# WORKPLACE VIOLENCE FOR EMS FIRST RESPONDERS AND THE RELATIONSHIP WITH MENTAL HEALTH

by

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## DEDICATION

To the selfless EMS first responders who serve the community day in and day out. Remember, you are never alone, and you continuously make a difference. Thank you for the sacrifices you make.

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## ABSTRACT

It is important to study the relationship of workplace violence to mental health of EMS first responders. It is critical to raise public awareness of this issue. Research has shown that EMS personnel experience a 22 times higher rate of exposure to workplace violence than any other worker, thus prompting the need for recognition and further action (Maguire et al., 2018). Maguire et al. (2018) found that workplace violence is prevalent, but more research is needed to show the possible links of workplace violence to depression, anxiety, and alcohol use. The current study aimed to add to the literature by assessing the relationship between workplace violence against EMS first responders and mental health symptoms. The use of a correlational study was implemented, and 19 EMS first responders recruited on Facebook participated in a Qualtrics self-report survey. The survey measured workplace violence (verbal, physical and sexual harassment) along with scores from self-assessment tools measuring depression symptoms, alcohol use, and anxiety symptoms: the PHQ-9, AUDIT, and the GAD-7. The results showed workplace violence, specifically verbal abuse occurrences in the past 12 months, had a positive and significant correlation with first responder alcohol use ($r = .65$, $p < .01$). Verbal abuse occurrences in the past 3 months was positively correlated with first responder alcohol use but was approaching the traditional significance level ($p = .067$). There were no significant correlations involving physical abuse and sexual harassment with depression, anxiety, and alcohol use. The findings of this study point toward a needed awareness of the occupational hazards of EMS work and the ways they may impact EMS first responders' mental health. There is a need for further research on this topic and interventions to support EMS first responder mental health.

## Introduction

Workplace violence (which can include physical violence, verbal abuse, or sexual harassment) is an unfortunate aspect of the job for many EMS first responders due to the occupation's unpredictable nature. Their job specifications include but are not limited to, responding to motor vehicle accidents, physical assaults, cardiac arrests, drug overdoses, falls, and mass casualty incidents, among others. Put plainly, a 911 call comes in, and first responders are dispatched out, regardless of potentially dangerous conditions that could be waiting on scene. As a result of the vast range and changing nature of call types that can be waiting, the unfortunate reality is some calls may include violence toward the first responder. Therefore, first responders providing emergency services to the public can develop negative health outcomes ranging from increased risk for posttraumatic stress disorder (PTSD) and depression, to work overload and overall negative cumulative health effects from the career they have chosen to pursue (Hruska et al., 2021). Dating back to 1978 when workplace violence was first brought to the public's attention by the EMS industry, this topic in pre-hospital healthcare has been vaguely explored over the past 40 years (Murray et al., 2020). Research conducted has categorized workplace violence to include some of the following: verbal abuse, physical abuse, sexual harassment, and sexual assault, which EMS first responders have experienced while on duty (Murray et al., 2020). In 2016 alone, over 3,500 EMS first responders were injured while on duty and seen in the emergency room due to workplace violence (Murray et al., 2020). Yet, minuscule amounts of headway have been made to address the workplace violence so frequently experienced (Murray et al., 2020). EMS personnel in the United States have 22 times higher likelihood than the average worker to be involved in occupational violence and receive injuries (Maguire et al., 2018). In a 2018 study, 65% of

first responders reported that that they were "physically attacked" during a workday (Maguire et al., 2018). Further studies have found that between 57% and 93% of EMS first responders have had at least one act of verbal and/or physical violence perpetrated against them while on duty (Murray et al., 2020). A study published in 2020 found that as the amount of exposure to violent encounters while at work increased, the symptoms of anxiety, PTSD, and depression did as well (Setlack et al., 2020). It is important to study the relationship of mental health symptoms and experiences of workplace violence because of the internalized belief that first responders see their well-being as subordinate to the patient's safety (Murray et al., 2020). Examining the potential relationship between workplace violence and mental health of the EMS responder (e.g., substance abuse and depression and anxiety symptoms) is crucial to raise public awareness and to further promote interventions to meet the needs of EMS first responders.

