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Posttraumatic Stress Disorder Among Rural Emergency Medical Services Personnel

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POSTTRAUMATIC STRESS DISORDER AMONG RURAL EMERGENCY MEDICAL SERVICES PERSONNEL

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APPROVAL OF DISSERTATION

We, the faculty supervising the work of Nicole E. Bailey, affirm that the dissertation, Posttraumatic Stress Disorder Among Emergency Medical Services Personnel, meets the high academic standards for original scholarship and creative work established by the Doctor of Psychology Psy.D. Program and the College of Liberal Arts. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.

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ABSTRACT

Diagnostic criteria for posttraumatic stress disorder (PTSD) have undergone multiple revisions over the past few decades which have substantially refined our understanding of PTSD. Upon the publication of *DSM-5*, occupational exposure is now officially recognized as satisfying criterion A (exposure to a traumatic event) for the diagnosis of PTSD. First responder populations - particularly EMS personnel - have been historically understudied and warrant additional attention. The present study examines PTSD symptomology in a rural EMS population, as well as considering barriers to treatment. A total of 437 participants from West Virginia and western Pennsylvania completed a survey that included demographic information, exposure to traumatic events, PTSD symptoms, and perceived barriers to mental health care. Of those participants, 35% met criteria for provisional PTSD diagnoses. The majority of those individuals (96%) endorsed at least one traumatic event occurring as a part of their job. Barriers to accessing care in rural communities were identified, with the majority of participants endorsing personal financial difficulties, stigma, and employment as the most significant barriers. More intervention efforts are needed for rural EMS providers that target symptom recognition and treatment. Ultimately, the stigma of help-seeking behaviors should be addressed by supervisors and directors.

INTRODUCTION

Diagnostic criteria for posttraumatic stress disorder have undergone multiple revisions over the past few decades which have substantially refined our understanding of PTSD. What once was viewed exclusively as a combat-related disorder is increasingly recognized in new populations, including among first responders. The following document makes the case that first responder populations - particularly EMS personnel – have been historically understudied and warrant additional attention. The present study will therefore examine PTSD symptomology in a rural EMS population as well as considering barriers to treatment.

THE HISTORY OF POSTTRAUMATIC STRESS DISORDER (PTSD)

During World War I, a peculiar disorder known as "shell shock" afflicted thousands of soldiers (Loughran, 2012). British soldiers suffering from psychological symptoms following combat were diagnosed with shell shock; the popular opinion at the time was that the soldiers' brains were truly shocked (Crocq & Crocq, 2000; Lembcke, 2016). Moreover, physicians and psychiatrists alike argued whether this was shell shock or war neuroses; malingering or concussion; fright or something deeper. Years later, during World War II, American psychiatry was faced with this phenomenon for the first time. Multiple diagnoses were given to soldiers, including "reactions to combat" and "war neuroses" as early as 1945. It was the Vietnam War that ultimately called for a new framework of conceptualizing "shell shock." With nearly one-fourth of soldiers requiring psychological treatment, this "post-Vietnam" syndrome inspired the diagnostic category of Posttraumatic Stress Disorder (PTSD) (Crocq & Crocq, 2000).

Post-Traumatic Stress Disorder (PTSD) was first recognized by the American Psychiatric Association (APA) in the third edition of the *Diagnostic and Statistical Manual* (APA, 1980).

The essential features for PTSD according to *DSM-III* were that an individual experienced an unusual event such as rape, serious physical assault, military combat, or a severe automobile accident. The diagnosis was based on re-experiencing the event in at least one way (e.g. intrusive thoughts, dreams, flashbacks); at least three avoidant behaviors (e.g. avoiding thoughts, feelings, activities; amnesia; diminished interest in activities; detachment; restricted affect; foreshortened future); and at least two symptoms of increased arousal (e.g. difficulty sleeping, irritability, difficulty concentrating, exaggerated startle response). These symptoms must have been present for at least one month.

In 1987, the third edition of the *Diagnostic and Statistical Manual (DSM-III-R)* revised the diagnostic criteria for PTSD (APA, 1987). The first major change was broadening the concept of a traumatic event. Not only should the event be unusual to the human experience, but it would be something markedly distressing to almost any person. Such an event might include "serious threat to one's life or physical integrity; serious threat or harm to one's close relatives and friends; sudden destruction of home or community; or seeing another person who has been or is being seriously injured or killed as the result of an accident or physical violence" (p. 247). The diagnostic criteria for re-experiencing symptoms, avoidant behaviors, and symptoms of increased arousal were not altered in *DSM-III-R*.

Upon the APA's publication of the fourth edition of the *DSM* in 1994 (*DSM-IV*) (APA, 1994), the diagnostic criteria for PTSD included the most specific definition of a traumatic event: "the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of others," and "the person's response involved intense fear, helplessness, or horror" (p. 424). The criteria for re-experiencing, avoidance, and increased arousal symptoms remained similar, but included

expressions of symptoms in children. A revised edition of the *DSM-IV* was published in 2000 (*DSM-IV-TR*) (APA, 2000), but the diagnostic criteria for PTSD did not change.

In 2013, the diagnostic criteria for PTSD were revised by the APA in the *DSM-5* (APA, 2013). The noteworthy changes warrant detailed examination for the purposes of the present study. The definition of a traumatic event and the criterion for exposure to such an event was expanded in criterion A (p. 271):

A. Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:
    1. Directly experiencing the traumatic event(s).
    2. Witnessing, in person, the event(s) as it occurred to others.
    3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
    4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse).

Calhoun et al. (2012) surveyed 185 participants who were recruited for studies focused on trauma and health in a VA medical center to evaluate the impact of the changes to *DSM-5* diagnostic criteria in comparison to *DSM-IV* criteria on prevalence of PTSD. They found that 95% of the sample reported a traumatic event that met both *DSM-IV* PTSD criterion A1 and A2, but only 89% reported a traumatic event that met *DSM-5* PTSD criterion A. Friedman (2013) discussed the importance of eliminating the criterion A2 of "fear, helplessness, or horror" due to the realization that many people exposed to traumatic events deny such intense emotional

reactions, stating "this is especially true of military, police, or fire personnel who often report that they felt nothing, but that their professional training 'kicked in'" (p. 551). With these populations in mind, criterion A4 is especially critical. Unlike previous editions, *DSM-5* explicitly considers indirect exposure to trauma through an individual's profession. Friedman (2013) acknowledged that changes such as these were intended to broaden the definition of PTSD in *DSM-5* so that individuals could be evaluated on individual diagnostic thresholds, rather than concerns over the nature of the traumatic event(s). Although persons exposed to trauma through their professions could have been diagnosed with PTSD prior to the publication of *DSM-5*, it demonstrates a shift in our understanding of the disorder to explicitly recognize the potential consequences of occupational exposure. Kilpatrick (2013) observed that clinicians have always been aware of the problems now addressed in *DSM-5*, and in that regard they are not new. However, explicitly stating diagnostic criteria concerning populations who are exposed to traumatic events through their professions encourages clinicians and researchers alike to assess and treat PTSD in these identified populations. Further, he asserts that clinicians need not be concerned with whether the event constitutes "trauma" now that criterion A has been revised in this manner.

