

RESEARCH REPORTS

# THE ROLE OF EMOTIONAL INTELLIGENCE IN TURNOVER INTENTION AMONG EMS PROVIDERS

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## ABSTRACT

The Emergency Medical Services are strained in the face of high workforce turnover and substantial cost pressures. Voluntary workforce turnover exacerbates direct and indirect cost pressures including training, productivity loss, loss of talent, and covering vacancies. Further, high turnover rates are associated with decreased quality of care and increased likelihood of medical errors. Reduction of voluntary turnover is therefore of practical interest for worker retention and cost reduction. While a robust body of literature is dedicated to exploring precursors of turnover, few studies have explored affective factors leading to turnover in emergency medical service clinicians. Key questions investigated are (1) the relationship between trait emotional intelligence (EI) and turnover intention (TI) and (2) the relationship between EI and TI controlling for known predictors of turnover intention. A convenience sample (n=446) was obtained through an online survey created with validated EI, turnover, stress and other instruments and distributed to EMS providers via agencies and online forums. Analytic methods include t-tests, Pearson correlations, and linear regression. Higher trait EI was found to result in decreased turnover intention both at the global ( $r = -.31, p < 0.001$ ) and factor levels (Wellbeing,  $r = -.22, p < 0.001$ ; Self-Control  $r = -.19, p < 0.001$ ; Emotionality,  $r = -.35, p < 0.001$ ; Sociability,  $r = -.17, p < 0.001$ ). While EI is found to predict turnover intention, other factors such as physical health, perceived stress, and income may be better predictors of turnover intent. Among the important implications of this study is that trait EI should be included in discussions of job turnover of EMTs and paramedics, especially in human resource planning. In addition, it highlights that the mental and physical health of EMS clinicians deserves closer attentiveness by researchers, clinicians, policymakers and EMS managers.

## INTRODUCTION

The Emergency Medical Services industry is experiencing unprecedented demand amidst lean operating margins, escalating cost pressures including voluntary turnover, and limited financial reimbursement as a result of archaic federal reimbursement standards (Avesta Systems & the American Ambulance Association, 2018; Mobile Integrated Healthcare and Community Paramedicine (MIH-CP) 2nd National Survey, 2018; Panel, 2019; Rehkopf & Chamberlin, 2019). A high rate of voluntary turnover results in recurrent costs which may be preventable. Reduction of preventable costs is particularly desirable in the EMS industry where narrowing operating margins are the norm. The rate of

voluntary turnover, while having wide distribution, among EMS professionals is exceptionally high (20%-30%) (Avesta Systems & the American Ambulance Association, 2018) and exceeds that of other similar emergency service and healthcare occupations.

Further, elevated rates of voluntary turnover have been found to reduce the quality of patient care and results in a less efficient workforce. High turnover results in a workforce comprised of novice-level healthcare providers as opposed to experienced providers. In related medical professions, novice providers are more likely to incorrectly identify a patient's clinical presentation, fail to intervene appropriately, fail in task management, and commit medication delivery errors, as compared to experienced providers (Hruska et al., 2016; Lowe, Ireland, Ross, & Ker, 2016; Saintsing, Gibson, & Pennington, 2011).