### *Verbal Abuse*

Verbal abuse is one category of abuse experienced by first responders. Verbal abuse is defined as "a patient/client, their friend/s, family member/s, other professional/s, or work **c**olleague/s using offensive language, yelling, or screaming with the intent of offending or frightening you" (Koritsas et al., 2009, p. 418). One research study examined data forms from EMS personnel over a 31-day period and found that 68% of the verbal abuse reports included descriptions of insults and obscenities aimed at the first responders (Grange et al., 2002). Previously analyzed systematic research has found that verbal abuse is the most common form of violence reported, and 21% to 88% of EMS first responders have personally experienced verbal abuse (Murray et al., 2020).

### *Physical Abuse*

Physical abuse is another category of abuse experienced by first responders. Physical abuse is defined as, “a patient/client, their friend/s, family member/s, other professional/s, or work colleague/s physically attacking you, or attempting to attack you. It includes behaviors such as punching, slapping, kicking, or using a weapon or other object with the intent of causing bodily harm” (Koritsas et al., 2009, p. 418). Research on 299 first responders showed that 90% had encountered a range of assaults, physical acts, or abuse from patients while on duty (Pozzi et al., 1998). The most frequently reported acts of physical violence were striking attempts, then punching, scratching, and slapping, while biting and spitting at EMS first responders followed (Murray et al., 2020).

### *Sexual Harassment*

Sexual harassment is a third form of abuse experienced by first responders. Sexual harassment is defined as “any form of sexual propositioning or unwelcome sexual attention from a patient/client, their friend/s, family member/s, other professional/s, or work colleague/s. It includes behaviors such as humiliating or offensive jokes and remarks with sexual overtones, suggestive looks or physical gestures, inappropriate gifts or requests for inappropriate physical examinations, pressure for dates, and brushing, touching, or grabbing excluding sexual touching (e.g., the genital or breast area)” (Koritsas et al., 2009, p. 418). A study conducted in 2009 found that 56% of paramedics had endured sexual harassment while on duty, and females compared to their male counterparts were at a higher risk for exposure to sexual harassment (Koritsas et al., 2009).

### *Depression/Anxiety/Alcohol Use*

EMS first responders are not immune to the mental health outcomes that can

result from the stressors of their work, including workplace violence. Acute critical incidents and chronic incidents ranging from patient death to communication difficulties with coworkers are regularly encountered while on duty and weigh on the mental health of the first responders involved (Petrie et al., 2018). A recent meta-analysis examined 18 studies addressing mental health in a total of 30,878 first responders; and the overall prevalence of mental health diagnoses included PTSD (11%), depression and anxiety (both 15%), and general psychological distress (27%; Petrie et al., 2018). Furthermore, alcohol misuse is a common occurrence among first responders. In the realm of fire services, heavy drinking and frequent alcohol consumption can be an anticipated part of the first responder community (Jones, 2017).

### *Hypotheses*

The overarching objective of the current study is to examine the presence of workplace violence and the potential relationship with the mental health of EMS first responders. I hypothesize workplace violence toward EMS first responders is directly related to their overall mental health related symptoms and alcohol use, such that higher levels of workplace violence will be related with higher levels of depression, anxiety, and alcohol use.

## Method

### *Participants*

The participants in this study included EMS first responders with certification levels including EMTs and paramedics ($N$ = 19; 12 males, 7 females) who voluntarily responded to this online survey. Participants needed to be at least 18 years of age to complete the survey. The participants also needed to meet the inclusion criteria of actively working the EMS 911 system for the past 12 months. There were 22 total responses, but 3 were excluded due to not meeting inclusion criteria. Participant ages ranged from 21 years old to 62 years old ($M$ = 32.06, $SD$ = 10.94). The participants' states of residency included Texas, California, Arizona, and Nevada. The study was approved by the Texas State University Institutional Review Board before participant recruitment and data collection were conducted. Participant ethnicity included 89.5% White/non-Hispanic and 10.5% Asian and Pacific Islanders. The level of certification of the participants included emergency medical technicians (EMT) and paramedics. The number of years participants worked as EMS first responders ranged from 1 to 45 years in the field.

### *Materials*

The survey questions were constructed to gain a further understanding of the relationship between workplace violence and EMS first responders' mental health. The survey began with questions assessing the demographics of the participants including age, gender, ethnicity, state of residency, and two questions pertaining to how long they had been working in the EMS system and level of certification. There were 10 questions asked to identify alcohol use, 7 questions assessing severity of generalized anxiety, 9 questions assessing severity of depression, 23 questions assessing workplace violence, and 3 questions regarding conditions impacted by COVID. These last 3 questions were created for the purposes of this study.

