

THE IMPACT OF PERCEIVED ORGANIZATIONAL SUPPORT ON PTSD  
SYMPTOMOLOGY AMONG LAW ENFORCEMENT OFFICERS: A MODERATED  
MODERATION MODEL

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## ABSTRACT

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Law enforcement officers regularly encounter critical incidents (e.g., discharging weapons, police pursuit). Such incidents are often traumatic, with an accumulation of traumatic incidents potentially resulting in the development of Posttraumatic Stress Disorder (PTSD). However, there are multiple factors that could have an impact on the association between critical incidents and PTSD. One such factor, which has been documented by previous research, is work environment stress. Work environment stress can generate risk for PTSD and includes working overtime, fatigue, changes in legislation, and inadequate equipment and/or training. A second factor that can have implications for the development of PTSD symptomology, which has been largely overlooked but may act as a protective factor, is perceived organizational support (POS). POS has been found to be negatively related to PTSD symptoms and may decrease the likelihood of PTSD symptom development for law enforcement officers who have experienced a critical incident. We hypothesized that work environment stress would moderate the association between frequency of critical incidents and PTSD symptoms. Furthermore, we hypothesized that POS would interact with work environment stress to moderate the association between frequency of critical incidents and PTSD symptoms. Participants for this study were 120 law enforcement officers from various agencies across the state of Texas. The average age of participants was 42.23 years ( $SD = 11.09$ ), with 97 (80.8%) participants identifying as male. Work environment stress interacted with critical incident frequency to impact PTSD symptoms ( $p = .05$ ). POS did not

significantly interact with overall work environment stress and critical incident frequency to impact PTSD symptoms. However, exploratory analyses examining two forms of work stress (operational and organizational) found that only organizational stress interacted with critical incident frequency to impact PTSD symptoms ( $p = .03$ ). Implications and future directions are discussed.

**KEYWORDS:** Perceived organizational support, Work environment stress, Trauma, Posttraumatic stress disorder, Law enforcement officers

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## **CHAPTER I**

### **Introduction**

Given the numerous job duties that are expected of law enforcement officers, it is no surprise that critical incidents (e.g., discharging weapon, police pursuit) occur quite often and can have a lasting impact on these individuals. After repeated exposure to traumatic events, the likelihood of developing Posttraumatic Stress Disorder (PTSD) or related symptoms increases (Breslau, Chilcoat, Kessler, & Davis, 1999; Green et al., 2000; Johnson & Thompson, 2008). Whereas the lifetime prevalence of PTSD in the general population is estimated to be approximately 6.8% (Kessler, Berglund, Demler, Jin, Merikangas, & Walters, 2005), it is estimated that anywhere from 15% (Hartley et al., 2013) to 24% (Fox et al., 2012) of law enforcement officers suffer from PTSD. These statistics ultimately reflect how the repeated exposure to critical incidents can negatively impact law enforcement officers by increasing their risk for developing PTSD. However, these statistics do not take into account the law enforcement officers who do not meet the clinical threshold needed for a diagnosis of PTSD and instead display subclinical levels of PTSD. Subclinical levels of PTSD may also produce distress and impairment (Carlier, Lamberts, & Gersons, 1997) and should also be a point of inquiry amongst researchers.

In a sample of 262 Dutch police officers, it was found that 34% of participants displayed subclinical symptoms of PTSD (Carlier, Lamberts, & Gersons, 1997). If law enforcement officers already display symptoms related to PTSD, but do not meet the criteria for diagnosis, then these officers may not receive access to services and resources that could prevent further development of the disorder. As such, repeated exposure to

critical incidents without proper resources to aid officers after the fact may negatively impact not only the officers' health, but the department's effectiveness as well. However, some factors within law enforcement can potentially influence the association between critical incident exposure and the development of PTSD symptomology (i.e., symptoms characteristic of PTSD, but not necessarily meeting the clinical threshold needed for diagnosis), such that they can serve as either a protective factor, thus promoting resilience after exposure, or a risk factor, thus negatively impacting officers. As police officers are often highly indoctrinated into police culture, it is important to look at organizational components that can serve as either protective or risk factors, as they can be targeted through policy changes that can ultimately be imposed to maximize benefits on officers' health. Thus, it is the aim of this study to provide some insight into how perceived organizational support and work environment stress can exacerbate or ameliorate symptoms of PTSD in law enforcement officers.

### **Law Enforcement Stressors**

Although critical incidents are often stressful, with experience of a critical incident increasing one's likelihood of developing PTSD (Clair, 2006; Stephens & Miller, 1998), work-related factors can potentially mitigate the stress experienced from a critical incident and ultimately symptoms of PTSD (Maguen et al., 2009; Stephens, 1997). For instance, in a sample of New Zealand law enforcement officers, it was found that more opportunities to talk about their experiences within the workplace were related to fewer PTSD symptoms (Stephens, 1997). However, there are also factors within the workplace that if present, can potentially exacerbate the effects of critical incidents. Work environment stressors include, but are not limited to, an organization demanding

overtime, nighttime shifts, fatigue, limited social time with family and friends, changes in legislation (i.e., new criminal laws to learn and enforce), as well as inadequate equipment and/or training (McCreary & Thompson, 2006).

Thus far, there has been a multitude of evidence linking work environment stress to the development of PTSD symptomology after traumatic incidents in law enforcement officers (Carlier, Lamberts, & Gersons, 1997; Liberman, 2002; Maguen et al., 2009; Marmar et al., 2006). In one such study, researchers conducted a longitudinal examination of 180 police academy recruits over a one-year period (Maguen et al., 2009). Their results illustrated that routine work environment stress (e.g., issues regarding equipment, training, discrimination, management, etc.) mediated the association between exposure to critical incidents and subsequent PTSD symptomology (Maguen et al., 2009). This provides support that work environment stress can have implications in the development of PTSD symptomology.

The work environment stress officers experience as a result of their occupation can be conceptualized into two different categories of stressors: operational and organizational (McCreary & Thompson, 2006). Operational stress encompasses stressors that relate to work-life balance (e.g., overtime, work activities on off time) while organizational stress encompasses stressors pertaining to organizational demands by an officer's department (e.g., insufficient resources, inadequate equipment, poor supervisor support; McCreary & Thompson, 2006). Currently, little research has been conducted in relation to these two forms of stress as separate facets that impact the development of PTSD, but some insight can be gained when looking at specific instances of each. For example, according to a survey of 400 spouses of law enforcement officers, shiftwork

and long hours tended to have the greatest negative impact on officers' social life (Alexander & Walker, 1996) which are both aspects of operational stress (McCreary & Thompson, 2006). Additionally, long work hours and poor sleep quality have been shown to contribute to law enforcement officers' fatigue, thus having major implications for these officers who are expected to make split second decisions while they are on duty (Vila, 2006). Finally, in relation to organizational stress, both peer and supervisor support have evidence suggesting they can serve as a protective factor in the development of PTSD (Stephens, Long, & Miller, 1997). Although these are factors officers encounter on a daily basis that can contribute to work environment stress, the organization itself that the officer works for may also have consequences of its own.