## OBJECTIVES

Understanding the antecedents of voluntary turnover may provide opportunities to intervene, such as development of training programs, and altering hiring practices to reduce voluntary turnover, its associated costs, and medical errors. A variety of antecedents of turnover have been studied both in EMS and similar professions including compensation (Avesta Systems & the American Ambulance Association, 2018; Blau, Chapman, Gibson, & Bentley, 2011; Chapman, Blau, Pred, & Lopez, 2009), tenure (Chapman et al., 2009), and an employee's commitment to an organization (Chapman et al., 2009). Quitting intention, also known as Turnover Intent (TI), is a well demonstrated as an antecedent of actual turnover (Lambert, Lynne Hogan, & Barton, 2001) and therefore selected for study as a predictor of turnover among EMS professionals. Turnover intent, an individual's intended likelihood to separate from an organization, is distinct from actual turnover (e.g. an employee leaving) and from employee retention (e.g. an employer's ability to prevent turnover). Actual turnover may occur for voluntary or involuntary reasons (e.g. employee separation from an organization following disciplinary action). Voluntary turnover may be due to preventable organizational (e.g. job characteristics) or individual (e.g. job satisfaction) characteristics. Voluntary turnover may also be due to non-preventable causes (e.g. following a spouse due to job relocation). An employee electing to leave an organization, or 'voluntary turnover', is the intersection where organizational strategies meet individual intention and behaviors (Holtom, Mitchell, Lee, & Eberly, 2008). Voluntary turnover is a multiform construct reflecting various components of an individual's work-related attitudes, organizational commitment, social alignments, personal characteristics, and economic needs (Abelson, 1987; Berry, 2010; Bothma & Roodt, 2013; Kaplan, 2021; Lum, Kervin, Clark, Reid, & Sirola, 1998). The decision to leave employment is a decision which is not typically taken lightly and involves significant deliberation. Turnover intention therefore is a good predictor of subsequent leaving behavior (Kaplan, 2021; Mobley, Horner, & Hollingsworth, 1978). Turnover intention is demonstrated to be the most proximal antecedent of turnover (Hom, Lee, Shaw, & Hausknecht, 2017), and to be a strong predictor of actual turnover (Doede, 2017; Griffeth, Hom, & Gaertner, 2000). This study investigates the roles of individual antecedents to turnover intention among EMS clinicians.

Among variables demonstrated to have a relationship with turnover and turnover intent in professions similar to EMS, such as nursing (Hong & Lee, 2016), is an aspect of personality termed Emotional Intelligence (EI) (Kostantinos V. Petrides, 2010; K. V. Petrides &

Furnham, 2000; K. V. Petrides, Pita, & Kokkinaki, 2007; K. V. Petrides, Pérez-González, & Furnham, 2007).

Emotional Intelligence is a term coined by Peter Salovey and John Mayer (Mayer & Salovey, 1997) and popularized by Daniel Goleman (Goleman, 1995) through his well-received book *Emotional Intelligence*. The term emotional intelligence is used popularly to describe a social intelligence. Somewhat enigmatically, the term emotional intelligence, from a construct validity perspective, is used to refer to two distinct constructs. Emotional intelligence meets the specific criteria of an Intelligence (I) through tests of maximum performance abilities often termed 'ability EI.' Separately, EI may refer to a specific group of traits (e.g. sociability) within the domain of Personality (P) factor space that are typically evaluated using self-report measures. Other conceptualizations, such as the Emotional Quotient Inventory (EQ-I) developed by Bar-On (Bar-On, 1997) blend, as measured via self-report questionnaires, information pertaining to both constructs. These blended conceptualizations tend to have low construct validity though are demonstrated to predict work-related outcomes. This research investigates the role of Emotional Intelligence (EI), within the domain of personality factor space, and its relationship to work-related outcomes.

Higher emotional intelligence, within personality factor space, can predict work outcomes such as decreased intent to leave and negative work-related behaviors (Miao, Humphrey, & Qian, 2017a, 2017b) as well as other known antecedents of turnover intention such as stress (Mikolajczak, Roy, Luminet, Fillée, & de Timary, 2007; O'Connor, Nguyen, & Anglim, 2017), mental health, and physical health (Baudry, Grynberg, Dassocheville, Lelorain, & Christophe, 2018; Martins, Ramalho, & Morin, 2010). Emotional Intelligence and its relationship to turnover has not been studied in relation to EMS providers. EI may also be enhanced through tailored training and coaching activities (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009; Ruttledge & Petrides, 2012). EI, as measured with the Trait Emotional Intelligence Questionnaire, may be assessed both at the global level and for discrete components (K. V. Petrides, 2009; K. V. Petrides & Furnham, 2000). Investigation of EI in relationship to turnover is therefore both of academic interest and practical application. The objective of this investigation is to examine (1) whether a relationship between emotional intelligence and turnover intent exists among practicing EMS professionals and (2) to explore the role of health and demographic variables in a potential relationship. Depression, stress, anxiety, and poor physical health, prevalent among EMS clinicians (Bentley, Crawford, Wilkins, Fernandez, & Studnek, 2013; Huang et al., 2022; Khan, Conduit, Kennedy, & Jackson, 2020), are investigated as each are demonstrated predictors of turnover intention. The role of demographic variables demonstrated to be predictors of turnover and turnover intention in EMS, and similar healthcare professions, are also explored (e.g. tenure and income) (Avesta Systems & the American Ambulance, 2018; Griffeth et al., 2000). Race is included as there is mixed evidence as to the effect of race on turnover intention (Griffeth et al., 2000; J. R. Jones & Harter, 2005; McKay et al., 2007). Factors which mediate the relationship between race and turnover intent, (e.g. supervisor – employee pairings) (J. R. Jones & Harter, 2005), were excluded due to length considerations of the survey instrument. Of note, national data pertaining to race among EMS clinicians is likely to be underreported (National

