscales (Smith, Wolfe-Clark, & Bryan, 2016).

The *Connor-Davidson Resilience Scale* (CD-RISC-2; Connor & Davidson, 2003) is a shortened version of the original 25 item CD-RISC, and was developed to measure “bounce-back” and adaptability (See Appendix C). For the CD-RISC-2, scores range from 0-8, with respondents self-reporting on a 5-point Likert scale ranging from 1 (not true at all) to 5 (true nearly all the time). The CD-RISC has demonstrated excellent internal consistency, factorial validity, and expected correlations with other constructs in various populations including law enforcement officers.

Job satisfaction. The *Single-Item Measure of Job Satisfaction* (Dolbier, Webster, McCalister, Mallons, & Steinhardt, 2005) is a single item that assess job satisfaction (see

Appendix D). A single-item measure is often more favorable due to its ease of interpretability and speed of administration (Dolbier et al., 2005). The item asks respondents to rate the following question, “Taking everything into consideration, how do you feel about your job as a whole?” on a scale ranging from 1 (extremely dissatisfied) to 7 (extremely satisfied). The single item measure demonstrated acceptable reliability ranging from $\alpha \geq .73$ to $\alpha \geq .90$, along with exhibiting acceptable concurrent, convergent, and divergent construct validity.

General health and quality of life. Two items from the *World Health Organization Quality of Life – BREF* (WHOQOL-BREF; The WHOQOL Group, 1998) measure were utilized to provide a brief assessment of general health and quality of life (see Appendix E). The first question asks about an individual’s overall perception of quality of life, and the second asks about an individual’s overall perception of their health. Utilizing just these two items was done in order to reduce the overall length and time to complete the survey packet. The WHOQOL-BREF has demonstrated excellent reliability. The internal consistency of the scale for each domain range from .66 to .84 (The WHOQOL Group, 1998).

Data Analyses

Data were examined to investigate missing values and evaluate assumptions of multivariate analysis. Missing values (less than 5% in the current sample) were replaced with the mean for that variable. Pearson’s correlation coefficients were calculated to assess the degree of relationship between each PSI-LE domain score and the psychological health and wellbeing outcomes. Correlations were classified as small=.10, moderate=.30, and large=.50 (see Cohen, 1992). Following, a series of stepwise multiple regression analyses were conducted for each psychological health and wellbeing outcome to determine whether the PSI-LE domain scores act as significant predictors. Due to the exploratory nature of these analyses and a desire to build a

model of the relationship between predictor and outcome variables, it was considered sufficient to use stepwise techniques (Agresti & Finaley, 1986; Field, 2005; Menard, 1995).

Preliminary analyses were performed prior to conducting the regression analyses to ensure that no violations to the assumption of normality, linearity, and multicollinearity were evident. Multicollinearity of predictor variables (i.e., PSI-LE subscale scores) were examined based on the variance inflation factor and correlation matrix of predictor variables (all predictors correlated $\leq .80$). Outliers were assessed using Mahalanobis distance and Cook's statistic, and removed when appropriate. Significance level was set at $p = .05$. The statistical significance level of the regression analyses was not adjusted for multiplicity, given the exploratory approach adopted in these analyses.

Results

General Findings

Table 7 presents the pairwise correlations between subscales of the PSI-LE, including the overall TotalPRO score, with each subscale from the ADDI-27, CD-RISC-2, Single-Item Measure of Job Satisfaction, and the quality of life and general health outcomes of the WHOQOL-BREF. With respect to the three dimension of the ADDI-27 (positive affect, distress, and somatic anxiety), overall use of PRO mental skills (i.e., TotalPRO score) had a moderate positive correlation to positive affect ($r = .371, p < .001$), and a small negative correlation to distress ($r = -.084, p = .04$). These correlations imply that individuals who utilize more PRO mental skills are more likely to display positive emotions and feelings of happiness, and fewer signs of distress associated with anxiety and depression. Feelings of somatic anxiety was not correlated with overall use of PRO skills ($p > .05$).

Table 7. Pairwise correlations between PSI-LE subscales (rows) and outcome variables (columns)

	Positive Affect	Distress	Somatic Anxiety	Resiliency	Job Satisfaction	Health Satisfaction	Quality of Life
Attention	.368**	-.215**	-.105*	.412**	.211**	.197**	.256**
Combat Breathing	.189**	-.008	.028	.201**	.118**	.142**	.087*
Mindset	.258**	.039	.029	.178**	.183**	.088*	.103*
Muscle Control	.195**	-.020	.061	.236**	.075	.105*	.078
Mental Practice	.258**	-.020	.050	.342**	.121**	.140**	.172**
Recharge	.253**	-.140**	-.147**	.301**	.122**	.543**	.375**
Self-talk	.220**	.016	.069	.153**	.102*	.068	.048
TotalPRO	.360**	-.060	.000	.367**	.194**	.276**	.232**

* $p < .05$ ** $p < .001$

Scores on TotalPRO had small-to-moderate correlations with mental resiliency ($r = .384$, $p < .001$), job satisfaction ($r = .196$, $p < .001$), health satisfaction ($r = .295$, $p < .001$), and overall quality of life ($r = .254$, $p < .001$). Importantly, these findings suggest that, at least to a small degree, use of PRO skills is related to an improved ability to bounce back and adapt to stressful situations, and greater satisfaction with one's job, health, and overall quality of life.