### *AUDIT*

The AUDIT (Alcohol Use Disorders Identification Test; Saunders et al., 1993), composed of 10 questions, was originally developed through a shared project orchestrated by the WHO to screen for unhealthy and hazardous alcohol use (Saunders et al., 1993). This self-assessment examines 3 factors: alcohol intake, potential dependence on alcohol, and harm related to alcohol use. This tool was designed with the goal of identifying alcohol use behaviors before detrimental habits develop and to facilitate early intervention by providers. The AUDIT response coding is scored as 0, 1, 2, 3 or 4, excluding questions 9 and 10 which use 0, 2, and 4 as the only response options. Total calculated scores can range from a minimum of 0, to include non-drinkers, and a maximum score of 40. According to the WHO guidelines, AUDIT scores that range from 1 to 7 indicate a potentially low-risk level of alcohol use. The next bracket of scoring ranges from 8 to 14 and indicates potentially hazardous or harmful alcohol consumption by the participant. The last bracket includes a score of 15 or more and suggests the possibility of alcohol dependence/moderate-severe alcohol use disorder. Example items include, "During the past year, how often have you failed to do what was normally expected of you because of drinking?" and “How many standard drinks containing alcohol do you have on a typical day when drinking?” It should be noted that the AUDIT is a self-assessment tool and not a diagnostic tool.

### *PHQ-9*

The PHQ-9 (Patient Health Questionnaire; Kroenke et al., 2001) is a 9-question screening tool that is utilized to screen for and assess the severity of depression of the participant. The scale is broken down into 5 categories indicating different levels of

depression severity. The PHQ-9 total scores range from a minimum of 0 to a maximum score of 27. PHQ-9 scores that fall between 0-4 suggest minimal severity levels of depression. The following range of scores, 5-9, suggests mild severity levels of depression. Scores ranging from 10-14 suggest moderate severity levels of depression. Scores ranging from 15-19 suggest moderately severe levels of depression, and scores ranging from 20-27 suggest severe levels of depression. Examples from the PHQ-9 include, "Over the last 2 weeks, how often have you been bothered by any of the following problems?" such as, "feeling down, depressed, or hopeless" and "Poor appetite or overeating." It should be noted that the PHQ-9 is a screening tool and not a diagnostic tool.

***GAD-7***

The GAD-7 (Generalized Anxiety Disorder; Spitzer et al., 2006) questionnaire is a screening tool used to screen for and measure severity of anxiety. The GAD-7 is a 7-question assessment that is calculated by adding the scores of each item together to describe the participants' anxiety covering a 2-week period (Spitzer et al., 2006). The GAD-7 scale begins with the scores 0-4 suggesting minimal severity levels of anxiety. The next range of scores 5-9, suggest mild severity levels of anxiety. Scores ranging from 10-14 suggest moderate severity levels of anxiety and the range of scores 15-21 suggest severe levels of anxiety. The response categories in the GAD-7 are "not at all," "several days," "more than half the days," and "nearly every day." Corresponding to the four categories of responses, are the scores that are coded as 0, 1, 2, and 3. Examples from the GAD-7 include, "Over the last 2 weeks, how often have you been bothered by the following problems?" such as "trouble relaxing" and "Feeling afraid as if something awful might happen." It should be noted that the GAD-7 is a screening tool and not a

diagnostic tool.

### *Workplace Violence Survey*

The workplace violence questions were taken from an online survey study conducted by Maguire and colleagues that examined levels of workplace violence experienced by first responders (Maguire, et al., 2018). The survey used was based on an assessment tool created by the World Health Organization studying international violence against EMS personnel spanning over 13 different countries. The questions covered sexual harassment, verbal abuse, and physical abuse. The 23 questions extracted from the Maguire survey are utilized to assess the type, severity, and course of action taken after abuse occurred. Questions extracted from the survey include, "In the last 12 months, have you been verbally abused in your workplace?"

### *Design and Procedure*

This was a correlational study. The IRB approved survey was constructed through Qualtrics, an online survey formatting software, and the link was published to my personal Facebook page with a recruitment request for potential participants who met the inclusion criteria. The option to share my original post to reach more first responders was permitted by the IRB. The first page of the survey was an informed consent form that stated the sensitive nature of the survey questions. Participants were informed on the purpose of the study and that no foreseeable risks were expected by voluntarily participating. It was made known that participants could stop the survey at any point. The 60-question survey was published to Facebook on September 2nd, 2022 and closed for data collection on September 20th, 2022. Pearson correlations were computed to examine the relationship between the workplace violence and mental health variables, and correlations were considered to be significant at the $p < .05$ level.