### **Perceived Organizational Support**

Organizational Support Theory (OST) posits that employees of an organization will develop a certain viewpoint about the organization they work for that results from their belief about the extent to which the organization values them (Eisenberger et al., 1986). As such, OST may provide a framework for better understanding not only how work environment stress can impact the development of PTSD symptomology after critical incidents, but also the role that support from the organization can play in mitigating this outcome. In a meta-analytic study, working conditions, which can be a component of work environment stress, were seen to be an antecedent component of Perceived Organizational Support (POS; Kurtessis et al., 2017). POS reflects employees' beliefs about how their organization values them, their contributions, and their well-being (Eisenberger et al., 1986; Kurtessis et al., 2017) and includes, but is not limited to, perceived job stability, apparent care for officers' well-being and health, and the level of

acceptability for taking a long absence due to illness (Eisenberger et al., 1986). The same study by Kurtessis and colleagues (2017) also indicated that psychological well-being was an outcome of POS. Applying OST to a law enforcement setting, it would appear that work environment stress (e.g., insufficient resources, inadequate training, long hours, etc.) can influence an officer's belief about POS, which in turn impacts their overall psychological health. Although there will be inevitable stressors due to the nature of a law enforcement officer's duties, understanding the points at which policies or interventions can be initiated can provide better mental health outcomes for officers.

Based on OST and Kurtessis and colleagues' (2017) findings, how law enforcement officers perceive support from their organization can have an impact on their psychological well-being, specifically the development of PTSD symptomology. Organizational support can be considered a form of social support from which law enforcement officers can draw on after critical incidents. Various forms of social support (e.g., family, friends, religion) have been found to have positive implications for individuals who have experienced various types of trauma, such that it can serve as a protective factor against the development of PTSD (Andrews, Brewin, & Rose, 2003; Brewin, Andrews, & Valentine, 2000; Guay, Billette, & Marchand, 2006; Hyman, Gold, & Cott, 2003; Laffaye et al., 2008; Lawrence & Fauerbach, 2003; Ménard & Arter, 2013; Vranceanu, Hobfoll, & Johnson, 2007). There has also been evidence linking greater social support to treatment seeking after a traumatic experience in adulthood (Ullman & Brecklin, 2002), thus providing further evidence for its importance both during and after traumatic experiences.

Although there is scarce evidence, specifically in regard to law enforcement officers, a relationship between POS and PTSD symptomology has been established in a sample of soldiers, such that POS was negatively correlated with symptoms of PTSD (Kelley et al., 2014). The authors also found that POS was negatively related to stigma, suggesting that POS can potentially reduce the stigma of seeking treatment (Kelley et al., 2014). In a sample of 673 Pennsylvanian law enforcement officers, there is evidence that as POS increases, officers are more willing to utilize mental health services (Tucker, 2015). Additionally, others have found that insufficient time allowed before returning to duty after a trauma by departments is a risk factor in developing PTSD (Carlier, Lamberts, & Gersons, 1997). As such, if a department does not have a mental health treatment policy in place to guide officers, it could leave officers feeling unsupported and unwilling to seek mental health treatment, ultimately having a long-term impact on both the officers and the organization.

Amongst law enforcement officers, social support has been seen to serve in a similar protective manner as mentioned above. For example, in a sample of Canadian law enforcement officers, social support from peers during the traumatic event served as a protective factor against the development of PTSD (Martin, Marchand, Boyer, & Martin, 2009). Stephens, Long, and Miller (1997) found in a sample of New Zealand law enforcement officers that social support resulting from peers, supervisors, and even personal social support outside of work all served as protective factors against the development of PTSD symptomology. Relatedly, another study conducted on a sample of Dutch law enforcement officers found that not only did a lack of personal social

support contribute to PTSD symptomology, but so did dissatisfaction with their organizational support (Carlier, Lamberts, & Gersons, 1997).

Although there is a large body of research on social support's implications in the development of PTSD, there has been little in the way of research in regard to POS's impact on PTSD symptomology, specifically for law enforcement officers. Research on POS within law enforcement officers could provide evidence in support of policy changes within agencies in regard to actions to take after law enforcement officers experience critical incidents. If law enforcement officers do not perceive their organization to be supportive after critical incidents, then this can likely diminish a valuable form of social support for them and potentially serve as a barrier to engaging in mental health treatment, thus potentially increasing their mental health symptoms. As such, investigating the nature of POS's impact on PTSD symptomology could have major implications for not only the procedures that are enacted following a traumatic experience for law enforcement officers, but also for potential policies that could be put in place within departments to serve as a preemptive protective measure for their officers' inevitable encounter with critical incidents.

### **Present Study**

It is the goal of this study to provide further evidence for understanding factors that influence law enforcement officers' susceptibility to developing PTSD following the accumulation of critical incidents. Specifically, this study aims to understand how perceived organizational support can serve as a defense against the development of PTSD symptomology. Past research has briefly touched on work environment stress in law enforcement officers and how this can impact the relationship between critical incidents



and PTSD, but perceived organizational support has seldom been investigated within this population. The primary aim of this study is to investigate how POS can interact with work environment stress in order to moderate the impact of frequency of critical incidents on PTSD symptomology (see Figure 1). The hypotheses are as follows:

H<sub>1</sub>: Work environment stress will moderate the relationship between the frequency of critical incidents experienced and PTSD symptoms, such that as work environment stress increases, then the association between frequency of critical incidents and PTSD symptoms will increase.

H<sub>2</sub>: POS will act as a mitigating variable by interacting with work environment stress to moderate the association between frequency of critical incidents and PTSD symptoms, such that as work environment stress decreases and POS increases, the strength of the association between frequency of critical incidents and PTSD symptoms will decrease.

The secondary aim of this study is to conduct exploratory analyses to determine if the two forms of work environment stress (i.e., operational stress and organizational stress) differentially impact the relationship between frequency of critical incidents and PTSD symptoms, as well as investigate if POS interacts with either to impact PTSD. As research is lacking on these two different forms of work environment stress, the goal is to investigate any impact each one may have on the association between frequency of critical incidents and PTSD symptoms.

## CHAPTER II

### Methods

#### Participants

This study utilized data from an ongoing project that aims to assess the impact of work stress on law enforcement officials. Data was collected from various law enforcement agencies across Texas and a total of 120 participants completed the study. The average age of participants was 42.23 years old ( $SD = 11.09$ ), with the minimum being 23 years old and the maximum being 74 years old. Twenty-three (19.2%) participants identified as female and 97 (80.8%) identified as male. Eight (6.7%) participants identified as Black/African American, 102 (85.0%) identified as White/European American, 9 (7.5%) identified as Hispanic/Latinx, and 1 (0.8%) identified as Native American.