Regression Analyses

To better account for the relationship between PRO mental skills and psychological health and wellbeing, separate stepwise multiple regressions analyses were performed to determine whether PSI-LE subscales would predict scores on the ADDI-27, CD-RISC-2, Single-Item Measure of Job Satisfaction, and the quality of life and general health outcomes of the WHOQOL-BREF. The results of the stepwise multiple regression analyses with PSI-LE subscales as predictors for each outcome variable is displayed in Table 8.

Table 8. Summary of stepwise multiple regression analyses using PSI-LE subscales as predictors of psychological health and wellbeing outcomes

	<i>B</i>	<i>SE</i>	β	<i>p</i> -value
ADDI-27 – Positive Affect; $R^2=.181$;				
$F=41.54$; $p<.001$				
(Constant)	10.988	1.903		<.001
Attention	3.477	.515	.286	<.001
Mindset	.957	.276	.141	.001
Recharge	.931	.282	.134	.001
ADDI-27 – General Distress; $R^2=.101$;				
$F=12.47$; $p<.001$				
(Constant)	21.740	1.626		<.001
Attention	-2.889	.454	-.305	<.001
Self-talk	.534	.260	.096	.040
Mental Practice	.863	.374	.117	.021
Recharge	-.626	.235	-.115	.008
Mindset	.679	.242	.129	.005
ADDI-27 – Somatic Anxiety; $R^2=.058$;				
$F=8.684$; $p<.001$				
(Constant)	16.152	1.712		<.001
Attention	-1.623	.483	-.165	.001
Self-talk	.603	.265	.105	.023
Mental Practice	1.191	.394	.153	.003
Recharge	-.881	.249	-.156	<.001
CD-RISC-2 – Resiliency; $R^2=.267$;				
$F=67.756$; $p<.001$				
(Constant)	3.215	.370		<.001
Attention	.797	.101	.332	<.001
Mental Practice	.303	.077	.165	<.001
Recharge	.217	.052	.162	<.001
Job Satisfaction; $R^2=.080$;				
$F=24.425$; $p<.001$				
(Constant)	3.597	.363		<.001
Attention	.410	.094	.187	<.001
Mindset	.199	.052	.163	<.001
Health Satisfaction; $R^2=.298$;				
$F=242.660$; $p<.001$				
(Constant)	1.624	.129		<.001
Recharge	.549	.035	.545	<.001
Quality of Life; $R^2=.166$;				
$F=57.032$; $p<.001$				
(Constant)	2.516	.212		<.001
Recharge	.243	.030	.332	<.001
Attention	.208	.055	.153	<.001

Positive affect. The stepwise multiple regression indicated that attention management, mindset, and physical recharge subscales were significant predictors of positive affect as measured by the ADDI-27, $F(3, 565) = 41.53, p < .001$, (see Table 8). These three PSI-LE subscales accounted for 18.1% of the variance in positive affect. Attention management was the most important factor in accounting for the variance in positive affect. For every one point increase in the use of attention management skills, officer's score on positive affect increased by 3.48 points. For every one point increase in use of mindset skills, officer's exhibited a .96 point increase in ratings of positive affect. Finally, for every one point increase in the use of recharge behaviors resulted in a .93 point increase in positive affect. Taken together, officers who utilize skills that support situational awareness, focus on controllables, reflection on purpose, and efforts to maintain physical health experience greater positive emotions such as happiness, accomplishment, and satisfaction.

General distress. The stepwise multiple regression found that attention management, self-talk, mental practice, mindset, and physical recharge were significant predictors accounting for 10.1% of the variance in general distress, $F(5, 558) = 12.473, p < .001$, (see Table 8). Attention management accounted for the largest influence on feelings of distress, with a one point increase on the attention management subscale resulting in a -2.89 decrease in feelings of distress ($p < .001$). Likewise, higher values on the recharge subscale resulted in lower levels of distress, although only marginally (-.626 decrease in feelings of distress for every one point increase on the recharge subscale). Interestingly, self-talk, mental practice, and mindset were positively related to feelings of distress when controlling for the other predictor variables. While only having a small influence on feelings of distress overall, for every one standard deviation

increase in self-talk, mental practice, and mindset increased feelings of distress by .096, .117, & .129 standard deviations, respectively.

Somatic Anxiety. Four significant predictors were identified by the stepwise regression analysis, but only accounted for 5.8% of the total variance in somatic anxiety scores, $F(4, 566) = 8.684, p < .001$, (see Table 8). Like general distress, higher values on both attention management and physical recharge resulted in lower levels of somatic anxiety. For everyone one point increase in attention management and physical recharge scores resulted in decreased ratings of somatic anxiety by -1.623 and -.881 points, respectively. In contrast, mental practice and self-talk were both positively related to somatic anxiety. For every one point increase in mental practice and self-talk scores resulted in a 1.191 and .603 point increase in somatic anxiety scores.