Association of State, 2020). Emotional Intelligence, at the factorial level, is demonstrated to correlate with gender and therefore clinician gender is of specific interest in this study (Petrides, 2009).

## METHODS

### PARTICIPANTS

Participants in the study are currently practicing EMS professionals. There were 446 submitted responses to the survey of which (289) were complete and utilized in analysis. There were 182 (38.6%) EMTs, 10 (2.1%) AEMTs, 242 (51.4%) Paramedics, 4 Advanced Practices Nurses or Physician Assistants (1.0%), 22 Registered Nurses (4.8%), and 9 (2.0%) providers listing "other" certification. Only those respondents noting certification level as an EMT, AEMT, or paramedic were included in the study resulting in 191 (44.0%) EMTs and 242 (56.0%) paramedics. Respondents were 70.0% male, 91.0% White, 7.0% Hispanic or Latino). EMTs were primarily female (56%) while paramedics were primarily male (68%).

### PROCEDURE

A national sample of participants were recruited via adaptation of snowball sampling to include use of internet forums (Baik et al., 2019), as there is no national database of EMS providers and there is no standard methodologies for accessing EMS professionals. Approximately one-third of professionals belong to the professional association National Registry of EMTs, however, use of this registry for the intended work had limited applicability due to oversampling concerns. Participants were recruited via internet forums where the target population was likely to participate, and via email distributed by EMS agency administrators. Forums were identified via Facebook and LinkedIn groups with the search terms "EMS", "Emergency Medical Services", "EMT", "paramedic," "fire EMS," and "prehospital." EMS administrators were identified via a request to State EMS officials and regional EMS offices following the work of prior researchers (Sporer, 2016). Permission to post to the public forum was obtained from forum administrators. Use of internet sites where target populations frequent, respective of potential limitations of a non-representative sample, is a well-accepted method of internet sampling techniques when access to small hard-to-reach, unique, or underrepresented populations are sought (Best, Krueger, Hubbard, & Smith, 2001; Bradley, 1999; S. Jones, 1998; Nosek, Banaji, & Greenwald, 2002), as is adaptation of snowball sampling to include use of social media (Sadler, Lee, Lim, & Fullerton, 2010). Prior work pertaining to coping mechanisms among EMS providers utilizing similar methodology was found to have produced a sample representative of EMS providers in the United States (Bentley, Crawford, Wilkins, Fernandez, & Studnek, 2013). A link to a publicly available survey hosted in a secure environment was made available from June until August 2020.

Participation in the survey was voluntary, a waiver of consent obtained, and the study received IRB approval. Participants in the survey were able to elect to stop taking the survey or elect not to complete the survey at any time. Data were collected and managed in REDCap electronic data capture tools at New York Medical College and was exported to Stata/IC version 16.1 for analysis in a .csv file. Five (\$20) gift cards were raffled as a financial incentive to increase response rates as financial incentives have been found to be a cost-effective method among healthcare providers to improve response rates (Y. I. Cho, Johnson, & VanGeest, 2013). A power analysis, conducted using G\*Power version 3.1.9.7,



indicated that 87 participants were required to detect a small linear regression effect size at 80% power and  $\alpha = .05$ .