## Results

Descriptive and inferential statistics of the survey results were computed. Means and standard deviations were computed for each of the surveys included. A total of 17 participants completed the AUDIT questions assessing alcohol use ($M$ = 13.94, $SD$ = 5.055). According to the AUDIT score calculator, a mean score of 13.94 would fall in the range of scores indicating "hazardous or harmful alcohol consumption." Of the 17 participants, 7 met the criteria for "moderate-severe alcohol use disorder." With the calculated data collected from the 19 participants that responded to the depression survey, the PHQ-9 mean was 15.10 with a standard deviation of 3.98. A mean of 15.10 means that the average score met criteria for "moderately severe depression." Furthermore, 3 participants met the criteria for "severe depression." The GAD-7 mean score was 11.94 with a standard deviation of 4.41. The GAD-7 assessment scale states that scores between 11-15 fall in the "moderately severe anxiety" category. In this study, 9 participants met criteria for "moderately severe anxiety." Some questions were left unanswered and were not considered in further data analysis.

### *Verbal Abuse*

There were 17 participants who completed the 7 verbal abuse questions asked in this survey. When asked "In the last 12 months, have you been verbally abused in your workplace," there were 15 "yes" and 2 "no" responses. When asked the frequency of verbal abuse, 31.6% said "all the time" and 47.4% answered "sometimes," no other responses were given. A total of 93% of participants who answered the verbal abuse

questions said that they considered this to be a typical incident as a first responder. When asked in the past 3 months the approximate number of times the participant had been verbally abused while on duty, the reported number of occurrences ranged from 2 to 60, and one participant stated "I lost count" as a response. When they were asked the same question but in a 12-month time period, the number of occurrences ranged from 10 to 150 and again a participant stated "I lost count" as a response. Furthermore, 52% of participants stated they "took no action" as a response to the occurrence, 10.5% stated they "tried to pretend it never happened," and 57.9% said they "told the person to stop" as a response to the incident. A total of 21% stated they "reported it to a senior staff member," but none of the participants stated they "sought counseling" after an incident of verbal abuse. Correlations for verbal abuse were ran against the total scores on the GAD-7, PHQ-9, and AUDIT (see Table 1). The number of times participants reported being verbally abused in the past 12 months was positively and significantly correlated with alcohol use ($r$ =.65, $p$ = .008). The number of times participants were verbally abused in the past 3 months while on duty was shown to be positively correlated with alcohol use; however, the correlation was approaching statistical significance ($r$ = .485, $p$ = .07). Verbal abuse occurrences in the past 3 ($r$ = -.064) and 12 months ($r$ = .063) were not significantly correlated with depression severity scores. Lastly, verbal abuse occurrences in the past 3 ($r$ = .003), and 12 months ($r$ = .242) were not significantly correlated with anxiety.

***Sexual Harassment***

There were 17 participants who responded to the 7 questions regarding sexual harassment in the workplace. When asked in the past 12 months, has sexual harassment occurred in the workplace, 4 participants responded with "yes" and 13 stated "no." When

asked the number of times they were sexually harassed on duty in the past 12 months, answers ranged from 2 to "+10" and one participant stated, "I lost count." When asked how they responded to the incident 100% of the participants stated they "told the person to stop." Also, 1 participant "reported it to a senior staff member," and none of the participants stated they "sought counseling" after the incident of sexual harassment. Correlations of sexual harassment with workplace violence were not computed due to a lack of data as only 4 participants answered "Yes" to the sexual harassment questions.

### *Physical Violence*

There were 17 participants who responded to the physical violence questions. When asked "have you ever been physically attacked while on duty," 16 stated "yes" and 1 stated "no" as a response. A total of 78.6% of the participants stated that they would consider this a typical incident at work. When asked the approximate number of times they were physically attacked while on duty in the past 3 months, answers ranged from 0 to 20 incidences. In the past 12 months, the range of physical violence was 0 to 40. When asked how the participants responded to the physical violence, 3 participants "took no action," 1 participant "pretended it never happened," 9 participants "told the person to stop," and none of the participants "sought counseling" as a response. A total of 5 participants reported they "completed incident/accident form" following the incidents of on duty physical violence. Correlations for physical violence were ran against the total scores on the GAD-7, PHQ-9, and AUDIT. Physical violence occurrences in the past 3 and 12 months were not significantly correlated with alcohol use ($r$ = .234, $r$ = .225). Next, physical violence occurrences in the past 3 and 12 months were not significantly correlated with depression severity scores ($r$ = -.350, $r$ = -.346). Lastly, physical violence occurrences in the past 3 and 12 months were not significantly correlated with anxiety

severity scores ($r$ = -.308, $r$ = -.374). The calculated results demonstrated that physical violence was not significantly correlated with depression, anxiety, or alcohol use scores in this study.