#### Measures

**Demographics.** Demographic items include questions pertaining to the participant's age, gender, race/ethnicity, education level (e.g., "What is your highest level of education?"), marital status, and occupational position within their agency (e.g., "How long have you been in your current position?").

**Police Stress Questionnaire (PSQ; McCreary & Thompson, 2006).** This measure consists of 40-items intended to measure various sources of stress that law enforcement officials incur as a result of their occupation. The first part of this scale consists of 20 items pertaining to operational stress (PSQ-Op;  $\alpha = .93$  from McCreary & Thompson, 2006). Items here relate to balancing work life and personal life (e.g., "Not enough time available to spend with friends and family"). The second part of this scale

consists of 20 items pertaining to organizational stress (PSQ-Org;  $\alpha = .92$  from McCreary & Thompson, 2006). Items here relate to perceived demands of the agency (e.g., “Excessive administrative duties”). Participants rate each potential stressor that is listed and indicate the amount of stress each one gives them on a 7-point Likert scale, with 1 being *no stress at all* and 7 being *a lot of stress*, with a maximum possible score of 280. For the purposes of this study, a total score comprised of both subscales was created. Further, to perform our exploratory analyses, subscale scores of operational stress and environmental stress was derived. Higher scores on the total scale and the subscales reflect higher work environment stress. The Cronbach’s alpha for this study was .95 for the total scale, .92 for operational stress, and .93 for organizational stress.

**Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5;** Blevins et al., 2015). The PCL-5 is composed of 20-items intended to measure the symptoms of PTSD after an individual has experienced or been exposed to a traumatic or stressful event. This measure consists of four subscales measuring intrusion (e.g., “Repeated, disturbing dreams of stressful experience?”), avoidance (e.g., “Avoiding memories, thoughts, or feelings related to the stressful experience?”), negative alterations in cognitions or mood (e.g., “Trouble remembering important parts of the stressful experience?”), and changes in arousal and reactivity (e.g., “Feeling jumpy or easily startled?”). Participants indicate the extent to which they have been bothered by each symptom within the past month on a 5-point Likert scale, with 0 being *not at all* and 4 being *extremely*. For the purpose of this study, total scores across all subscales were used, with a maximum possible score of 80. Higher scores reflect greater clinical impairment while lower scores reflect little to no clinical impairment. The PCL-5 had an internal reliability of .94 and a test-retest

reliability of .82 in an undergraduate sample (Blevins et al., 2015). The Cronbach's alpha for this study was .95.

**Survey of Perceived Organizational Support (SPOS;** Eisenberger, Huntington, Hutchison, & Sowa, 1986). The SPOS is a 36-item scale intended to measure the amount of support an individual feels they receive from the organization, or agency, for which they work. Participants respond to items such as “my organization would ignore any complaint from me” and “my organization really cares about my well-being” on a 7-point Likert scale ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). 18 items were reverse coded and a total score was created for this measure, with higher scores reflecting greater perceived organizational support and a maximum possible score of 216. The internal reliability of the SPOS was .97 in a sample of employees (Eisenberger et al., 1986). The Cronbach's alpha for this study was .97.

**Critical Incident History Questionnaire (CIQH;** Weiss et al., 2010). The frequency subscale of the CIHQ was used for the purpose of this study. This subscale consists of 34-items asking participants about a specific number of times they have encountered various types of critical incidents. Such incidents in the item set include “being seriously injured intentionally,” “being present when a fellow officer was killed intentionally,” and “being shot at.” For the frequency subscale, participants respond via a numerical input if the number of times they experienced the specified critical incident was anywhere from 1 to 9. If the participant experienced the specified critical incident more than nine times, they had three additional response options to choose from: 10-20 times, 21-50 times, 51+ times. In order to sum this, the additional response options were recoded as follows: 15 (midpoint of 10 and 20), 35.5 (midpoint of 21 and 50), and 51.

The reported alpha coefficient for this subscale is .87 (Weiss et al., 2010). The Cronbach's alpha for this study was .90.

### **Procedure**

Institutional Review Board (IRB) approval was obtained before the commencement of any recruitment efforts. Various law enforcement agencies were contacted in order to gain permission to reach out to officers within these agencies for participation. Data was collected online from agencies across Texas, as well as in person in the Greater Houston area. For data collected in person, researchers gained permission to visit the department and administer the study to law enforcement officials that opted to participate. For online participation, officers were recruited to participate via emails and flyers and directed to the online survey. After completing the informed consent, participants completed demographic information before beginning a series of measures that included the PSQ, PCL-5, SPOS, and CIHQ. After completing the survey, participants were given the option to either receive a \$10 Amazon gift card or opt to enter into a raffle to win one of five \$100 Amazon gift cards available as a means of compensation for their time.

## CHAPTER III

### Results

#### Preliminary Data Analysis

The Statistical Package for Social Sciences (SPSS) version 25 was used to conduct missing data analyses. It was found that 13.79% of data was missing and Little's MCAR test revealed that this data was missing at random ( $Chi-Square = 5717.93$ ;  $p = 0.83$ ). Individuals with one or more scales uncompleted were excluded from analyses. As such, 65 individuals were removed and analyses were completed with 123 participants.

PTSD scores were assessed as a continuous variable and the assumptions of multiple linear regression were assessed. Scatterplots of each predictor variable with PTSD scores were created and confirmed that the assumption of linearity was met. Homoscedasticity was assessed using scatterplots of the studentized residuals for the predictor variables in relation to the unstandardized predicted values. No patterns of heteroscedasticity were found, thus confirming homoscedasticity. In testing for multicollinearity, Pearson correlations between the predictor variables were assessed and all coefficients were less than .70. Additionally, the Variance Inflation Factor (VIF) was 1.25 for POS, 1.24 for work environment stress, and 1.02 for the critical incident frequency, indicating the absence of multicollinearity as all values were less than 10. When assessing for outliers, studentized deleted residuals were assessed. Three participants were greater than three standard deviations and as such, removed from analyses, resulting in 120 participants.

A normal Q-Q plot of studentized residuals was used to assess normality of errors for the model. The plot indicated that the residuals were not normally distributed and as such, a log transformation was completed for PTSD scores in order to create a more normal distribution for the residuals. Additionally, the kurtosis and skewness of each variable was assessed. The skewness of critical incident frequency, POS, and work environment stress were 1.05, -.28, and .51, respectively, while the kurtosis of critical incident frequency, POS, and work environment stress were .92, -.49, and .48, respectively. For PTSD scores, the skewness was 1.53 and the kurtosis was 2.33. All of the above indicate normality.