Resiliency. The stepwise multiple regression indicated that attention management, mental practice, and physical recharge accounted for 26.7% of the variance within in officer's resiliency scores, $F(3, 559) = 67.756, p < .001$, (see Table 8). Attention management was the most influential predictor in the model with every one point increase resulting in a .797 point increase in resiliency scores. Physical recharge also had a significant positive relationship with resiliency, with every one point increase resulting in a .217 point increase in resiliency. Finally, for every one point increase in mental practice, resiliency scores increased by .303 points. Together these findings indicate that a significant portion of an officer's resiliency is linked to the ability to manage one's situational awareness and focus, physical fitness, and utilization of mental imagery.

Job satisfaction. The stepwise regression analysis indicated that only 8.0% of the variance in job satisfaction ratings were accounted for by scores on the attention management and mindset subscales, $F(3, 559) = 24.425, p < .001$, (see Table 8). Both predictor variables were

positively related to job satisfaction with every one point increase in attention and mindset resulting in a .410 and .199 point increase in job satisfaction ratings, respectively.

Health satisfaction. The stepwise multiple regression indicated that physical recharge was a significant predictors of health satisfaction, $F(3, 572) = 43.53, p < .001$, accounting for 29.8% of the observed variance (see Table 8). As one might expect, individuals who engage in activities to maintain physical wellbeing were also more satisfied overall with their health. For every one point increase on the physical recharge subscale, officers indicated a .549 increase in health satisfaction.

Quality of life. Two significant predictors were identified by the stepwise regression analysis, and accounted for 16.6% of the total variance in quality of life scores, $F(4, 567) = 8.816, p < .001$, (see Table 8). Specifically, both physical recharge and attention management were positively related to satisfaction ratings of one's quality of life. Physical recharge represented the predictor with the largest influence on quality of life ratings, with every one point increase resulting in a .243 point increase in quality of life scores. Similarly, for every one point increase in attention management scores, quality of life scores increased by .208 points. As such, strategies to regulate physical fitness and attentional control were shown to be important for influencing an officer's overall perception of quality of life.

Discussion

A primary aim of the current project was to determine the extent to which mental skills taught via PRO training were related to important psychological health and wellbeing outcomes. To date, the majority of research examining the benefits of PST programs in law enforcement only look at overall programmatic impact (e.g., Arnetz et al., 2013; Christopher et al., 2018; Ramey, et al., 2017), and not at the specific relationship between the use of individual mental

skills and certain psychological and behavioral outcomes. Such micro level analyses are important for determining which mental skillsets contribute to overall program effectiveness.

Review of Table 8 highlights that the majority of the PSI-LE mental skill domains are related at least marginally to the psychological health and wellbeing outcomes assessed in the current study. Moreover, the TotalPRO score, which is an overall measure of the use of PRO skills, shows significant correlations to every measured outcome except somatic anxiety. These relationships are important, because it demonstrates that the use of the specific strategies taught via PRO are related to important psychological health and wellbeing outcomes. Participants who utilize PRO skills more so tend to have higher levels of positive affect, resiliency, job satisfaction, health satisfaction, and overall quality of life. Furthermore, officers who utilize PRO skills, tend to have lower levels of general distress.

In order to determine which PSI-LE subscales are most linked to the measured outcomes, while controlling for the shared variance amongst the subscales, stepwise multiple regressions were performed. Overall, the regression analyses were able to significantly account for variance in all outcome measures ranging from 6% to 30%. The PSI-LE subscales were most successful in accounting for the variance in health satisfaction, resiliency, and positive affect. These results align with findings from past studies that have shown that resiliency training programs can improve general health and mental wellbeing outcomes (Arntez et al., 2013), as well as improved mental awareness and reduced burnout and organizational stress (Christopher et al., 2016, 2018).

Importantly, while previous studies on the effectiveness of PST programs have found important psychological health related benefits, these programs have had little to no effect on enhancing resiliency itself (e.g., Christopher et al., 2018; Ramey et al., 2017). However, in the current sample, it was found that PRO skills (attention management, mental practice, and

physical recharge) significantly predicted levels of resiliency, accounting for 26.1% of the variance. These findings highlight the importance of examining the impact of specific mental skills on psychological health outcomes rather than only examining the overall impact of PST programs as a whole.

Based on the current findings, psychological training programs seeking to improve mental resiliency should include training on situational awareness and focus, physical fitness, and utilization of mental imagery. These findings provide a potential explanation for the lack of results in previous studies that found no benefit for mental resiliency. In these prior studies (e.g., Christopher et al., 2018; Ramey et al., 2017), the psychological training programs focused on developing strategies for managing the physiological manifestations of stress, mindfulness, and decision-making. These mental skill sets are different to the ones identified in the current project as being linked to resiliency. As such, the lack of influence on resiliency found in previous studies is likely due to PST programs incorporating curriculum that is largely unrelated to the development of mental resiliency in officers.