## DATA

### SURVEY MEASURES

The survey included prior validated measures: Trait Emotional Intelligence Questionnaire - Short Form (TEIQue-SF) (Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016; Mikolajczak, Luminet, Leroy, & Roy, 2007; Petrides, 2009; Petrides & Furnham, 2000; Petrides, Pérez-González, et al., 2007); Turnover Intention Scale - 6 item (Bothma & Roodt, 2013), Perceived Stress Scale - 10 item (PSS-10) (Baik et al., 2019; Cohen, Kamarck, & Mermelstein, 1983), General Anxiety Disorder - 7 item (GAD-7) (Alharthy, Alrajeh, Almutairi, & Alhajri, 2017; Jordan, Shedden-Mora, & Löwe, 2017; Loewe et al., 2008; Spitzer, Kroenke, Williams, & Löwe, 2006); Patient Health Questionnaire - 9 item (PHQ-9) (Kroenke, Spitzer, & Williams, 2001; Kurt Kroenke et al., 2009; MacGregor, Funderburk, Pigeon, & Maisto, 2012; Thibodeau & Asmundson, 2014); Maslach Burnout Inventory (Christina, Susan, & Michael, 1996; Enzmann, Schaufeli, & Girault, 1995); and questions from the Behavioral Risk Factor Surveillance System (BRFSS) (Pierannunzi, Hu, & Balluz, 2013). Questions from prior surveys of EMS professionals were used for EMS specific, e.g. shifts worked (Sporer, 2016), questions.

The TEIQue-SF is the most widely used instrument to measure trait EI (Siegling, Saklofske, & Petrides, 2015). The TEIQue-SF yields a global score ( $\alpha = .87$ ,  $M = 5.07$ ,  $SD = .34$ ) and subscale scores including emotionality ( $\alpha = .66$ ,  $M = 5.02$ ,  $SD = .9$ ), wellbeing ( $\alpha = .81$ ,  $M = 5.09$ ,  $SD = .87$ ), self-control ( $\alpha = .63$ ,  $M = 4.49$ ,  $SD = .59$ ), and sociability ( $\alpha = .65$ ,  $M = 5.08$ ,  $SD = .89$ ) (Petrides, 2009). The Turnover Intention Scale - 6 (TIS-6). The TIS-6 is a short form version of the TIS-15 (Bothma & Roodt, 2013). The TIS-6 is a six-item self-report measure. The TIS-6 is target specific, meaning, respondents provided scores when asked to reflect specifically on their attitudes towards their primary agencies. Perceived stress was measured via the Perceived Stress Scale. The perceived stress scale is a 10-item measure ( $\alpha = .89$ ,  $M = 15.1$ ,  $SD = 7.2$ ). A total score that describes overall perceived stress is derived by summing the scale items (Cohen, Kamarck, & Mermelstein, 1994). Anxiety was measured via the General Anxiety Disorder (GAD 7) 7-item self-report questionnaire which is a commonly utilized screening tool for generalized anxiety disorder. ( $\alpha = .91$ ,  $M = .89$ ,  $SD = .77$ ). A single global score is created from a sum of the response scores (Pfizer). Following the work of previous researchers GAD-7 was treated as a continuous variable and use of a mean score was utilized (Barzilay et al., 2020; Singh, Cumberland, Ugarte, Bruckner, & Young, 2020). For screening purposes, the PHQ-9 scores range from 0-27. Each of the item responses are scored from (0 = "not at all" to 3 = "nearly every day;  $\alpha = .89$ ,  $M = .68$ ,  $SD = .62$ )." Scores are summed resulting in a 0-27 global severity score. The MBI is a copyright 22-item self-report measure which is therefore not reprinted here. It is a widely utilized tool to measure burnout including EMS professionals (Boudreaux, Mandry, & Brantley, 1997; Edwards & Tindle, 2020). Respondents are directed to respond to a series of statements on a 7-point Likert scale from (0) Never to (6) Every day in response to a series of statements such as "I feel emotionally drained from my work." The responses are summed, and an average generated to create three scores reflecting the components of occupational burnout; Emotional Exhaustion (scores range from 0-54;  $\alpha = .92$ ,  $M = 2.04$ ,  $SD = 1.40$ ), Depersonalization (scores range from 0-30;  $\alpha = .77$ ,  $M = 1.74$ ,

SD = 1.33), and Personal Accomplishment (scores range from 0-48;  $\alpha = .77$ ,  $M = 4.39$ ,  $SD = 1.03$ ). A row mean was utilized in order to include cases with missing responses. The construct of occupational burnout exists along a continuum. Following prior researchers, the MBI is treated as a continuous variable and linear regression utilized for analysis (Firth & Britton, 1989; Leiter & Maslach, 2009).