After conducting missing data analyses and removing outliers, a post hoc power analysis was conducted using G\*Power for a linear multiple regression with seven predictors (critical incident frequency, work environment stress, POS, critical incident frequency x work environment stress, critical incident frequency x POS, work environment stress x POS, and critical incident frequency x work environment stress x POS). Analysis indicated that with a sample size of 120, a medium effect size ( $f^2 = 0.15$ ), and an alpha of .05, an adequate power of 0.87 is obtained.

### **Descriptive Data**

When assessing for clinical significance in PTSD scores, only 7 participants met the clinical cutoff score of 33 and above on the PCL-5 (Bartlett et al., 2018; Bovin et al., 2016), while 101 had some symptoms and 12 endorsed no symptoms of PTSD. Correlations and mean difference tests were conducted to assess for any possible covariates. There were no significant correlations between age, length of time in law enforcement, and length of time in current position with PTSD symptoms ( $p > .05$ ).

Additionally, there were no significant group differences found for gender, race/ethnicity, education level, or marital status in regards to PTSD symptoms ( $p > .05$ ). As such, no covariates were included in subsequent analyses.

Table 1 lists the means, standard deviations, and intercorrelations for all of the variables. The mean score for PTSD symptoms was 11.40 with a standard deviation of 11.58. The means and standard deviations of the predictor variables are: critical incident frequency ( $M = 168.62$ ,  $SD = 144.45$ ), work environment stress ( $M = 133.53$ ,  $SD = 44.06$ ), and POS ( $M = 115.42$ ,  $SD = 45.83$ ). Work environment stress was significantly correlated with both POS ( $r = -.45$ ,  $p < .001$ ) and PTSD symptoms ( $r = .31$ ,  $p = .001$ ). Additionally, both frequency of critical incidents ( $r = .22$ ,  $p = .02$ ) and POS ( $r = -.23$ ,  $p = .01$ ) were significantly correlated with PTSD symptoms.

### **Moderated Moderation: Primary Hypotheses**

Model 3 of the PROCESS macro for SPSS was used to conduct the moderated moderation analyses which ascertained if overall work environment stress would moderate the relationship between critical incident frequency and PTSD symptoms, and if POS would moderate that moderation (see Figure 1; Hayes, 2017). Scores for the predictor variables (critical incident frequency, work environment stress, POS) were mean centered in order to create interpretable outputs. Table 2 lists the main effects and interactions for PTSD symptoms. There were significant main effects of critical incident frequency ( $B = .002$ ,  $p = .03$ ) and work environment stress ( $B = .008$ ,  $p = .002$ ) on PTSD symptoms. There was not a significant main effect of POS on PTSD symptoms ( $B = -.001$ ,  $p = .71$ ). There was a significant interaction between critical incident frequency and



work environment stress ( $B = .000, p = .05$ ; see Figure 2). The model explained 17% of the variance for PTSD symptoms,  $F(7, 112) = 3.35, p = .003$ .

### **Moderated Moderation: Exploratory Hypotheses**

**Descriptive Data.** For our exploratory hypotheses, Table 3 lists the means, standard deviations, and intercorrelations for the variables in the exploratory analyses. Critical incident frequency ( $r = .22, p = .02$ ), operational stress ( $r = .39, p < .001$ ), organizational stress ( $r = .19, p = .04$ ), and POS ( $r = -.23, p = .01$ ) were all significantly correlated with PTSD symptoms. Additionally, operational stress and organizational stress were highly correlated ( $r = .76, p < .001$ ).

PROCESS macro for SPSS was used to conduct analyses to assess if the two forms of work environment stress (i.e., operational stress and organizational stress) differentially impacted the relationship between frequency of critical incidents and PTSD symptoms, as well as investigate if POS interacted with either to impact PTSD (model 3 in PROCESS; Hayes, 2017). Scores for the predictor variables (critical incident frequency, operational stress, organizational stress, POS) were mean centered in order to create interpretable outputs.

In the first model, operational stress was entered as the first moderator, POS was entered as the second moderator, and organizational stress was entered as a covariate (see Table 4). There were significant main effects of critical incident frequency ( $B = .002, p = .02$ ) and operational stress ( $B = .027, p < .001$ ) on PTSD symptoms. There was no main effect of POS on PTSD symptoms ( $B = -.002, p = .37$ ). There was not a significant interaction between critical incident frequency and operational stress ( $B = .000, p = .34$ ), operational stress and POS ( $B = <.001, p = .50$ ), or the three-way interaction of critical

incident frequency, operational stress, and POS ( $B = .000, p = .69$ ). The model explained 25% of the variance for PTSD symptoms,  $F(8, 111) = 4.52, p < .001$ .

In the second model, organizational stress was entered as the first moderator, POS was entered as the second moderator, and operational stress was entered as a covariate (see Table 5). There was a significant main effects of critical incident frequency ( $B = .002, p = .02$ ) on PTSD symptoms. There was a significant interaction between critical incident frequency and organizational stress ( $B = <.001, p = .03$ ; see Figure 3). There was not a significant three-way interaction between critical incident frequency, organizational stress, and POS ( $B = .000, p = .93$ ). The model explained 27% of the variance for PTSD symptoms,  $F(8, 111) = 5.12, p < .001$ .

## CHAPTER IV

### Discussion

Given that law enforcement officers work in an environment where they are repeatedly exposed to critical incidents, such as discharging their weapon or engaging in a police pursuit, it is no surprise that their work environment can produce deleterious psychological consequences. As it is estimated that anywhere from 15% (Hartley et al., 2013) to 24% (Fox et al., 2012) of law enforcement officers suffer from PTSD, research investigating potential factors that can exacerbate or ameliorate symptoms is critical. In our sample, approximately 6% met the clinical threshold for PTSD, which is likely attributable to the small sample size, as well as participants not being assessed by a clinician to determine a diagnosis. Past research has briefly investigated the impact of work environment stress on the relationship between critical incidents and PTSD in law enforcement officers (Carlier, Lamberts, & Gersons, 1997; Liberman, 2002; Maguen et al., 2009; Marmar et al., 2006). However, perceived organizational support has had little research investigating its impact among this vulnerable population.

It was the aim of this study to provide further evidence for the role of work environment stress in the development of PTSD symptomology following exposure to critical incidents, as well as provide evidence for the mitigating role of POS in this relationship. In line with previous research, critical incident frequency and work environment stress were significantly and positively correlated with PTSD symptomology, such that as critical incident frequency and work environment stress increased, PTSD symptoms increased as well. However, POS was negatively associated with PTSD symptoms, such that as POS increased, PTSD symptoms decreased.

In line with our hypothesis and past research, work environment stress did interact with critical incident frequency in association with PTSD symptomology. Conversely, perceived organizational support did not interact with work environment stress to impact the relationship between critical incident frequency and PTSD symptomology. Our results reflect our hypotheses and the literature regarding the impact of work environment stress. The extant literature has displayed a multitude of evidence linking work environment stress to the development of PTSD symptomology after traumatic incidents in law enforcement officers (Carlier, Lamberts, & Gersons, 1997; Liberman, 2002; Maguen et al., 2009; Marmar et al., 2006). As such, these results are in line with and add to the extant literature regarding the impact work environment stress has on the PTSD symptomology.