While the current project found that the PSI-LE subscales were able to account for a portion of variance in all outcome measures, largely this variance was explained by the same few predictors. Together, attention management, physical recharge, and mental practice were significant predictors in almost every single outcome measure. This highlights the prominence that these mental skills hold in affecting change in a variety of important psychological health and wellbeing outcomes. Moreover, these mental skills have consistently been linked to improved performance within domains such as sports and academics (Gould et al., 2002; Orlick & Partington, 1988; Vealy & Greenleaf, 2010; Wine, 1971; Wulf, 2013). As such, it would be of

utmost importance that PST programs for law enforcement prioritize these mental skills as part of program curricula.

Important to note, that while factors such as mental practice explained variance in a number of the outcome variables (e.g., general distress, somatic anxiety, resiliency), increased use of mental practice did not always lead to better outcomes. For example, both mental practice and self-talk were found to be positively associated to general distress, and mental practice, self-talk, and mindset were found to be positively associated with somatic anxiety. That is, increased use of these mental skills were linked to higher levels of distress and somatic anxiety. This positive association to negative outcomes is likely due to the valence of the self-talk and mental practice used by the officers. Both self-talk and mental practice can be directed towards positive or negative outcomes. For example, officers can engage in negative self-talk directed towards worries and unwanted outcomes. Likewise, officers can mentally image unwanted or negative outcomes. Research shows that both negative self-talk and images of poor performance can harm performance and decrease feelings of self-confidence (Bandura, 1977; Beilock, Afremow, Rabe, & Carr, 2001; Hatzigeorgiadis & Biddle, 2008). Mindset can also be valenced in a negative manner if the reflection on one's purpose leaves one feeling unfulfilled. The PSI-LE gauges use of these skills rather than their particular valence. Thus, if these skills are used in an incorrect manner (i.e., negative valence), then it is likely that they would result in negative and unwanted outcomes. Given the importance of mental practice and self-talk, questionnaires examining the valence of these mental skills could be given alongside of the PSI-LE to ensure that the use of these skills is being correctly implemented.

Overall, our findings suggest that PRO skills, as measured by the PSI-LE, are generally associated with better psychological health and wellbeing outcomes. Moreover, our findings

indicate that certain PRO skillsets (e.g., Attention Management, Mental Practice) are more important for impacting change in psychological outcomes than other skillsets (e.g., Muscle Control, Combat Breathing). These findings highlight the importance of looking at the individual relationships between mental skills and psychological outcomes, rather than only looking at overall programmatic impact. This fact likely underlies the equivocal findings in prior research for the efficacy of PST programs in law enforcement (see Patterson et al., 2014 for a review). The curriculum utilized in psychological training programs have varied widely, and the extent to which the programs will have an impact on certain psychological, physical, and behavioral outcomes will be largely dependent on the specific strategies taught. As such, future research is needed to continue to clarify the relationship between certain mental skills and their associated psychological, physical, and behavior outcomes. With this clarification, the curriculum of future PST programs can be tailored to address the specific outcome needs of officers.

GENERAL DISCUSSION

The purpose of the present project was to develop a first-of-its-kind inventory to measure the use of psychological skills within a law enforcement population. Based on the PRO mental resiliency training program adopted by the San Antonio Police Department, the inventory measures utilization of seven distinct mental skill domains. The PSI-LE produces domain scores for each subscale, as well as a total score reflecting overall mental skill use. Development of such a tool is important for assessing the impact and efficacy of a psychological skills training (PST) program by determining 1) the extent to which officers utilize mental skills taught via training, and 2) whether the use of those skills is related to better psychological health and wellbeing. Gathering such information is indispensable for continued programmatic development and maintaining program acceptance and credibility. Therefore, in addition to development of

the PSI-LE, the current project sought to provide preliminary insight into the officer's use of PRO skills and their relationship to select psychological health and wellbeing outcomes.

Following, summaries of the main objectives and outcomes of the project are given along with insights and future recommendations.

PSI-LE Development

The PSI-LE was developed to align closely with the mental skills taught as part of the Performance, Recovery, and Optimization (PRO) training program. As such, inventory items were generated by a panel of law enforcement experts with knowledge of PRO curriculum. The generated items consisted of behaviors reflecting use of seven PRO mental skills areas: Attention Management, Combat Breathing, Muscle Control, Mental Practice, Winning Mindset, Self-talk, and Mental and Physical Recharge.

Following multiple administrations of the PSI-LE and subsequent analyses, a final 25-item inventory (see Appendix A) was created that assessed seven unique mental skill domains. Confirmatory factor analysis verified the acceptable psychometric properties of the final model fit (Cronbach alphas ranging from ranging from $\alpha=.66$ to $\alpha=.83$; CFI = .92, GFI = .92, TLI = .91, and RMSEA = .05). The seven mental skill subscales of the PSI-LE closely aligned to the original seven mental skill domains referenced in the PRO curriculum. However, two main differences emerged between the domains outlined by PRO and the final model of the PSI-LE.