PTSD PREVALENCE AND COMMON POPULATIONS OF STUDY

According to the *DSM-5*, the estimated lifetime prevalence of PTSD among American adults is 8.7%, with women more likely than men to develop the disorder at some point in their lives (APA, 2013). The likelihood of developing PTSD is based on many factors, including the type of traumatic event and the characteristics of the individual (Lukaschek et al., 2013). Intentional traumatic events (e.g. interpersonal violence) are more likely to lead to the development of PTSD than non-intentional traumatic events e.g., natural disaster (Santiago et al.,

2013). PTSD is associated with serious physical and psychological consequences, and can result from numerous types of traumatic events (Atwoli, Stein, Koenen, & McLaughlin, 2015).

According to a study by Kilpatrick et al. (2013), the following events constituted a traumatic event when evaluating PTSD symptomology: natural disaster, accident/fire, hazardous chemicals, combat/war zone, sexual/physical assault, witnessed sexual/physical assault, witnessed dead bodies, family/close friend threat/injury, witnessed death due to violence/accident/disaster, work/secondary exposure. Other studies have found similar events to constitute a traumatic event, especially serious accidents, assaults, combat, and witnessing trauma (Lukaschek et al., 2013; Atwoli et al., 2015). The highest likelihood of developing PTSD is related to events involving interpersonal violence or military combat, and multiple exposures to traumatic events increase the risk for PTSD (Kilpatrick et al., 2013). Another study highlighted that military personnel and first responders are constantly exposed to trauma throughout their occupations, increasing their risk for PTSD (Walker, McKune, Ferguson, Pyne, & Rattray, 2016).

As our understanding of PTSD evolves and diagnostic criteria become more precise, prevalence rates of PTSD were expected to change significantly (Kilpatrick et al., 2013). However, based on field trials of the current diagnostic criteria, survey results demonstrated that *DSM-5* prevalence rates are quite comparable to prevalence according to *DSM-IV* (Friedman, 2013). Such similar rates could be due to the fact that death of a loved one was removed, but work exposure was specifically added (Kilpatrick et al., 2013). It appears as though the criteria are becoming more precise with each revision, and the current diagnostic criteria are the product of decades of clinical research, assessment, and revisions (Kilpatrick, 2013). We know now that

repeated exposure to traumatic events through certain careers could potentially lead to a diagnosis of PTSD. Given that this realization is so recent, there is little research on the subject.

POPULATION OF EMS NEEDS ATTENTION

Based on the evolution of diagnostic criteria for PTSD, we can see that the formal, clinical recognition of PTSD due to occupational exposure is recent. A high-risk population that is subject to traumatic events on a regular basis is first responders (Regehr, Goldberg, & Hughes, 2002; Walker et al., 2016). First responders include police personnel, firefighters, and ambulance personnel (Gonzalez, 2016; Regambal et al., 2015). These are the individuals who immediately attend to a scene of an accident, a crisis, or some other emergency. It has not been impossible to diagnose this population with PTSD, but it has been easy to overlook them.

For years, research focused on secondary trauma, or vicarious traumatization, as the buzz-words for experiencing symptoms similar to traumatic stress as a consequence of working with traumatized individuals (Regehr, Goldberg, & Hughes, 2002). Likewise, occupational trauma has been studied as "traumatic events attended to in the course of employment" (Shakespeare-Finch, Gow, & Smith, 2005, p. 325). Much of the literature has also referred to the experiences of first responders as critical events, rather than traumatic events. In other words, occupational exposure to trauma was viewed as high-risk, and capable of creating a traumatic aftereffect, but the literature refrained from using diagnostic terminology exclusively with the population of first responders (Fay, Kamena, Benner, & Buscho, 2006; Wagner, McFee, & Martin, 2009).

There was little consideration that first responders might have the potential for the development of PTSD, and this prevented them from being properly evaluated or diagnosed.

Some literature identified difficulties with evaluating this at-risk population because there were no measures tailored to their experiences (Wagner, McFee, & Martin, 2010). Other studies shifted the focus of their research based on the inability to assess for PTSD symptomology, focusing on factors like compassion fatigue, burnout, and secondary trauma (LaFauci-Schutt & Marotta, 2011). Although some studies claimed that first responders were not at all exposed to trauma (Kleim & Westphal, 2011), others demonstrated a shift in thinking by claiming that we should expect to see the largest rates of PTSD in first responder populations (Scully, 2011). One study did focus on nurses and ambulance personnel working in military facilities, and concluded that individuals' subjective response to a traumatic event (i.e. intense fear, helplessness, or horror) was highly correlated with the development of PTSD symptomology. However, this finding was based on an outdated criterion that was removed in *DSM-5* (Declercq, Meganck, Deheegher, & Van Hoorde, 2011).

The literature began to shift in its focus following the publication of *DSM-5*. Walker et al. (2016) concluded that, based upon the new diagnostic criteria, the lifetime prevalence of PTSD in first responders could be up to 32%. Anecdotally, Gonzalez (2016) found that more employers and the general public are becoming increasingly aware and supportive of the potential for PTSD in first responders. Although we are beginning to recognize the potential for PTSD in first responder populations, there is much lacking from the current literature.

In comparison to research focusing on other first responder populations, the current literature fails to address ambulance personnel specifically. Emergency Medical Technicians (EMTs) and Paramedics are collectively referred to as Emergency Medical Services (EMS) personnel. Despite the fact that this subgroup spends the most time and is in the closest contact with injured survivors and relatives of the deceased, they are far less studied than firefighters and

law enforcement (Marmar et al., 2006). A review of the current literature on first responders did not yield many relevant results, but of those, the focus was mostly on firefighters, considering them as a higher risk population. Wagner and colleagues (2009; 2010) focused on the effects of traumatic stress on firefighters, selecting them over other first responders because they are exposed to both physical and psychological risks, making this subgroup of first responders highly at-risk for traumatic exposure. They found that firefighters' worldviews were not significantly impacted after traumatic exposure (Wagner et al., 2009). However, they later concluded that firefighters are at a higher risk of traumatic stress symptomology (Wagner et al., 2010). Similarly, Setti & Argentero (2014) assessed the well-being of firefighters, specifying their focus on this subgroup due to the wide array of traumatic events to which they are exposed. However, a meta-analysis found that most of the treatment literature on first responders and PTSD symptomology focused on law enforcement alone, but concluded that the literature regarding first responders overall is sparse and lacking in recommendations. Out of 845 potential studies, only two were of use in identifying randomized controlled trials (RCTs) with the primary outcome of PTSD symptomology (Haugen, Evces, & Weiss, 2012). Whether the focus is largely on firefighters or law enforcement, it is clear that EMS personnel are the most understudied subgroup. However, there is some literature regarding the overall mental health status of EMS personnel.