Furthermore, these results seem to contradict the extant literature regarding social support, as past research indicates that different forms of social support can serve as a protective factor against the development of PTSD (Andrews, Brewin, & Rose, 2003; Brewin, Andrews, & Valentine, 2000; Guay, Billette, & Marchand, 2006; Hyman, Gold, & Cott, 2003; Laffaye et al., 2008; Lawrence & Fauerbach, 2003; Ménard & Arter, 2013; Vranceanu, Hobfoll, & Johnson, 2007). This may be due in part to expectations law enforcement officers have regarding their organization's role in their operations, as perhaps some individuals may perceive the organization having a limited role in their mental health as a benefit. Further, receiving psychological services following a traumatic incident may be stigmatized within the law enforcement community (Karaffa & Tochkov, 2013), thus any form of mental health care within or outside one's agency may be viewed as an additional stressor. Officers' decisions against seeking mental health

services can stem from the belief that seeking treatment will negatively impact their career, such that it could make them look weak, unfit for duty, or impact their job status within the department (Fair, 2009; Fox et al., 2012; Papazoglou & Andersen, 2014; Wester, Arndt, Sedivy, & Arndt, 2010). If job security is perceived to be threatened by receiving psychological supports within one's organization, then organizational support may not have a mitigating effect on the relation between critical incidents and PTSD.

It was a secondary aim of this study to conduct exploratory analyses in order to investigate whether the two types of work environment stress (i.e., organizational stress, operational stress) would differentially impact the relationship between critical incident frequency and PTSD symptomology, as well as whether either would interact with POS. Regarding these results, we found that the two types of work environment stress did in fact differentially impact the relationship between critical incident frequency and PTSD symptoms. Specifically, we found that organizational stress significantly moderated the association between critical incident frequency and PTSD symptomology, such that as organizational stress increased, the positive association between critical incident frequency and PTSD symptomology was strengthened. This finding stands to reason, as both peer and supervisor support, which are components of the organizational stress subscale of the SPOS, have evidence suggesting they can serve as protective factors against the development of PTSD (Stephens, Long, & Miller, 1997). Conversely, operational stress did not significantly moderate the association between critical incident frequency and PTSD symptomology. It is possible that individuals entering the occupation have expectations about the nature of a law enforcement officer's job that

could prepare them for the inevitability of some of these operational stressors (e.g., shift work, paperwork, working alone at night, etc.).

We did not find POS to significantly interact with critical incident frequency and either work environment stress (i.e., operational stress or organizational stress) to impact PTSD symptomology. It is surprising that POS was not seen to have an impact on PTSD symptomology in both the primary and exploratory analyses. This lack of evidence for POS serving as a protective factor may be due, in part, to the wording on some of the items. For instance, some items on the SPOS may not directly apply to law enforcement populations. For example, the item “If [my department] earned a greater profit, it would consider increasing my salary” does not relate to the nature of a police department as it might to a corporation. Additionally, the SPOS items may not capture all aspects of organizational support that are unique to law enforcement agencies. For instance, agency policies that are in place to follow after critical incidents may impact participants’ view of organizational support, which were not captured within the scope of the measure.

These results indicate that there are other areas of intervention to target aside from POS, such as perceived supervisor support or peer support, that would potentially produce a greater impact in decreasing psychopathology for law enforcement officers after experiencing critical incidents. For instance, some policies in place may be perceived as a stressor rather than organizational support, such as compulsory psychological evaluation/treatment after critical incidents. As such, by reevaluating, updating, and clearly defining agency policies to reflect what constitutes being “fit for duty,” organizations may reduce stigma surrounding mental health treatment which could positively impact POS and treatment seeking behaviors in law enforcement officers.

Overall, these changes at the organizational level could ultimately lead to a decrease in psychopathology in law enforcement officers.

### **Limitations and Future Directions**

Although the current study adds to the extant literature by providing evidence for the impact that POS has on the development of PTSD symptomology, it also has several limitations. First, and most notable, is the small sample size. As 65 individuals were removed from analyses for not completing one or more measures, this drastically reduced the sample size. Although with a power analysis it was indicated that there was still adequate power to detect a medium effect size and that our sample likely was sufficiently powered, removing this number of participants likely impacted the interpretability of our results. Second, the sample displayed a lack of diversity in both gender and race/ethnicity, as the majority of the sample identified as male (75.5%) and White/European Americans (83.5%). Therefore, these results may not generalize to various minority within law enforcement, as their perceptions of organizational support may vary drastically from their colleagues. Future studies should investigate the impact of group membership on these associations, as this could provide key information regarding the impact of stress and organizational support among understudied groups. Third, some items on the SPOS may not directly apply to law enforcement populations, as discussed previously. As such, future studies regarding perceived organizational support in law enforcement populations should consider adapting this measure to make it more applicable to the organizational structure and demands of law enforcement agencies. Fourth, due to the cross-sectional nature of the study, we were unable to make causal inferences regarding the nature of PTSD symptoms. Further, we were unable to

determine the length of time since participants experienced their most recent critical incident. As a result, PTSD symptomology could be affected by this length of time between experiencing the incident and completing the study. Future studies should assess POS's impact at different time points following a critical incident. Last, the current study assessed PTSD symptomology and not diagnosis. Assessing PTSD diagnosis may show different results. As such, future studies should compare participants who meet a diagnosis of PTSD with those who meet subclinical levels of PTSD symptoms.

### **Conclusion**

Critical incidents are unfortunately an unavoidable aspect of the work that law enforcement officers perform. Repeated exposure to these traumatic events can ultimately increase the risk of these officers developing PTSD and other psychopathology. There are some factors that agencies could target as a means of ameliorating some of these symptoms for their officers. In the current study, POS was not found to interact with work environment stress and critical incident frequency to impact PTSD symptomology. Our exploratory analyses found that only organizational stress and not operational stress impacted the relationship between critical incident frequency and PTSD symptomology. As such, identifying and addressing organizational stressors (e.g., inadequate equipment, lack of resources, etc.) that are of concern to officers could ameliorate symptoms of PTSD. Furthermore, increasing overall organizational support, such as through working to reduce stigma surrounding mental health treatment and reevaluating policies, may help mitigate some of the negative effects of critical incidents, though more research is needed in this area. Addressing



organizational factors can lead to overall improved sense of well-being in law enforcement officers and potential resilience when facing future critical incidents.