First, an exploratory factor analysis indicated that the mental skills associated with attention management and winning mindset were largely accounted for by a single latent variable. Closer inspection of item content for these two domains revealed that they both largely reflect the ability to control one's focus and attention. In the final version of the PSI-LE, this ability (i.e., attentional control) is captured solely by the attention management subscale. In

contrast, the winning mindset subscale in the final version of the PSI-LE pertains solely to maintaining perspective on one's purpose and reason for being a police officer.

The second difference between PRO curriculum and the PSI-LE regards the mental and physical recharge subscale. In the final version of the PSI-LE, only items pertaining to physical recharge were retained. Items relating to the mental recharge component of this PRO topic did not have adequate psychometric properties, and thus were dropped from the inventory. While the mental and physical recharge skillset is taught as a single topic within PRO, it is likely reflecting skills related to different underlying abilities (i.e., mental and physical components). As such, the subscale in the PSI-LE was renamed to Physical Recharge reflecting only the content related to physical health and fitness.

Insights and Future Recommendations

The revised structure of the PSI-LE captures the use of a broad array of psychological skills that have traditionally been linked to PST programs and been suggested to benefit law enforcement personnel (Le Scanff & Taugis 2002; Mînjină, 2015; Taylor, 2018). However, it is not assumed that the variables assessed within the PSI-LE exhausts the entire domain of psychological skills that may contribute to improved psychological, physical, or behavioral outcomes.

While the PSI-LE captures the use of strategies to manage stress and arousal reduction (e.g., combat breathing, muscle control), the PSI-LE does not assess the use of strategies to mitigate against under arousal (e.g., lethargy). Just as too much physiological and psychological arousal may lead to poor performance, so too may a lack of arousal and excitement equally result in suboptimal performance (Landers & Arent, 2001). Consequently, a fundamental skill taught to many elite performers involves learning to get oneself “pumped up” and excited for an upcoming

competition (Williams & Harris, 2001). Such strategies to increase overall physical and psychological arousal may also be important for police work given the nature of shift work and long working hours.

Based on research from the field of sport psychology, a myriad of other psychological skills may also be important and relevant for law enforcement (Le Scanff & Taugis 2002; Mînjină, 2015; Williams & Krane, 2015). For example, strategies to enhance self-confidence may be beneficial for improving officer decision-making under stress, as well as tempering the physical and psychological effects of stress (McGrath, 1970; Weinberg & Gould, 2003). Similarly, learning strategies to reinterpret the physiological symptoms of stress (e.g., racing heart, increased breathing, etc.) as facilitative to performance rather than as a sign of one's inability to cope can help improve performance and reduce the harmful effects associated with chronic stress (e.g., increased cardiovascular risk; (Jamieson, Nock, & Mendes, 2012; Keller et al., 2012). Goal setting is an additional strategy that is often include in traditional PST programs for athletic populations given its impact on a number of other important psychological variables such as confidence, motivation, and focus (Gould, 2015). Finally, self-awareness is major psychological skill unaccounted for in the PSI-LE. This skill can be considered as primary above all others to the extent that an individual must be self-aware of one's physical and psychological state in order to recognize the need to utilize other mental strategies (Ravizza & Fifer, 2015).

Future revisions to the PSI-LE, or PRO curriculum in general, should consider broadening the spectrum of skills taught and assessed. Doing so would increase the likelihood of producing meaningful and positive impacts on officer psychological wellbeing and performance. While increasing the scope of the PSI-LE is an important future consideration, this aim must be carefully balanced with the need to keep the inventory brief and succinct as possible to increase

its utility for administration to law enforcement personnel. Therefore, it is advisable to continually reflect on the mental skills assessed via the PSI-LE and make modifications when advisable to assess only the most relevant of psychological skills.

Officers' Use of PRO Skills

One of the main purposes of the development of the PSI-LE was to be able to provide programmatic feedback to PST instructors regarding the impact and use of mental skills. Fundamentally, if a PST program is to have a beneficial influence on officers, it must effect change in the officers' behaviors and use of mental strategies. To this end, the PSI-LE can provide important programmatic feedback in two main ways: initial needs assessment and measure of program impact.

First, the PSI-LE can function as an assessment to gauge current psychological skill needs of officers. Given the limited time available to cover PRO curriculum during in-service training (typically 5 hours per year), it may be necessary to prioritize certain content that would be most beneficial. In this way, the PSI-LE could be administered to officers prior to in-service training to allow PRO instructors to identify officers' strengths and weaknesses with respect to use of PRO skills. From this feedback, PRO curriculum could be tailored directly to the needs of the officers. Moreover, in-service curriculum could be dynamic and targeted directly to the needs of the officers on a per group basis. Research suggests that the benefits of PST programs can dissipate in as little as three months following training, and that booster sessions would be important for maintaining program benefits (Christopher et al., 2018). To that end, being able to target the booster sessions (e.g., in-service training) to group and individual level needs could potentially increase the overall effectiveness of training.