Some research has focused on suicidality among EMS personnel. Fitch and Marshall (2016) reported that Fitch & Associates' Ambulance Service Manager Program project team surveyed more than 4,000 EMS and fire professionals about critical stress, suicide, and available support and resources. 37% of respondents reported contemplating suicide, and 6.6% of respondents had attempted suicide. Martin, Tran, and Buser (2016) also examined suicidal

ideation in first responders. They surveyed 3,036 participants from a large, urban fire department where all responders were also trained in EMS duties. They reported higher rates of suicidal ideation, plans, and attempts than general or military populations. Those firefighters who have responded to EMS calls were six times more likely to have made a suicide attempt.

Research on EMS workers and PTSD rates in countries like Iran and Pakistan has grown in recent years. As Iranmanesh, Tirgari, and Bardsiri (2013) acknowledge, "paramedic service is almost a newly established practiced in the health care system" (p. 30). Such novelty could be why, out of 400 EMS workers surveyed in south-east Iran, 94% reported moderate levels of PTSD. Similar moderate levels of PTSD were also found in a survey of 518 EMS personnel in Karachi, Pakistan (Kerai et al., 2017). The researchers found that individuals with poor coping styles were more likely to exhibit symptoms related to PTSD, depression, and anxiety. Another study in Iran surveyed over 400 hospital emergency staff members and EMS personnel to correlate certain personality traits with PTSD symptomology (Sheikhbardsiri et al., 2015). They found that conscientiousness and neuroticism were significantly related to the development of PTSD, but did not consider the rates of PTSD among respondents overall.

While all first responders appear to be somewhat understudied, it is clear that EMTs and paramedics constitute a distinct subgroup in which more study is needed. Based on the recent expansion of diagnostic criteria for PTSD and the tremendous gap in the current literature, it is essential to add to the literature regarding PTSD in EMS populations.

RURAL ACCESS TO CARE FOR PTSD

An even more specific subgroup worthy of clinical focus would be rural EMS workers. Generally, less is known about PTSD development and treatment in rural populations compared

to urban counterparts (Erickson, Hedges, Call, & Bair, 2013). Rural communities are not immune to traumatic events. In fact, in rural areas, motor vehicle accidents have been estimated to be two-to-three times more likely to result in fatalities than in urban areas (Zwerling et al., 2005). Similarly, the rates of intimate partner violence have been shown to be significantly higher in rural areas compared to urban areas (Peek-Asa et al., 2011). Because of the higher volume of traumatic exposure in rural areas, it is essential to consider the specific effects on rural EMS workers (Doherty, 2004).

Not only is the volume of traumatic exposure larger in rural areas than in urban areas, but other factors contribute to strains unique to rural EMS workers. In rural areas, there are higher rates of issues such as substance use, suicide, and older adult populations that require EMS aid. The result is fewer professionals taking care of higher volumes of traumatic events, often with more limited resources (Stamm, Lambert, Piland, & Speck, 2007). Having access to limited resources is associated with high levels of distress among emergency personnel (Declercq et al., 2011). To further complicate that issue, many EMS workers remain on-call for much longer hours than urban workers (Stamm et al., 2007; D'Andrea, Abney, Swinney, & Ganyon, 2004). There is also a greater likelihood that the EMS worker will know the victim or their family. It is estimated that one-third of the time, rural EMS workers know the victim on the scene (D'Andrea et al., 2004).

Not only are on-the-job issues more pervasive in rural settings, but the availability of care thereafter is also lacking (Regambal et al., 2015). Resources and support systems are not as readily available in rural areas as they are in urban cities (Doherty, 2004; Robinson et al., 2012). Often, rural EMS workers face professional isolation that would otherwise be a beneficial source of support and guidance (Regambal et al., 2015). The understanding of PTSD in rural

communities is significantly lacking, making evaluations and interventions difficult to implement (Erickson et al., 2013). The lack of understanding and education results in more stigma surrounding mental health services, which in turn results in EMS workers finding their own coping strategies rather than seeking services (Robinson et al., 2012). Many EMS workers adopt an avoidant coping style to avoid the details of their daily life, which may lead to symptoms of PTSD (LeBlanc et al., 2011).

FOCUS OF THE PRESENT STUDY

Posttraumatic Stress Disorder (PTSD) is a widespread clinical problem that can arise from a wide range of traumatic events. Refining the diagnostic criteria has led to increased recognition of PTSD in previously understudied populations. Rural Emergency Medical Services (EMS) personnel are subject to high-risk traumatic events as a part of their daily work routine, yet are consistently understudied. The focus of the present study has two goals:

1. To estimate the prevalence of PTSD symptoms in rural EMS workers.
2. To evaluate perceived barriers to treatment in rural settings.

It is further hypothesized that paramedics will self-report higher levels of PTSD symptoms compared to EMTs. Additionally, it is hypothesized that years of service will be predictive of PTSD symptomology.

METHOD

PARTICIPANTS

The sample size was 437 rural EMS workers. The United States Census Bureau's definition was used to determine "rural" status; by this definition, a rural area is defined as whatever is not urban. Urbanized areas are areas with over 50,000 people (Ratcliffe, Burd, Holder, & Fields, 2016). Exclusion criteria for the sample were any non-English speaking individuals, any individuals under the age of 18, and any non-EMS workers.

MEASURES

DEMOGRAPHICS

Demographic information including gender, age, race, years of service, job title, level of education, and current mental health treatment was gathered via a brief questionnaire.

EXPOSURE TO TRAUMA

The Life Events Checklist for *DSM-5* (LEC-5) is a standard self-report measure used to identify potentially traumatic events in a participant's lifetime. The LEC-5 inquires about 17 events that could potentially result in PTSD. It is intended to identify any potentially traumatic experience(s) that would be the focus of any follow-up questionnaires or interviews. Participants indicate the level of exposure to each type of event on a 6-point nominal scale. For the purposes of this study, the new LEC-5 includes a "Part of my job" endorsement, which will be helpful to differentiate between prior trauma exposure and occupational exposure. The LEC-5 does not yield a total or composite score as it is often used in combination with other measures, such as the PCL-5 for the purpose of establishing exposure to a PTSD Criterion A traumatic event. The

LEC-5 has been found to have good test-retest reliability, and it is a reliable measure of direct trauma exposure. Further, it has demonstrated good convergent validity of psychopathology related to trauma exposure (Gray, Litz, Hsu, & Lombardo, 2004).