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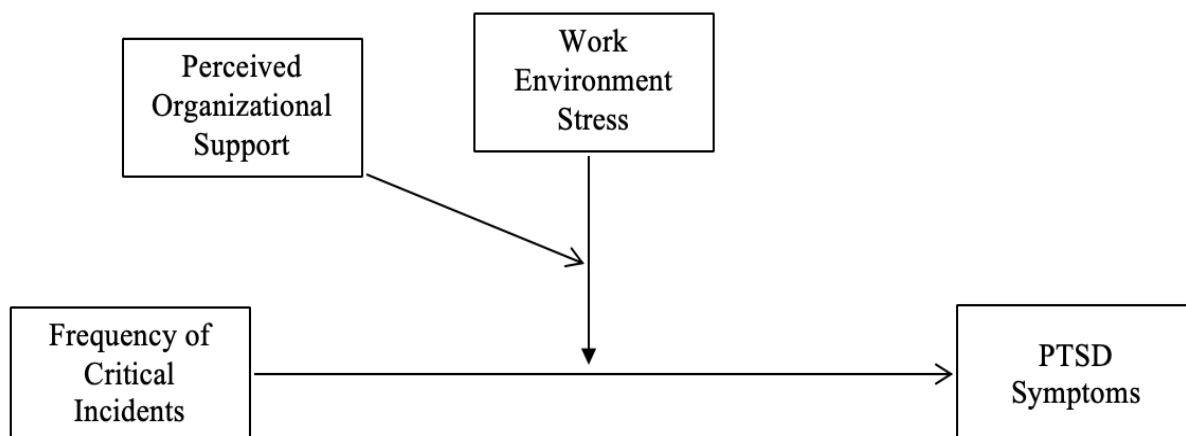
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## APPENDIX A

**Figure 1***Moderated Moderation Model.*



## APPENDIX B

## TABLES

**Table 1***Means, Standard Deviations, and Intercorrelations for Primary Hypotheses*

	1	2	3	4	5	6	7
<b>1. Critical Incident Frequency</b>	--						
<b>2. Work Environment Stress</b>	.08	--					
<b>3. Perceived Organizational Support</b>	-.117	-.45**	--				
<b>4. Posttraumatic Stress Disorder</b>	.22*	.31**	-.23*	--			
<b>5. Age</b>	.25**	-.11	.16	-.11	--		
<b>6. Length in Position (months)</b>	.09	.11	-.20*	-.01	.45**	--	
<b>7. Length in Law Enforcement (months)</b>	.38**	-.08	.18	-.07	.88**	.38**	--
<i>Mean</i>	168.62	133.53	115.42	11.40	42.23	70.31	198.09
<i>SD</i>	144.45	44.06	45.83	11.58	11.09	62.12	123.98

\* $p < .05$ \*\* $p < .01$

**Table 2***Moderated Moderation Model Predicting PTSD Symptomology*

Variables	Unstandardized coefficients			
	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI
Constant	2.070	.099	20.890	1.874, 2.266
Critical Incident Frequency	.002	.001	2.236	<b>&lt;.001, .003</b>
Work Environment Stress	.008	.003	3.108	<b>.003, .013</b>
Perceived Organizational Support (POS)	-.001	.002	-.373	-.006, .004
Critical Incident Frequency x Work Environment Stress	.000	.000	1.974	<b>.000, &lt;.001</b>
Critical Incident Frequency x POS	.000	.000	.438	.000, .000
Work Environment Stress x POS	.000	.000	1.068	.000, <.001
Critical Incident Frequency x Work Environment Stress x POS	.000	.000	.304	.000, .000

Overall model ( $N = 120$ )  $F(7, 112) = 3.35, p < .01, R^2 = .17$ **Bolded** confidence intervals indicate significance

**Table 3***Means, Standard Deviations, and Intercorrelations for Secondary Hypothesis*

	1	2	3	4	5
<b>1. Critical Incident Frequency</b>	--				
<b>2. Operational Stress</b>	.06	--			
<b>3. Organizational Stress</b>	.09	.76**	--		
<b>4. Perceived Organizational Support</b>	-.12	-.40**	-.44**	--	
<b>5. Posttraumatic Stress Disorder</b>	.22*	.39**	.19*	-.23*	--
<i>Mean</i>	168.62	66.75	66.78	115.42	11.40
<i>SD</i>	144.45	22.84	24.16	45.83	11.58

\* $p < .05$ \*\* $p < .01$

**Table 4***Operational Stress Moderated Moderation Model Predicting PTSD Symptomology*

Variables	Unstandardized coefficients			
	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI
Constant	2.918	.402	7.268	<b>2.123, 3.714</b>
Organizational Stress	-.013	.006	-2.192	<b>-.025, -.001</b>
Critical Incident Frequency	.002	.001	2.424	<b>&lt;.001, .003</b>
Operational Stress	.027	.006	4.554	<b>.015, .039</b>
Perceived Organizational Support	-.002	.002	-.907	-.007, .002
Critical Incident Frequency x Operational Stress	.000	.000	.949	.000, <.001
Critical Incident Frequency x POS	.000	.000	-.215	.000, .000
Operational Stress x POS	<.001	<.001	.677	<-.001, <.001
Critical Incident Frequency x Operational Stress x POS	.000	.000	.404	.000, .000

Overall model ( $N = 120$ )  $F(8, 111) = 4.52, p < .001, R^2 = .25$

**Bolded** confidence intervals indicate significance

**Table 5***Organizational Stress Moderated Moderation Model Predicting PTSD Symptomology*

Variables	Unstandardized coefficients			
	<i>B</i>	<i>SE</i>	<i>t</i>	95% CI
Constant	.243	.406	.599	-.561, 1.046
Operational Stress	.027	.006	4.606	<b>.016, .039</b>
Critical Incident Frequency	.002	.001	2.332	<b>&lt;.001, .003</b>
Organizational Stress	-.011	.006	-1.820	-.022, .001
Perceived Organizational Support	-.001	.002	-.554	-.006, .003
Critical Incident Frequency x Organizational Stress	<.001	.000	2.211	<b>.000, &lt;.001</b>
Critical Incident Frequency x POS	.000	.000	.274	.000, .000
Organizational Stress x POS	<.001	<.001	.954	<-.001, <.001
Critical Incident Frequency x Organizational Stress x POS	.000	.000	.083	.000, .000