#### TRANSFORMATION OF VARIABLES

Several variables were transformed for analyses.

A tenure variable was created using five-year increments as most providers leave EMS within their first period of certification typically 3 years or 5 years (the majority of States utilize 5-year certification periods). Difference in turnover intention by categories of years in EMS with and without first year turnover intention broken out was evaluated via Tukey's test. The difference in means were found not be significant for all categories. Therefore, the categories were collapsed into  $0 \leq 4$ ,  $5 \leq 10$ ,  $10 \leq 20$ , and 20 years or more.

The survey originally included multiple provider levels. For the preliminary analysis, retention of all provider levels was kept in order to provide a descriptive analysis of respondents. Emotional intelligence, regardless of certification level, was presumed to be correlated with turnover intention (Miao et al., 2017a). Certification level was transformed into a dichotomous variable for the main analysis.

Emergency Medical Responders (EMRs) were excluded from the survey as the primary role of an EMR is to provide a level of care similar to first aid and to activate the EMS response system, including higher levels of care. The intermediate certification AEMT was collapsed into EMT in order to treat EMT and paramedic certification as a dichotomous variable for the purpose of analysis. The dichotomous variable of EMTs = 0 and paramedics = 1 was retained for descriptive purposes.

For the purpose of the main analysis EMTs and paramedics were combined into a single category under a new variable. T-tests were run to assess whether there was a difference in global emotional intelligence or turnover intention between EMTs and paramedics, and no significant difference in mean turnover intention or global emotional intelligence was found. Box and whisker plots were generated for the factor-level emotional intelligence between EMTs and paramedics revealing mean factor EI of participants is consistent with TEIQue EI norms.

Additional demographic variables were included and subject to transformation. Gender was recoded as a binary variable; all respondents indicated either male or female. A t-test was run to assess difference in means by EI demonstrating no significant difference in global EI or turnover intention between males and females. Gender was included as prior research has yielded mixed results regarding the effect of gender on leaving behaviors and turnover intention (Bruyneel, Thoelen, Adriaenssens, & Sermeus, 2017; S. Cho, Johanson, & Guchait, 2009; Y. J. Cho & Lewis, 2012; Xu, 2008). Gender was included in the linear regression analysis as a control variable.

Geographic regions were created following Bureau of Economic Analysis regions for descriptive purposes (Bureau of Economic Analysis, 2020; U. S. B. o. L. S. U.S. Department

of Labor, 2020). Providers were categorized by state(s) in which they indicated certification for descriptive purposes.

Income was collapsed into a binary variable reflecting household incomes less than \$50,000/year and greater than \$50,000/year, following the work of previous researchers, and included in the linear regression analysis.

For the main analysis, education was collapsed into a binary variable of attainment versus no attainment of a four-year college degree and included as a control variable in the linear regression analysis. An expansive body of literature addresses social, health, and economic outcomes of attainment of a college degree (Hout, 2012). T-tests were run prior to collapsing the variable. No difference in turnover intention or emotional intelligence were found between attainment of two-year degree versus a four-year degree among study participants. Attainment of a four-year college degree was therefore retained as a binary variable.

The variable of age was included in the linear regression analysis. There was no transformation of the age variable. Age is included as a control variable as it is demonstrated to be positively correlated with stress and anxiety, and the association is well studied (Osmanovic-Thunström, Mossello, Åkerstedt, Fratiglioni, & Wang, 2015; Welzel et al., 2019). Further, generational differences may impact turnover intention and was included following the work of previous researchers (Leiter, Jackson, & Shaughnessy, 2009; LeVasseur, Wang, Mathews, & Boland, 2009).