PTSD SYMPTOMS

The PTSD Checklist for *DSM-5* (PCL-5) was administered to evaluate the presence and severity of PTSD symptoms. The PCL-5 can be used as a screener for PTSD, and can be used to make a provisional PTSD diagnosis when the Clinician-Administered PTSD Scale (CAPS-5) cannot be administered. It is best administered along with the LEC-5 to identify a Criterion A traumatic exposure. The PCL-5 has been shown to have strong internal consistency, test-retest reliability, and convergent validity (Sveen, Bondjers, & Willebrand, 2016; Blevins, Weathers, Davis, Witte, & Domino, 2015).

The PCL-5 is a 20-item self-report measure that assesses the 20 *DSM-5* symptoms of PTSD. The self-report rating scale is 0-4 for each symptom. Rating scale descriptors are: "Not at all," "A little bit," "Moderately," "Quite a bit," and "Extremely." The PCL-5 can be scored a number of ways, but a total symptom severity score can be obtained by summing the scores for each of the 20 items. With scores ranging from 0-80, a cut point of 33 is sufficient for a provisional PTSD diagnosis (Blevins et al., 2015).

BARRIERS TO ACCESSING MENTAL HEALTH CARE

The Barriers to Accessing Mental Health Care (BACE) Survey was administered to assess perceived barriers to treatment. The BACE is a 20-question survey that was developed to create a comprehensive self-administered measure to assess barriers to accessing mental health care. The measure includes questions regarding anticipated discrimination, social stigma,

disclosure concerns, stereotypes, and internalized stigma. The BACE has response categories on a Likert scale from 1 (not a barrier) to 5 (significant barrier) with higher scores indicating a greater barrier. Total scores will range from 20-100 (Frye, Koontz, & Fugett, 2015). The BACE was found to have good test-retest reliability, internal consistency, and content and construct validity. Further, the measure has been positively rated by participants, as it is readable for populations of lower education levels and with mental illness (Clement et al., 2012).

PROCEDURE

Participants were workers of EMS stations throughout West Virginia and western Pennsylvania in rural counties. Messages were sent via professional electronic listservs, representing roughly 9,250 EMS professionals. Information provided included an explanation of the present study, the researcher's contact information, and a link to the online surveys on Qualtrics. Once given access to Qualtrics, participants were first provided with a consent document that was read and agreed to before proceeding to the survey. Participants were able to navigate away from the page if they did not wish to consent to participation. Once informed consent was provided, the participants proceeded to the surveys in the following order: Demographic information, Life Events Checklist (LEC-5), the PTSD Checklist for *DSM-5* (PCL-5), and the Barriers to Accessing Mental Health Care (BACE). Once all questionnaires were completed, the participants were provided with referral information for any needed follow-up care. A link to *Psychology Today* was provided to locate local therapists. Contact information on the National Suicide Prevention Lifeline and the National Alliance on Mental Illness (NAMI) were provided as well. Finally, participants were provided with a link to a separate survey for the option of submitting their email address to be entered into a drawing for one of four $25 Amazon gift cards. These four emails were selected at random upon the conclusion of the survey. Gift

cards were sent electronically to the email address provided, so no other identifying information was gathered. The separate survey with the email addresses was deleted upon selection of the four winners.

DATA ANALYSIS

The Statistical Package for Social Scientists (SPSS) was used to conduct all analyses. Before proceeding with the statistical analyses, all incomplete surveys were omitted. To check for any outliers, normal Q-Q plots were obtained and checked for skewness. Outliers were removed by calculating the Z-scores and removing any data above or below two standard deviations from the mean.

Descriptive statistics for continuous variables were calculated using means and standard deviations. An independent samples t-test was conducted to examine the difference in PCL-5 scores between males and females. A one-way analysis of covariance (ANCOVA) was conducted to determine whether job title (EMT, paramedic, other) impacts PCL-5 scores while controlling for years of service.

RESULTS

DEMOGRAPHICS

A total of 437 participants completed the survey. On average, participants were 39 years old (SD = 12.3) with 16 years of service as an EMS worker (SD = 11.8). Most (68.7%) participants were male, and 31.3% were female. This demographic compares adequately to national averages of EMS personnel, with 68% male and 32% female (U.S. Department of Labor, 2016). Regarding marital status, the majority (58.1%) of participants were married. This

sample was limited in racial diversity, as 95.4% of participants were white. However, 82.1% of Pennsylvanians and 93.6% of West Virginians are white (U.S. Census Bureau, 2017). Most (87.2%) participants denied a prior diagnosis of PTSD, and 79.9% of participants were not currently receiving mental health care. The largest group (43.2%) of participants were paramedics, 39.6% were EMTs, and the remaining 17.2% were in the "other job title" category. These responses included supervisory roles, directors, RNs, 911 dispatchers, ambulance drivers, and dual firefighter/EMS workers.

PTSD PREVALENCE AND PREDICTORS

On average, participants scored a 24.6 on the PCL-5 (SD = 19.5). Of the 437 completed PCL-5s, 35% were clinically significant, receiving a score of 33 or higher (Blevins et al., 2015). Of the 35% with clinically significant scores, 96% endorsed at least one traumatic experience on the LEC-5 as "part of my job." For a full breakdown of events endorsed as "part of my job," see Table 1. Regarding the remaining participants who did not receive a clinical PCL-5 score, 93% endorsed "part of my job" for at least one event on the LEC-5. No differences emerged between the PCL-5 scores for males (M = 24.21, SD = 16.7) and females (M = 25.52, SD = 17.6; t (416) = -.733, p = .643) in this sample.

A linear regression was initially done to examine the relationship between years of service and PCL-5 scores ((F 1, 393) = 3.859, p = .05, Adjusted R Square = .007). Based on that trend, a one-way analysis of covariance was conducted to compare the impact of job title (EMT, paramedic, other) on PCL-5 scores while controlling for years of service. The results of the one-way ANCOVA revealed a marginally significant difference between job title (EMT, paramedic, other) when controlling for years of service, F (1, 390) = 5.099, p = .064, partial eta squared = .014, (a small effect size). Post-hoc analyses were done to compare the means, revealing that