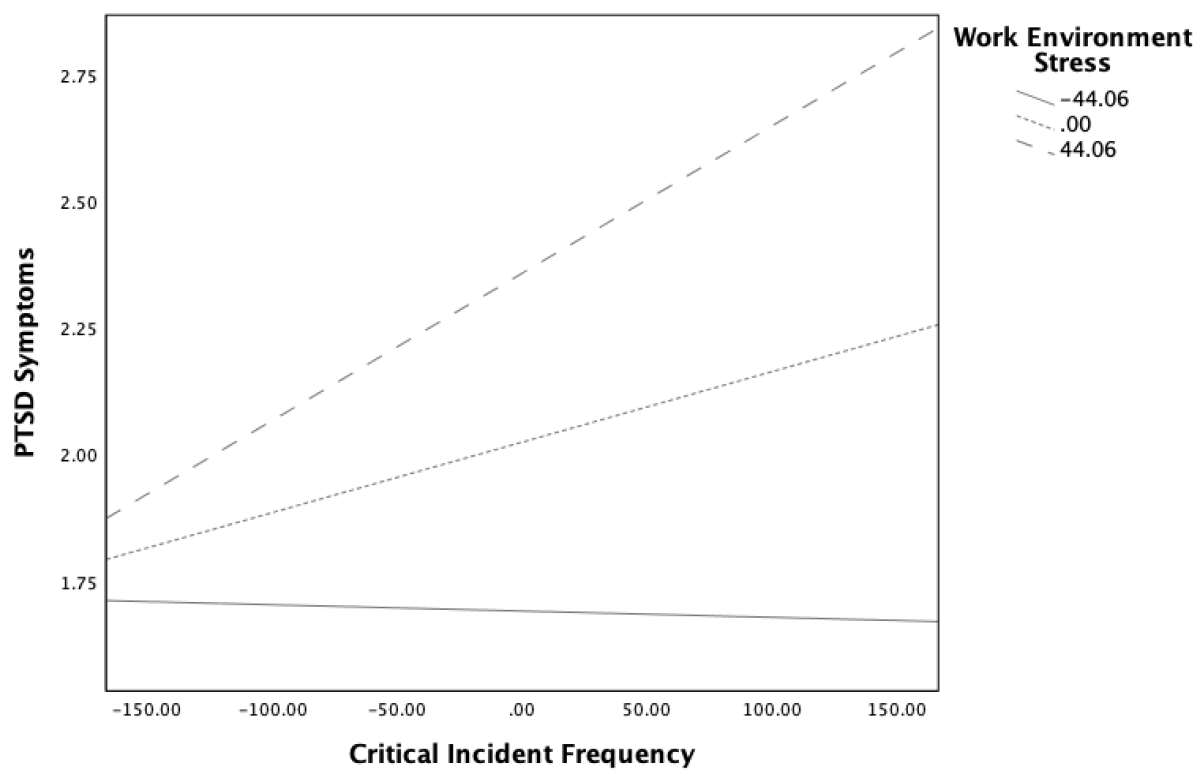
Overall model ( $N = 120$ )  $F(8, 111) = 5.12, p < .001, R^2 = .27$

**Bolded** confidence intervals indicate significance

## APPENDIX C

**Figure 2**

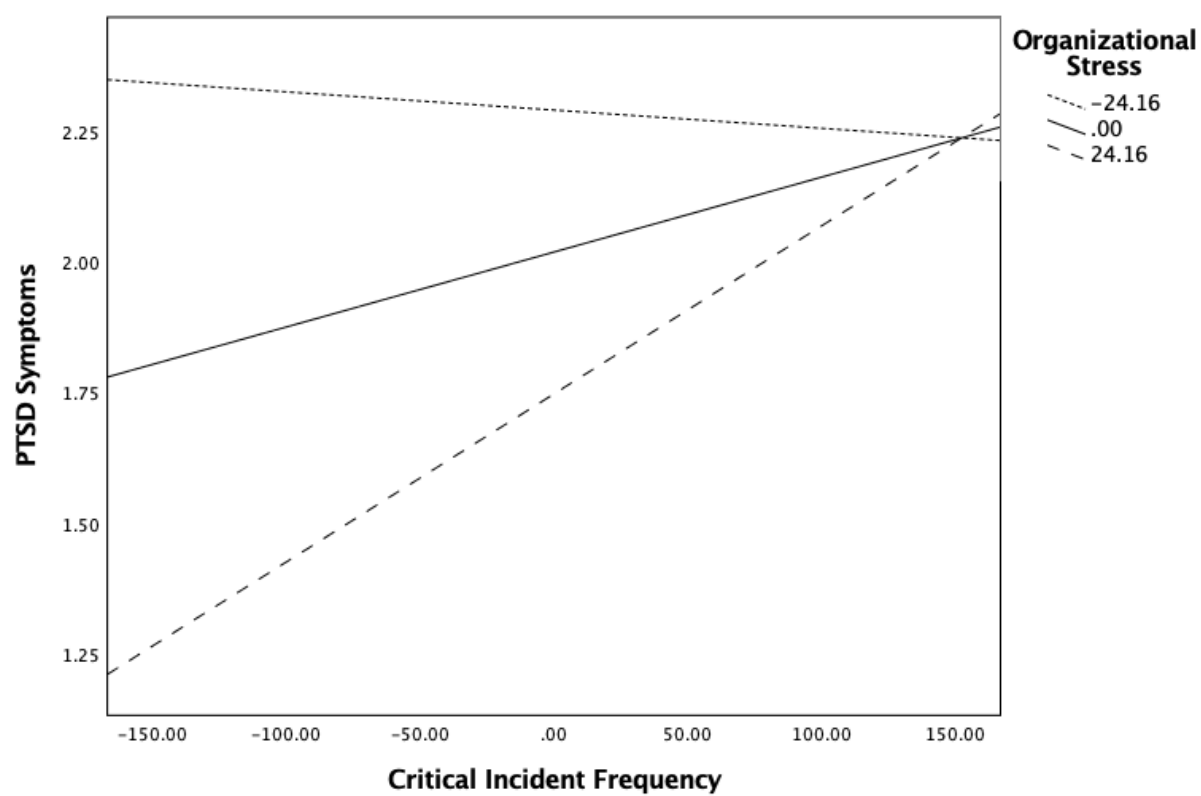
*Conditional Effect of Work Environment Stress on Critical Incident Frequency and PTSD Symptoms.*



## APPENDIX D

**Figure 3**

*Conditional Effect of Organizational Stress on Critical Incident Frequency and PTSD Symptoms.*



## VITA

### EDUCATION

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<b>Sam Houston State University</b>	2018-Present
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M.A. Clinical Psychology

Thesis Mentor: Temilola Salami, Ph.D.

Proposed Thesis: Impact of perceived organizational support on outcomes of PTSD symptomology for law enforcement officers: A moderated moderation model.

GPA: 4.00

<b>Kansas State University</b>	2014-2017
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B.S. Psychology, B.S. Criminology

Magna Cum Laude: December 2017

Advisor: Mark Barnett, Ph.D.

Psychology GPA: 4.00 - Overall GPA: 3.92

### RESEARCH EXPERIENCE

#### Laboratory Experience

Graduate Research Assistant, Clinical Psychology	2019-Present
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The Health and Resilience Initiative for Vulnerable and Excluded Groups (weTHRIVE)

Department of Psychology, Sam Houston State University

Advisor: Temilola Salami, Ph.D.