A second main use of the PSI-LE could be in assessing overall impact of PST training on the use of psychological resiliency skills. More specifically, the PSI-LE could be administered as both a baseline measure and a post-training measure to ensure that PST training is resulting in increased mental skill use. Such assessment could be useful in gauging the effectiveness of PST training as part of academy curriculum. Furthermore, this feedback would aid PST instructors in determining which specific content areas of PST curriculum may need tailoring and further refinements.

Insights and Future Recommendations

In the current sample, significant differences emerged in the use of PRO skillsets. These differences underline which skillsets are preferred by the officers, and which skillsets could use continued reinforcement and training. Overall, muscle control was the least utilized PRO skillset. The ability to manage the physiological manifestations of stress (e.g., muscle tension, breathing rate, heart rate, etc.) is a crucial ingredient in developing stress resiliency (Williams & Harris, 2001). Equally essential is the ability to recognize when one is experiencing muscle tension and other physiological manifestations. However, under stressful situations, an officer may not intuitively recognize the signs of muscle tension, and thus fail to utilize appropriate muscle relaxation strategies. As such, PST curriculum should emphasize the importance of developing self-awareness of these physiological and psychological changes under stress. Such awareness would aid in identifying the need to utilize strategies such as muscle control, and thus increase their utilization (Ravizza & Fifer, 2015).

Notably, self-talk was also one of the least utilized skillsets. This is surprising given that self-talk has been shown to be highly important for maintaining focus, motivation, self-confidence, and performance within an athletic setting (Williams & Krane, 2015). Highlighting

the importance of self-talk, providing additional methods to control self-talk (e.g., thought stopping, reframing, cue words), and demonstrating concrete examples of implementation may aid in increasing overall acceptance and usage of this skill (Williams & Krane, 2015).

The current sample also illuminated significant differences in the use of PRO skills across various demographic groups (e.g., gender, age, years in law enforcement, and rank). The differences in the use of PRO skills was such that less utilization of PRO skills were observed with one's increasing age, the longer one was on the force, and with increasing rank. As discussed prior, the most likely explanation for this trend concerns whether officers received PRO as part of academy training or in-service. Only officers who have been on the force since 2013⁴ would have had an opportunity to receive PRO training as part of academy curriculum. The remaining officers would have only been acquainted with PRO via yearly in-service training. This distinction is significant as officers who received PRO as part of academy training received 8 to 10 hours of instruction with an additional 40 hours of PRO reinforced and embedded throughout tactics, driving, and firearms training. In contrast, officers who received PRO instruction as part of in-service would have only received 5 hours total of training. Thus, younger officers, with fewer years on the force, are more likely to have received more extensive training in PRO compared to older and more senior officers. As such, differences in exposure to PRO most likely accounts for the variation across demographic groups.

The demographic differences in PRO utilization is an important finding. Specifically, it highlights the importance of increased exposure to PRO instruction, as increased exposure results in higher rates of psychological skill use. Practically, these findings support the benefit of integrating PRO training into academy curriculum, and the need to increase the amount of PRO

⁴ PRO was first integrated into academy curriculum in 2013.

training that officers receive via in-service. To further support this contention, future research should examine differences between officers who have and have not received PRO training. Differences in the use of PRO skills between these groups would further help support the benefit of PST programs. Such finding would be valuable as additional evidence-based research on the benefit and effectiveness of PST programs can help garner increased programmatic support and acceptance.

PSI-LE and Psychological Health and Wellbeing Outcomes

The underlying assumption regarding the use of psychological skills is that they lead to improved psychological, physiological, and behavioral outcomes. Within the field of law enforcement, indirect support of this contention has been observed by way of examining overall impact of PST programs (e.g., Arnetz et al. 2013; Christopher et al., 2013; McCraty & Atkinson, 2012; Page et al., 2015). While a number of PST programs have shown important benefits, other studies have demonstrated little to no effect. As such, the findings on PST effectiveness remains equivocal (e.g., Patterson, et al. 2004).

A potentially important advancement in elucidating the impact of PST programs is to examine the direct relationship between the use of psychological skills espoused by PST programs and their effects on psychological health and wellbeing outcomes. Clarifying the relationship between the use of mental skills and various positive outcomes may provide clarity into why some programs have been found to be more or less effective. To this extent, the present project provided preliminary evidence of the relationship between the use of PRO skills with outcomes related to psychological health and wellbeing.

A series of exploratory stepwise regressions analyses were performed to assess the extent to which the use of PRO skills, as measured by the PSI-LE, could account for variance in the

observed psychological outcomes. Results of the analyses indicated that the use of PRO skills could significantly account for variance in each of the observed outcomes ranging from 6% to 30%. Moreover, the results indicated that some mental skill (e.g., attention management and mental practice) were more effective in predicting psychological outcomes than others (e.g., muscle control and combat breathing).