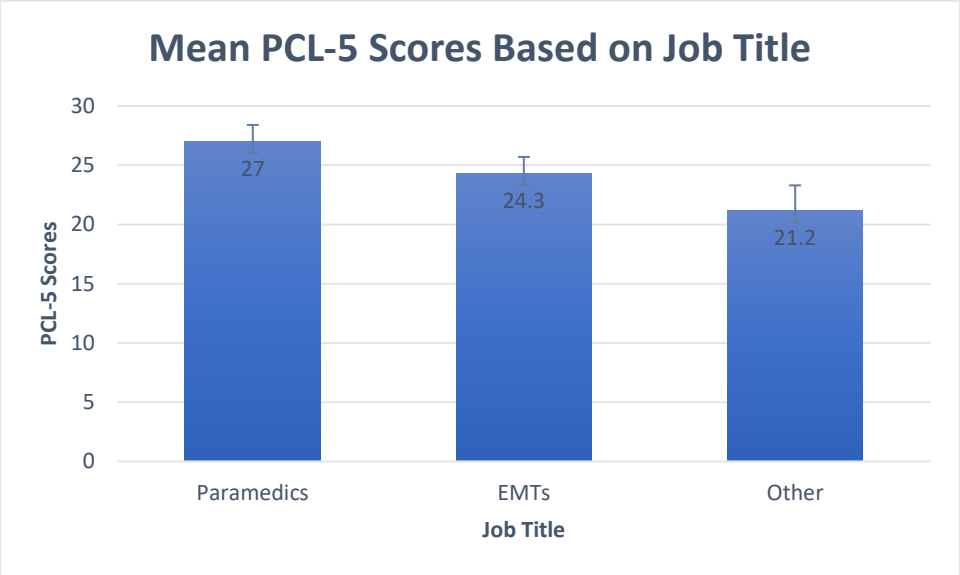
paramedics (M = 27.0) were significantly different from "other" job title (M = 21.2), but neither of these were significantly different from EMTs (M = 24.3). See Figure 1.

TABLE 1

Events endorsed as "part of my job" by rural EMS personnel

Event	**Participants who endorsed as "Part of my job" (n = 437)**	**Participants with clinically significant PCL-5 scores who endorsed as "Part of my job" (n = 153)**	**Percentage of males who endorsed as "Part of my job" (n = 297)**	**Percentage of females who endorsed as "Part of my job" (n = 138)**
Transportation accident	367	133	82%	82%
Sudden violent death	360	133	80%	79%
Sudden accidental death	356	124	79%	80%
Fire or explosion	335	118	77%	70%
Serious accident at work, home, or during recreational activity	314	111	69%	72%
Any other very stressful event or experience	296	114	68%	62%
Physical assault	294	118	66%	67%
Severe human suffering	283	109	66%	58%
Life-threatening illness or injury	278	108	59%	71%
Natural disaster	272	96	66%	48%
Assault with a weapon	250	101	55%	58%
Exposure to toxic substance	235	91	59%	38%
Sexual assault	193	73	41%	48%
Other unwanted or uncomfortable sexual experience	143	58	29%	40%
Serious injury, harm, or death you caused to someone else	83	40	19%	17%
Captivity	48	23	11%	11%
Combat or exposure to a war-zone (in the military or as a civilian)	40	13	9%	7%

FIGURE 1
Mean PCL-5 Scores Based on Job Title (N = 437)



PERCEIVED BARRIERS TO TREATMENT

Only 418 participants completed the BACE. The average BACE score was 65 (SD = 15). Scores range from 20-100, with higher scores indicating higher perceived barriers to treatment (Clement et al., 2012). Out of the 418 respondents, 36.1% endorsed personal financial difficulties as a significant barrier in their communities. Following that, the items most highly endorsed as a significant barrier were: feeling embarrassed or ashamed to seek help (35.4%); worrying about help-seeking affecting their employment (33.2%); worrying about perceptions from family and friends (32.8%); and reluctance to acknowledge a problem exists (28.9%).

DISCUSSION

Based on the current diagnostic criteria for PTSD, "experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse)" constitutes exposure to a traumatic event (APA, 2013, p. 271). This acknowledgment of the potential for traumatic events via occupational exposure has certainly been justified in the present study, with the majority of participants endorsing at least one traumatic event occurring as part of their job. The most highly endorsed traumatic event in this category was transportation accident, which coincides with previous literature that cites fatal motor vehicle accidents as being two-to-three times more likely in rural areas (Zwerling et al., 2005). Similarly, the other most highly endorsed items were sudden violent death (e.g., homicide, suicide) and sudden accidental death; substance use, suicide, and domestic violence rates are higher in rural areas, making rural EMS personnel more likely to respond to these types of critical situations than urban EMS (Stamm et al., 2007; Peek-Asa et al., 2011). Participants in the current study tended to endorse multiple traumatic events as part of their job, consistent with prior research that demonstrates multiple exposures in first responder populations increase their risk for developing PTSD (Walker et al., 2016). Thus, participants in the current study would appear to be at elevated risk of PTSD due to the types and number of events to which they are exposed as a function of their rural EMS work.

When examining rates of PTSD symptoms in the present sample, this elevated risk is evident; 35% had clinically significant PCL-5 scores, and 96% of those individuals endorsed at least one traumatic experience occurring as a part of their job. Prior studies have estimated the lifetime prevalence of PTSD among first responders at nearly one-third (Walker et al., 2016). In

contrast, the lifetime prevalence of PTSD among American adults is 8.7% (APA, 2013), and the prevalence of PTSD among American Veterans who have served in Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF) is about 13.5% (Dursa, Reinhard, Barth, & Schneiderman, 2014). Compared to the high rate of EMS personnel reporting PTSD symptoms, these rates have interesting implications for the disorder that was once considered to be exclusively combat-related. Serving one's community and exposing oneself to the traumatic events of people you are likely to know (D'Andrea et al., 2004) likely puts you at a higher risk for developing PTSD, and the risk might be even greater than with other well-documented traumatic events.

Interestingly, the risk associated with EMS work appears to outweigh gender differences typically found in rates of PTSD diagnosis. American women are more likely than men to develop PTSD in their lifetime, and this is likely due to the nature of traumatic exposures they are more likely to endure. Women are more likely than men to experience rape and interpersonal violence (APA, 2013). While this gender difference is an important distinction for the general public, the present study did not find significant gender differences in PTSD rates. This sample was quite representative of the national EMS population (U.S. Department of Labor, 2016), as roughly one-third of participants were female. Although women are likely to experience intimate traumatic events in their lifetime, the LEC-5 revealed that the exposure to traumatic events as a part of the work of an EMS provider did not differ based on gender. In other words, males and females are equally likely to respond to any type of traumatic event. Further, males and females appear equally susceptible to the development of PTSD in this role. It is therefore clear that serving as a first responder, and particularly as an EMS worker, substantially and independently increases risk of PTSD. Additional consideration is needed to determine factors which may influence this risk.