### *COVID Questions*

When asked about COVID-19, 3 out of the 14 participants responded "yes" to the question "Did the COVID-19 pandemic make you seek out forms of self-medicating (e.g., drugs, alcohol, other risky behavior) in order to keep working as a first responder?" A total of 8 of 13 participants reported "The level of workplace violence has increased" and 1 out of 13 reported the "level of workplace violence has decreased" when asked about level of violence experienced since the beginning of the COVID-19 pandemic.

## Discussion

The results of this study partially supported the hypotheses. Workplace violence, specifically verbal abuse, was related to mental health in EMS first responders in the form of greater alcohol use. Depression and anxiety scores in this sample were high but were not significantly correlated with occurrences of workplace violence. Being an EMS first responder means seeing people live out the worst day of their lives every day, and first responders are expected to do so while taking care of themselves. Being a first responder is a high intensity career that commands emotional and physical skills that take years of training. However, when they fall short of self-care and healthy means of coping, there is a need for public awareness of the problem and increased mental health resources to support EMS first responders. Findings from this study of 19 EMS first responders illustrate that there are high mean self-reported scores for alcohol consumption, depression symptoms, and anxiety symptoms. This indicates there may be mental health

concerns that deserve attention. Based on the results of this study, open discussion and formation of new ideas to better meet the mental health needs of EMS first responders needs to be addressed.

### *Limitations*

Measuring workplace violence in the realm of pre-hospital emergency medicine is a harsh and complex task. Due to the nature of such a topic, there were several limitations of this study. The perceived idea that EMS first responders are well aware of the high demands and risk echoes back to the EMS first responders, who may believe that reporting these issues does not matter to the public and therefore completing surveys such as this one, is pointless. In addition, the sample size of this study was small and therefore limits generalizability to a greater population of first responders. The sample size also limited the statistical analyses that could be done. A further limitation of this study is the lack of questions regarding preexisting mental health illnesses and diagnoses. Furthermore, the survey was dispersed via means of a social media app; those that do not have access to such an app were automatically excluded and therefore limited availability of more participants. Lastly, there may be other variables in addition to workplace violence that are related to mental health that were not measured in this study.

### *Conclusion and Future Research*

The greater application of the results obtained can be applied to prompt further research supporting the need for interventions to support EMS first responders and their mental health. Future researchers may want to take a longitudinal approach and examine the long-term impacts that the above study could not account for in regard to determining the temporal precedence of the selected variables. In addition, constructing a future

survey that included past and current EMS first responders may add valuable insight. Choosing a different platform to recruit participants may increase the sample size that proved to limit the generalizability of the results. Although the sample size was small, high levels of reported depression and anxiety symptoms and alcohol use demonstrated the common theme of negative coping practices due to occupational stressors that, in turn, calls for more consideration of mental health within the EMS community. Future research should focus on reconstructing the negative outlook and stigmas associated with discussing sensitive topics such as workplace violence and alcohol abuse among first responders. Furthermore, the results promote the need for providing more extensive resources to help EMS first responders with their alcohol consumption. The goal of this and future research is being able to identify additional variables that are positively correlated with alcohol use, depression, and anxiety in first responders and formulate methods that will have corrective solutions. Recognition of the relationship between workplace violence and mental health (i.e., substance abuse and depression and anxiety symptoms) of EMS first responders needs to be discussed in a large-scale effort to raise public awareness and promote interventions to meet the needs of EMS responders.

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**Table 1**

Correlations between Workplace Violence Verbal Abuse Occurrences and Mental Health Symptoms (Depression, Anxiety, and Alcohol Use)

| Measurement Tools | Last 3 Months of Verbal Abuse (number of occurrences) | Last 12 Months of Verbal Abuse (number of occurrences) |
|---|---|---|
| **GAD-7** | .003 | .242 |
| **PHQ-9** | -.064 | .063 |
| **AUDIT** | .485± | .654** |

** $p < .01$. ± $p < .10$

*Note.* GAD-7 is a measure of anxiety symptoms. PHQ-9 is a measure of depression symptoms. AUDIT is a measure of alcohol use.