Insights and Future Recommendations

Our findings highlight two important points when considering the effect of PST programs on psychological outcomes. First, the PSI-LE subscales differed in their ability to account for variance in the observed outcomes. For example, PSI-LE subscales were able to account for over 26% of variance in two variables (health satisfaction and mental resiliency), whereas they were less successful in accounting for variance in somatic anxiety and job satisfaction, 5.8% and 8.0% respectively. As such, the extent to which research will be able to identify benefits associated with PST intervention is going to be dependent upon which outcome variables are assessed. For example, if we look only at the impact of the use of PRO skills on somatic anxiety and job satisfaction, then one might conclude that PRO training is ineffective. However, when looking at the outcomes of health satisfaction and mental resiliency, one would overwhelmingly conclude that PRO has a positive impact. Thus, it is imperative to assess a range of psychological, physical, and behavioral outcome measures when validating the effectiveness of PST programs.

A second important conclusion from the regression analyses was that only a few mental skillsets (e.g., attention management, physical recharge, and mental practice) were consistently the strongest predictors of the majority of outcomes measured. As such, some mental skills are more important for bringing about meaningful change in psychological outcomes than others. A

need exists to define a set of mental skills that are reliably linked to known psychological, physiological, and behavioral outcomes. To date, PST curricula have varied extensively, and consequently the findings of programmatic benefits have been mixed (see Patterson, et al. 2004). Utilization of the PSI-LE allows researchers and practitioners to connect the use of mental skills with important outcomes. As such, it allows the identification of which mental skills are most relevant to include in PST curriculum thereby increasing the likelihood of program success.

To extend the benefit of the PSI-LE, future research is needed to examine the relationship between PSI-LE subscales and a wider variety of psychological, physiological, and behavioral outcomes. The present study only assessed a limited number of outcomes in order to minimize the burden on officers' time associated with completing the questionnaires; however, future research should examine a broader array of related outcomes (e.g., burnout, occupational stress, etc.). Moreover, future research should consider more carefully relevant covariates (age, gender, years-in-law enforcement, rank, etc.) in exploring the relationship between PSI-LE and psychological outcomes. Preliminary analysis of the descriptives from the present study indicate that such variables may mediate the extent to which mental skills are used, and thus effective.

Conclusion

A recent report by the Office of Community Oriented Policing Services highlighted the need for more evidence-based research on the impact of mental health and wellness programs within the law-enforcement community (Spence et al., 2019). To this end, the present project developed a first-of-its-kind inventory to gauge the extent to which officers utilize mental strategies learned during psychological skills training. This inventory represents an important tool for being able to gauge the effectiveness of PST programs by establishing a valid and reliable measure for identifying changes in mental skill use and linking the use of those skills to

important psychological health and wellbeing outcomes. Moreover, this project represents the first time that the use of mental skills in law enforcement has been directly linked to positive psychological outcomes.

While the PSI-LE was based off the content found within the PRO curriculum, the assessed mental skills represent a broad spectrum of fundamental skills typically associated with psychological skills and resiliency training programs (Williams & Krane, 2015). Consequently, the PSI-LE would be applicable for assessing mental skill use more broadly within the law enforcement community, and not only as it pertains to PRO. Importantly, the PSI-LE may foster the ability of departments to perform a needs assessment of the strength and weakness of their officers' use of mental skills. In doing so, this could help facilitate the design and implementation of PST programs aimed at improving mental health and wellbeing. Given the negative impact of trauma and critical incident stress on the mental and physical wellbeing of law enforcement officers, the ability to provide evidence-based support to PST programs could have important and meaningful benefits to officers' overall quality of life. Such outcomes are not only important for officers, but also the communities they serve.

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APPENDIX A

Psychological Skills Inventory – Law Enforcement

Thank you for completing this questionnaire. Your responses are vital to improving our officer training. Your responses will be kept completely anonymous and cannot be linked to you.

Instructions

The following are statements that officers have used to describe their experiences. Please read each statement carefully, and then recall as accurately as possible how often you experience the same thing. There are no right or wrong answers. Do not spend too much time on any one statement.

<i>Please circle how often you have these experiences.</i>	Never	Rarely	Some- times	Frequently	Almost Always
I deliberately reflect on past calls to improve future performance.	1	2	3	4	5
When I need to focus, I concentrate on slowing down my breathing	1	2	3	4	5
Before a call, I think through potential scenarios and options	1	2	3	4	5
I focus on what's important now	1	2	3	4	5
I control my focus to maintain situational awareness during my shift or on a call	1	2	3	4	5
I talk to myself to help my police performance	1	2	3	4	5
When I experience negativity, I focus on what I can control	1	2	3	4	5
I often talk myself through tough situations by focusing on what I need to do	1	2	3	4	5
I mentally practice my tactical skills	1	2	3	4	5
I notice when I'm not focused	1	2	3	4	5
I utilize combat breathing when in a tense situation at home	1	2	3	4	5
I eat healthy and limit my intake of "junk food"	1	2	3	4	5
If I'm feeling tense, I stretch to loosen up	1	2	3	4	5
I often reflect on my purpose for being a police officer	1	2	3	4	5