Perhaps unsurprisingly, longer duration of EMS work is associated with increased risk for PTSD. While the measures utilized in the present study did not assess total number of exposures to each type of traumatic event, it can be inferred that longer length of service is likely associated with higher risk or frequency of exposure to traumatic incidents. Despite this likely increased risk of exposure, years of service only slightly contributed to PTSD symptomology. We can speculate that those who have remained in the field for so long have normalized the traumatic exposure, or coped in other ways (i.e., substance use, avoidance) (Robinson et al., 2012; LeBlanc et al., 2011). Alternately, perhaps those with traumatic exposure early in their careers quit prematurely. According to a longitudinal study by Patterson and colleagues (2010), the average turnover rate for EMS positions over 40 diverse agencies was 10.7% annually; for agencies with volunteer staff, those rates tend to be higher. Of course, turnover depends on a number of factors, including the service and industry, so it might not be realistic to compare EMS turnover to national averages overall. Nonetheless, years of service do contribute to the development of PTSD, likely due to the susceptibility of experiencing multiple traumatic exposures over time.

After controlling for years of service, there was a marginally significant difference between paramedics and the "other" job title category, though EMTs did not differ significantly in their PTSD scores from either category. It takes roughly 150 hours of training to become an EMT, and one must be a state-certified EMT before becoming certified as a paramedic, which takes an additional 1,200 hours of curriculum to complete (Bureau of Labor Statistics, 2018). Both states represented in the current study allow individuals as young as 16 years old to work as EMTs, but with more restrictions. EMTs provide care for patients at the scene of an incident and during ambulance transportation. They assess the patient's condition and manage emergencies.

On the other hand, paramedics provide more extensive prehospital care than EMTs. In addition to those tasks, paramedics can give medication intravenously, interpret electrocardiograms (EKGs) to monitor heart function, etc. (Bureau of Labor Statistics, 2018).

Based on the findings of this study, it can be speculated that the more intensive and advanced care provided, the higher the levels of PTSD symptoms. The "other" category included job titles like ambulance drivers, dispatchers, directors, supervisors, etc., so these roles are more hands-off and at times further removed from the traumatic events. Paramedics tend to have the most intense physical contact with the victims they respond to, therefore putting them at a higher risk for the development of PTSD. EMTs, then, appear to be at an intermediate level in terms of PTSD risk. They are responding physically and providing care, but at a lower-stakes level.

Additional speculation suggests further considerations as to why the risk of PTSD among rural EMS appears to be so high. One possibility relates to the original argument of this document: EMS personnel are severely understudied and overlooked as an at-risk population. Anecdotally, EMS personnel acknowledge that they are tasked with multiple responsibilities compared to other first responder populations, yet feel undervalued in their communities. According to Morse (2016),

> The police fight crime, mostly. Firefighters primarily put out fires. EMTs respond to 911, transport heroin addicts to their methadone clinics, intubate trauma patients, take little old ladies to their doctor, deliver babies, and do long distance transfers. We clean the streets of intoxicated persons, start IVs, administer a boatload of meds, keep the peace, do wellness checks and open medication bottles.

This overwhelming range of responsibilities might be difficult to prepare and train for. In other occupational at-risk populations (i.e. police, firefighters, veterans), it might be easier to predict the type of traumatic events one will experience. It might be assumed in EMS that these ranges of events come with the job, and the culture does not allow for providers to disclose their emotions, so there is a higher likelihood of exposure to traumatic events coupled with a lower likelihood of personal disclosure. In fact, many training manuals encourage EMS providers to develop the "mental attitude of 'detached concern'" (Figley, 1995, p. 118) rather than allowing themselves to succumb to the vulnerabilities of empathy.

Many EMS providers, particularly directors, cited a "superhero mentality" as the reason for high turnover and burnout. They claimed that the rookies in the field enter with an overwhelming desire to rescue and help their communities, when in reality they will often be unable to help or save someone. According to Senn (2010), the events of September 11, 2001 "took that (superhero) concept to a whole new level" (p. 60). America began to view first responders as "the real superheroes," perhaps driving this point home even further for aspiring EMS providers. This superhero ideal is related to personality factors like boldness and fearlessness (Lilienfeld, Latzman, Watts, Smith, & Dutton, 2014). Interestingly, these personality factors of heroism tend to be related to those of psychopathy. According to Patton, Smith, and Lilienfeld (2017), "first responders exhibit significantly higher psychopathy scores than civilians but also reported significantly greater off-duty heroism and altruism" (p. 8). Personality traits such as boldness may contribute to the superhero ideal, which may explain the initial decision to enter the EMS field. However, when these individuals are faced with the harsh realities of the job, they may not have the necessary coping skills to manage trauma. According to Obosi and Osinowo (2016), neuroticism significantly predicts PTSD among first responders. Thus, their

unique personality factors like boldness and heroism could attract them to such a high-risk field, but they may not be equipped to manage the pressure this brings.

IMPLICATIONS FOR TREATMENT

As demonstrated thus far, rural EMS workers of all types appear to experience increased rates of PTSD compared with the general population, with several factors associated with this work that may increase risk. Therefore, access to appropriate mental health care and resources to enhance resiliency and coping skills are essential to protect this vulnerable population. Despite this increased need, several barriers may limit access to this much-needed care.

In the current study, personal financial difficulties emerged as the most commonly cited barrier to mental health treatment. The average annual wage for EMTs and paramedics in Pennsylvania is $33,200, and is $28,320 in West Virginia (U.S. Department of Labor, 2017). Both states are below the national average of $36,700 (U.S. Department of Labor, 2017).With 35% of the respondents reporting clinical levels of PTSD, there are likely other mental health issues occurring or co-occurring. EMS personnel are an extremely at-risk population who are traditionally underpaid and overworked in rural areas (Stamm et al., 2007). To further complicate the issue of affordable care, for companies with 50 or fewer workers, insurance plans are not mandated to cover mental health care according to the Patient Protection and Affordable Care Act (2010).

Shame or embarrassment is also a common barrier to seeking mental health care. There is significant stigma surrounding mental health services in rural areas (Robinson et al., 2012), making it difficult to reach out. Likewise, participants tended to worry about the perception of family and friends. As discussed previously, there is a significant professional isolation

associated with being a rural EMS provider (Regambal et al., 2015), so the ultimate result is professional and personal isolation. Many of the participants felt a reluctance to admit a problem even exists, which relates to the previous literature citing avoidant coping styles (LeBlanc et al., 2011).

A major barrier to seeking mental health care services in this rural EMS population is worry about help-seeking behaviors affecting their employment status. According to Greenberg and colleagues (2010), the UK Armed Forces has been using the trauma risk management (TRiM) system, a peer-to-peer screening tool designed to provide support following a traumatic event. This system is widely used and highly favorable by organizations, suggesting that peer support may be an avenue in the future to address the fear of loss of employment status.