*Responsibilities include collaboration with fellow lab members, thesis development, data collection, data entry and statistical analyses using SPSS, mentoring an undergraduate student on her McNair project, maintenance of lab website, assisting in manuscript development, creation and maintenance of lab protocol, taking minutes in lab meetings. Involved in a project assessing the effectiveness of the Post Critical Incident Seminar (PCIS), which is a 3-day seminar provided to law enforcement officers that have experienced critical incidents, and responsibilities include in person data collection, decoding participant information, data entry, and sending follow up surveys after 3, 6, and 12 months*

Undergraduate Research Assistant, Social Psychology	2017-2018
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Department of Psychological Sciences, Kansas State University

Advisor: Donald Saucier, Ph.D.

*Responsibilities include collaboration with fellow lab members and graduate students to create studies to administer, entering data into SPSS to statistically analyze, review and give feedback to manuscripts created in the lab, assist in writing manuscripts*

#### Manuscripts in Preparation

Engelken, C., Salami, T. K., & **Fuller, E.** (in prep). Impact of occupational stress and supervisor support on correlates of suicide in law enforcement officers.

- Fuller, E.**, Martens, A. L., Webster, R. J., Albert, S., & Saucier, D. A. (in prep). Paid their debt to society?: Impact of belief in pure evil and belief in pure good on perceptions of former perpetrators.
- Fuller, E.**, Martens, A. L., Ray, M., & Saucier, D. A. (in prep). Belief in pure evil and belief in pure good as predictors of students' perceptions of professors.
- Salami, T. K., & **Fuller, E.** (in prep). The impact of perceived organizational support on PTSD symptomology among law enforcement officers: A moderated moderation model.
- Salami, T. K., Uhl, A., & **Fuller, E.** (in prep). Social media consumption, mental health, and academic performance: Do race and gender moderate these relations?

### **Presentations**

- Boland, G., **Fuller, E.**, Salami, T. K. (2019). Addressing mental health stigma among law enforcement officers. *Workshop to be presented at the 6<sup>th</sup> Annual Mental Health Conference by the Correctional Management Institute of Texas. Galveston, TX.*
- Fuller, E.**, Martens, A. L., Ray, M., Saucier, D. A. (2017). Belief in pure evil and belief in pure good as predictors of students' perceptions of professors. *Poster presented at Kansas State University's Annual Undergraduate Research Convocation. Manhattan, KS.*

### **HONORS, AWARDS, & COMPETITIVE FUNDING**

---

**The Graduate School General Scholarship**                      Fall 2018, Summer 2019-Spring 2020  
*Competitively awarded \$1,000 for the semesters after completing application materials, including personal statement, CV, and a letter of recommendation*

**Post Critical Incident Seminar**    Summer 2019, Spring 2020  
 Victims of Crime Act Grant through the Office of the Texas Governor  
 PI: Rita Watkins  
*Funded for the semester to work as a Graduate Research Assistant on lab related tasks, such as preparing packet materials, decoding participant information, and data entry to assess the effectiveness of the PCIS program conducted by the Law Enforcement Management Institute of Texas*

**Special Graduate Scholarship Award**    Summer 2019  
*Competitively awarded \$1,000 for the Summer 2019 semester after completing application materials, including CV and two letters of recommendation*

**CHSS Graduate Incoming Student Scholarship**    2018-2019  
*Awarded \$1,000 for the Fall 2018 semester and \$1,000 for the Spring 2019 upon maintaining above a 3.50 GPA*

**Foundation Plus Scholarship**    2014-2017  
*Awarded \$4,750 for freshman year and \$2,500 for the following years for earning a 31 on the ACT and maintaining above a 3.5 GPA*



**Semester Academic Honors**

2014-2017

*Received for earning a GPA of over 3.75 for each semester***G. H. Waite Jr. Memorial Scholarship recipient**

Fall 2014

*Awarded \$300 for first semester of freshman year for finishing in the top 5 of high school graduating class***CLINICAL & TEACHING EXPERIENCE****Practicum Experience**

Fall 2019

Texas Department of Criminal Justice – Estelle Unit

*Shadowed mental healthcare providers at the Estelle correctional facility as they interacted with inmates to conduct suicide risk assessments and threat assessments, completed mental health sick calls and referrals, and conducted counseling sessions. Additionally, observed psychiatry sessions delivered over telecommunications. Services were provided in a variety of settings, including at High Security, the Regional Medical Facility, and Special Needs Substance Abuse Felony Punishment Facility (SAFPF).*

Mock Therapy Sessions

*Conducted mock therapy sessions with students in order to practice and apply skills in a therapeutic setting.***Graduate Teaching Assistant**

Fall 2018

Abnormal Psychology

*Assisted with responsibilities for an online abnormal psychology course, including commenting on and grading class assignments and projects, as well as providing reminders to students for class assignments***Client Support Provider**

2017-2018

Pawnee Mental Health Services – Youth Rehabilitative Services

*Worked with youth clients to set and achieve goals through group and individual settings to enhance functioning, reviewed treatment plan goals with case managers and therapists to aid in clients' therapeutic experience, submitted reports depicting clients' progress, documented client incidents, and provided assistance to clients during crises when necessary***COMMUNITY INVOLVEMENT****Volunteer for Sexual Assault & Abuse Free Environment (SAAFE) House**

Fall 2018

*Assist with various responsibilities around the SAAFE House office, including sorting and organizing donations for individuals to utilize from the pantry, organizing donations for the resale shop***Volunteer for Counseling Services**

2016-2017

Kansas State University

*Assisted 4 hours a week with creating and distributing outreach materials for students on campus, helped with programs such as pet away stress, and assisted in tabling on campus to raise awareness about services provided to students*

- Resident Assistant** 2015-2017  
 Kansas State University Housing and Dining  
*Responsibilities included creating and leading programs to educate residents in the areas of diversity, leadership, health, and academics; mediating roommate conflicts; provide information to residents about on campus resources; respond to incidents of concern and complete accompanying incident reports; complete administrative tasks in the office*
- Global Women's Society** 2015-2017  
 Kansas State University Housing and Dining  
*Responsible for helping to create programs to connect the diverse women of the Jardine community together and providing opportunities for people to meet with one another*
- White Privilege Conference Attendee** Spring 2017  
 Kansas City, Missouri  
*Applied through Kansas State University's Housing and Dining and was selected to attend and represent Kansas State at the conference. The White Privilege Conference seeks to challenge systems of oppression and concepts of privilege while also providing a safe environment to discuss strategies to combat such oppression.*
- Wildcats Investing in Leadership and Diversity (WILD)** Fall 2014  
 Kansas State University  
*Participated in an 8-week program to develop knowledge and awareness in areas such as diversity and inclusivity and how it applies to campus life*

## **AFFILIATIONS**

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- |   |              |
|---|--------------|
| Graduate Student Psychology Organization          | 2019-Present |
| Psi Chi International Honor Society in Psychology | 2016-2017    |
| National Society of Collegiate Scholars           | 2015-2017    |
| Criminology Club                                  | 2014-2016    |