<i>Please circle how often you have these experiences.</i>	Never	Rarely	Some- times	Frequently	Almost Always
When I observe a “death grip” on the steering wheel, I tap my fingers and stretch my hands in order to focus and relax	1	2	3	4	5
I often talk myself through difficult situations	1	2	3	4	5
I set specific goals for my fitness level	1	2	3	4	5
When the pressure is on, I actively control my breathing to focus	1	2	3	4	5
I mentally practice for critical situations	1	2	3	4	5
I pay attention to when I’m feeling tense and stiff	1	2	3	4	5
To maintain my situational awareness, I move my head from side to side.	1	2	3	4	5
I mentally rehearse my response to potential scenarios	1	2	3	4	5
I practice controlling muscle tension	1	2	3	4	5
I remind myself the reason for why I do my job to help keep me motivated and driven.	1	2	3	4	5
I make plans to get enough exercise per week.	1	2	3	4	5

SCORING OF THE PSI-LE

The PSI-LE produces seven subscale scores, and one overall score. Scores are scaled in a positive direction (i.e., higher scores denote greater use of mental skills). The mean score of items within each subscale is used to calculate the subscale score. Overall score (i.e., TotalPRO) is the sum of each subscale score. Calculation of subscale scores are as follows:

Attention Management = mean(Q4 + Q5 + Q7 + Q10)
 Combat Breathing = mean(Q2 + Q11 + Q18)
 Winning Mindset = mean(Q14 + Q24)
 Muscle Control = mean(Q13 + Q15 + Q20 + Q21 + Q23)
 Mental Practice = mean(Q1 + Q3 + Q9 + Q19 + Q22)
 Physical Recharge = mean(Q12 + Q17 + Q25)
 Self-talk = mean(Q6 + Q8 + Q16)
 TotalPRO = sum(all subscale scores)

APPENDIX B

ANXIETY DEPRESSION DISTRESS INVENTORY – 27 (ADDI-27)

Instructions: Below is a list of feelings, sensations, problems, and experiences that people sometimes have. Read each item and then circle the appropriate choice to the right of that item. Use the choice that best describes how much you have felt or experience things this way during the past two weeks, including today.

Please circle how often you have these experiences.	Not at all	A little bit	Moderately	Quite a bit	Extremely
Felt sad	1	2	3	4	5
Felt discouraged	1	2	3	4	5
Felt worthless	1	2	3	4	5
Felt really happy	1	2	3	4	5
Felt nervous	1	2	3	4	5
Felt hopeless	1	2	3	4	5
Blamed myself for a lot of things	1	2	3	4	5
Felt numbness or tingling in my body	1	2	3	4	5
Felt like I had accomplished a lot	1	2	3	4	5
Felt like I had a lot of interesting things to do	1	2	3	4	5
Felt like I had a lot to look forward to	1	2	3	4	5
Felt like a failure	1	2	3	4	5
Was proud of myself	1	2	3	4	5
Felt dizzy or lightheaded	1	2	3	4	5
Was short of breath	1	2	3	4	5
Hands were shaky	1	2	3	4	5
Felt really "up" lively	1	2	3	4	5
Had a very dry mouth	1	2	3	4	5
Felt confident about myself	1	2	3	4	5
Muscles twitched or trembled	1	2	3	4	5
Felt like I had a lot of energy	1	2	3	4	5
Was disappointed in myself	1	2	3	4	5
Heart was racing or pounding	1	2	3	4	5
Was trembling or shaking	1	2	3	4	5

Please circle how often you have these experiences.	Not at all	A little bit	Moderately	Quite a bit	Extremely
Worried a lot about things	1	2	3	4	5
Felt really good about myself	1	2	3	4	5
Had trouble swallowing	1	2	3	4	5

APPENDIX C

CONNOR-DAVIDSON RESILIENCY SCALE – 2 (CD-RISC 2)

Instructions: For each item, please circle the number below that best indicates how much you agree with the following statements as they apply to you over the last **month**. If a particular situation has not occurred recently, answer according to how you think you would have felt.

Circle the number	not true at all	rarely true	sometimes true	often true	true nearly all the time
1. I am able to adapt when changes occur.	1	2	3	4	5
2. I tend to bounce back after illness, injury, or other hardships	1	2	3	4	5

APPENDIX D

SINGLE-ITEM OVERALL JOB SATISFACTION MEASURE

Instructions: Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

Circle the number	Extremely dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither satisfied nor dissatisfied	Slightly satisfied	Moderately satisfied	Extremely satisfied
1. Taking everything into consideration, how do you feel about your job as a whole?	1	2	3	4	5	6	7

APPENDIX E

WORLD HEALTH ORGANIZATION QUALITY OF LIFE – BREF (WHOQOL-BREF)

Instructions: Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

<i>Circle the number</i>	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
1. How satisfied are you with your health?	1	2	3	4	5

<i>Circle the number</i>	Very poor	Poor	Neither poor nor good	Good	Very good
2. How would you rate your quality of life?	1	2	3	4	5