INCORPORATING PROTECTIVE FACTORS IN RURAL AREAS

While the current study identifies multiple risk factors associated with elevated rates of PTSD in EMS workers and substantial barriers to accessing treatment in this population, it is important to consider the key protective factors in rural areas which can be mobilized to assist in prevention and intervention strategies. Often, resilience is conceptualized from an individual standpoint, rather than a systemic one (Shaw, McLean, Taylor, Swartout, & Querna, 2016). However, resiliency is highly dependent upon one's social environment, and rural cultures share characteristics that may be particularly beneficial. A unique component of Appalachian culture is the collectivist nature of the communal bonds. There tend to be stronger communal ties and family structures that often serve as a protective factor for mental health (Wagner, 2005).

Hamby, Grych, and Banyard (2018) studied predictors of well-being in a large community sample from Appalachia. While they found high levels of adverse situations, they

also found considerable well-being reported by participants. They attributed this resiliency to the individuals focusing on a sense of purpose in their lives. This ability for Appalachians to find the meaning in a tumultuous situation is a major protective factor that is often overlooked. For EMS personnel, the ability to find their sense of purpose in their occupation could be a major protective factor against the development of PTSD or related disorders. Hamby et al. (2018) also found that higher levels of optimism, compassion, and generativity were associated with positive outcomes. Such findings relate to other literature citing generativity as a protective factor for greater well-being and more positive emotional outcomes (Ostbye et al., 2018). Generativity is the need to contribute to the younger generation, and this directly relates to the role of kinship ties as a protective factor for rural and low-income populations (Taylor, 2010). A supportive community with a strong sense of kinship is a major protective factor, as high levels of social cohesion are related to superior mental and physical health, as well as lower rates of PTSD (Ozbay et al., 2007; Boscarino, 1995). For those with lower social connectedness, access to green space and a natural setting is another buffer against poor health outcomes (Cartwright, White, & Clitherow, 2018), which is another perk to living in a rural area.

These protective factors should be used to mitigate the elevated risk for rural EMS personnel. Approaching prevention and intervention efforts from a systemic standpoint could be particularly powerful, rather than placing the expectation on the EMS provider to seek their own support. Their occupational environment puts them at a high risk for adverse mental health outcomes, so that system should be incorporating more protective factors towards prevention. Rural EMS populations should be approached from a collectivist standpoint, meaning that intervention strategies should be targeted at the group rather than the individual. With generativity in mind, and the recognition that more experienced EMS providers are aware of the

harsh realities of the job, peer support programs make a great deal of sense in this field. It could be extremely useful for more experienced EMS personnel to provide a climate of warmth and understanding for the rookie who just had their first tough call, and this would be a less threatening way of decompressing. Perhaps simply acknowledging that a call was difficult is the first step towards prevention; avoidance, as we know, is surely not curative.

As noted earlier, finding the meaning in an adverse situation is highly beneficial. For EMS providers, a sense of meaning can certainly be tailored to their occupational experience through peer support. Finding their sense of purpose, coupled with that typical heroism personality type, is a very beneficial way to alleviate the stress associated with the job. Focusing on the positive aspects of what they do can be a helpful way to cope with adverse situations, and doing so with a peer reinforces a sense of shared meaning, further tapping into that need for social cohesion and kinship bonds.

Another resiliency factor unique to Appalachians is the tendency towards problem-focused coping, rather than emotion-focused (Markstrom, Marshall, & Tryon, 2000). In order to achieve buy-in from this population, it could be helpful to focus on the physical effects of stress and targeting those tangible side effects. Rather than traditional psychotherapy, more hands-on coping strategies could be utilized, which will be discussed further in a following section.

LIMITATIONS

There are several limitations to this study that should be considered. First, as this data was collected via an online survey that was sent through electronic listservs, it is possible that this study was sent to a few individuals residing or working in urban areas due to the inability to control for the spread once it was distributed. The study did not explicitly ask participants what

county or areas they served in order to maintain privacy. Further, this study was conducted in parts of rural Appalachia. It is possible that it might not be generalizable to other rural regions. Of note, approximately 500 individuals initiated participation in the study, out of a possible 9,250 that could have received notification of the study through professional listservs, constituting a 5% response rate. As random sampling was not utilized, it is possible that those who chose to participate differ from those who chose not to participate, such that PTSD symptoms may be over- or underrepresented. Finally, the PCL-5 is a brief, self-report measure of symptoms of PTSD, and while it can indicate the likelihood of PTSD, it does not take the place of a clinical interview administered by a qualified clinician.

CONCLUSIONS AND FUTURE DIRECTIONS

The present study adds to the scarce literature regarding PTSD rates among EMS personnel. To strengthen these results, clinical interviews using more refined diagnostic measures (e.g., the Clinician Administered PTSD Scale for *DSM-5*) should be used in future studies to strengthen validity of diagnosis. Further, while the present study focuses solely on rural EMS workers due to some of the unique risks they face, future studies could compare rural and urban EMS personnel. Since rural and urban areas pose different risk and protective factors, it would be interesting to see how those contribute to mental health for EMS providers. Of special interest would be comparison of help-seeking behaviors and perceived social stigma in rural versus urban EMS personnel. Traumatic events are quite likely in either setting, but more resources and knowledge of mental illness are available in urban areas. This comparison could provide more insight regarding intervention approaches in rural areas.

Ultimately, more intervention efforts need to be implemented with and made available to rural EMS providers. There is a fear of stigma and negative employment outcomes related to

help-seeking behaviors, so it is essential to change the culture and address these issues as EMS providers are first entering the field. It would be critical for directors and supervisors to inform new providers of the mental health risks associated with such an intense line of work, and ultimately let their workers know that they are able to come forward without punishment when an issue arises. Certain programs do exist that seek to de-stigmatize the effects of traumatic exposure in the field while also teaching emotion regulation skills to EMS workers. For example, Mindfulness Based Resilience Training has been implemented with police officers with some benefit (Christopher et al., 2016), and future studies could expand to evaluate efficacy for EMS personnel. Further, when considering expansion of such programs into rural EMS populations, incorporating the regional protective factors available will be essential, such as drawing upon community cohesion to facilitate greater support and reduce stigma. Despite the increased risk for this population, many opportunities exist for better protecting EMS personnel and enhancing access to treatment.

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APPENDIX A: APPROVAL LETTER

MARSHALL UNIVERSITY
www.marshall.edu

Office of Research Integrity
Institutional Review Board
One John Marshall Drive
Huntington, WV 25755

FWA 00002704

IRB1 #00002205
IRB2 #00003206

July 19, 2018

Brittany Canady, PhD
Psychology Department

RE: IRBNet ID# 1295985-1
At: Marshall University Institutional Review Board #2 (Social/Behavioral)

Dear Dr. Canady:

Protocol Title:	[1295985-1] Posttraumatic Stress Disorder (PTSD) Among Rural EMS Personnel	
Site Location:	MU	
Submission Type:	New Project	APPROVED
Review Type:	Exempt Review	

In accordance with 45CFR46.101(b)(2), the above study was granted Exempted approval today by the Marshall University Institutional Review Board #2 (Social/Behavioral) Designee. No further submission (or closure) is required for an Exempt study **unless** there is an amendment to the study. All amendments (including the addition of research staff) must be submitted and approved by the IRB Chair/Designee.

This study is for student Nicole Bailey.

If you have any questions, please contact the Marshall University Institutional Review Board #2 (Social/Behavioral) Coordinator Bruce Day, ThD, CIP at 304-696-4303 or day50@marshall.edu. Please include your study title and reference number in all correspondence with this office.

APPENDIX B: INFORMED CONSENT

Anonymous Online Survey Consent

You are invited to participate in a research project entitled "*Posttraumatic Stress Disorder Among Emergency Medical Services Personnel"* designed to analyze how on-the-job events can affect emergency medical services (EMS) workers and their mental health. The study also hopes to address treatment issues unique to rural areas. The study is being conducted by Nicole Bailey and Dr. Brittany Canady from Marshall University, and has been approved by the Marshall University Institutional Review Board (IRB). This research is being conducted as part of the dissertation requirements for Nicole Bailey.

This online survey should take about 15 minutes to complete. Your replies will be anonymous, so do not type your name anywhere on the form. There are no known risks involved with this study. Participation is completely voluntary and there will be no penalty or loss of benefits if you choose to not participate in this research study or to withdraw. If you choose to participate in the study, there will be an option to enter your email for a chance to win one of four Amazon gift cards worth $25 each. If you choose not to participate you can leave the survey site. You may choose to not answer any question by simply leaving it blank. Once you complete the survey you can delete your browsing history for added security. Completing the on-line survey indicates your consent for use of the answers you supply. If you have any questions about the study you may contact Nicole Bailey at bailey606@marshall.edu, or Dr. Brittany Canady at smith541@marshall.edu.

If you have any questions concerning your rights as a research participant you may contact the Marshall University Office of Research Integrity at (304) 696-4303.

By completing this survey you are also confirming that you are **18** years of age or older.

Please print this page for your records.

APPENDIX C: DEMOGRAPHICS
Demographic Information Form

(Please fill in the blank or circle an option if available)

1. **What is your age?**

2. **What is your gender?**

   Male

   Female

   Other (please specify):_____

3. **What is your marital status?**

   Married

   Single

   Never Married

   Widowed

   Divorced

   Live together but not married

4. **With which racial group do you identify?**

   American Indian or Alaska Native

   Asian

   Black or African American

   Native Hawaiian or other Pacific Islander

   White

   Other (please specify):_____

5. **What is your ethnicity?**

   Hispanic or Latino

   Non-Hispanic/Latino

6. **What is your highest level of education?**

   Completed some high school

   High school graduate

   Completed some college

   Associate's degree

   Bachelor's degree

   Completed some postgraduate

   Master's degree

   Ph.D., law or medical degree

   Other advanced degree beyond a Master's degree

7. **What is your employment status?**

   Volunteer

   Part Time

   Full Time

8. **What is your job title?**

   Emergency Medical Technician (EMT)

   Paramedic

   Other (please specify):_____

9. **For how long have you been an Emergency Service Worker?**

10. **Have you received a prior diagnosis of Posttraumatic Stress Disorder (PTSD)?**

    Yes

    No

11. **Are you currently receiving any mental health care? If yes, what is your diagnosis?**

    Yes, my diagnosis is:_____

    No

APPENDIX D: LIFE EVENTS CHECKLIST FOR *DSM-5*

LEC-5

Instructions: Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally; (b) you witnessed it happen to someone else; (c) you learned about it happening to a close family member or close friend; (d) you were exposed to it as part of your job (for example, paramedic, police, military, or other first responder); (e) you're not sure if it fits; or (f) it doesn't apply to you.

Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Part of my job	Not sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)						
2. Fire or explosion						
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)						
4. Serious accident at work, home, or during recreational activity						
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)						
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)						
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)						
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)						
9. Other unwanted or uncomfortable sexual experience						
10. Combat or exposure to a war-zone (in the military or as a civilian)						
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)						
12. Life-threatening illness or injury						
13. Severe human suffering						
14. Sudden violent death (for example, homicide, suicide)						
15. Sudden accidental death						
16. Serious injury, harm, or death you caused to someone else						
17. Any other very stressful event or experience						

APPENDIX E: PTSD CHECKLIST FOR *DSM-5*

PCL-5

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

APPENDIX F: BARRIERS TO ACCESSING MENTAL HEALTH CARE

Barriers to Accessing Mental Health Care Survey

To what degree do you believe the following is a barrier for individuals in your community who seek mental health care?

1= Not a barrier 2 = Minimal barrier 3 = Mild barrier 4 = Moderate barrier 5 = Significant barrier

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1. There are stigmatizing attitudes regarding mental health in the community.
   1 2 3 4 5

2. Privacy is a huge concern for residents in this area.
   1 2 3 4 5

3. Residents believe mental health care would probably not help them.
   1 2 3 4 5

4. Residents are reluctant to acknowledge that a mental health problem exists.
   1 2 3 4 5

5. Residents have concerns about the characteristics of the psychologists (i.e. age, gender, race, etc.) in this community.
   1 2 3 4 5

6. There is a widely-held belief that self-reliance is the best option when it comes to mental health issues.
   1 2 3 4 5

7. Residents feel embarrassed or ashamed regarding help-seeking behaviors.
   1 2 3 4 5

8. Residents are generally unaware of the mental health services in this community.
   1 2 3 4 5

9. Residents have difficulties related to a lack of reliable transportation.
   1 2 3 4 5

10. Residents have difficulties related to insufficient affordable child care services.
    1 2 3 4 5

11. Residents have difficulty talking about or expressing their emotions.
    1 2 3 4 5

12. Residents do not want to burden anyone else with their problems.
    1 2 3 4 5

13. Most residents would prefer to seek help from their religious leader.

1 2 3 4 5

14. Residents worry about how seeking help would affect their employment status or employment opportunities.

1 2 3 4 5

15. Residents have concern about how their family members or friends would perceive them seeking mental health care.

1 2 3 4 5

16. Many residents experience financial difficulties that prevent them from seeking help.

1 2 3 4 5

17. Residents have had a previous negative experience with mental health care.

1 2 3 4 5

18. Residents are unable to travel the long distance to see the nearest psychologist.

1 2 3 4 5

19. Residents have no available trusted family members to care for their children while they seek help.

1 2 3 4 5

20. Most residents talk about their psychological issues with their primary care physicians.

1 2 3 4 5

Other Concerns:

_____

_____

_____