Employment related variables were included both for analysis and descriptive purposes. Employee primary role was included for descriptive purposes. Employment status was included following the BFRSS (2013) survey instrument. A binary variable was created including employed for wages = 1 and not employed for wages = 0, as turnover intention is dependent on attachment to an entity and providers currently working with an EMS agency were sought. Volunteer EMS clinicians were excluded from study as reasons for volunteers leaving may differ substantially from those of individuals employed for wages (Patterson, Moore, Sanddal, Wingrove, & LaCroix, 2009).

Employment as a firefighter was included as a dichotomous variable representing employed versus not employed as a firefighter following the work of previous researchers (Chapman et al., 2009). Concurrent employment as a firefighter is negatively related to turnover intention among EMS employees (Chapman et al., 2009). Employment as a firefighter is included as a control variable in the linear regression analysis.

Type of agency was evaluated for descriptive purposes and subsequently excluded from the main analysis due to changes in the categories utilized in research by Federal EMS governing bodies (National Association of State EMS Officials, 2020).

T-tests were run to assess the variables employment outside of EMS, current occupation as a student, participation in EMS as a steppingstone to a new degree or to a new career, and were omitted from the main analysis having found no significant difference in turnover intention for the respective variables.

A variable was generated and coded to reflect average hours per week worked at the employee's primary agency with the cut points of less than 40 hours per week, 40- 59 hours

per week, 60-79 hours per week, and eighty or more hours per week. While EMS agencies may recognize 36 hours as full-time status, to remain consistent with prior literature (Sporer, 2016; U.S. Department of Labor & Statistics, 2020), the preceding noted cut points were selected as 40 hours per week is typically considered full time status. There was no significant difference in turnover intention found in part time versus full time employed clinicians. Employer determined status as part-time, per diem, or full-time status was not included in the survey instrument.

Pearson correlations were run to assess average hours worked at the primary agency and hours per week worked and were found to not have a significant relationship with turnover intention. Both variables were excluded from the main analysis. The number of agencies at which a provider works is included for descriptive purposes. A Pearson's correlation was run on number of agencies on turnover intention and was found not to be significant. It was therefore excluded from the main analysis.

#### SAMPLE DESCRIPTION

Study participants were paramedics (56%) and EMTs (44%). Most study participants were male (69.9%), worked full time (75.4%), and held a four-year college degree or above (54.6%). EMTs were primarily female (56%) while paramedics were primarily male (68%). 89.6% of respondents indicated they were employed for wages, and most indicated they work for only one EMS agency (56%), with no particular shift dominating their work schedule (47.7%).

#### ANALYSIS

##### PRELIMINARY ANALYSIS

Several one-sample t-tests were run. We looked to see whether EMTs and paramedics were similar in EI and in TI prior to deciding whether EMTs and paramedics could be collapsed into a single category for analysis. Further, EMTs and paramedics have been demonstrated to have different turnover rates. No significant differences were found in emotional intelligence between EMTs ( $M = 5.00$ ,  $SD = .62$ ) and paramedics ( $M = 5.12$ ,  $SD$

Variable	Description and metrics	N	%
Certification level	0 = EMT	191	44
	1 = Paramedic	242	56
Race	0 = Other	34	9.2
	1= White Caucasian	334	90.8
Country	1 = United States	354	96.2
	0 = All other countries	14	3.8
Primary service area	0 = City	133	40.2
	1 = Non-city	198	59.8
Gender	0 = Male	265	69.9
	1 = Female	114	30.1
Marital status	0 = All other relationships	101	43.4
	1 = Married	207	56.25
Highest level of education	0 = Does not have 4-year college degree	159	45.4
	1 = Has 4-year college degree	191	54.6
Income	0 = Below \$50,00	61	16.7
	1 = \$50,000 or more	305	83.3
Hours per week	0 = Part time	80	24
	1 = Full time	325	76
Number of agencies	0 = 1 Agency	196	60
	1 = 2 Agencies or more	131	40
Shift worked	0 = Works set shifts	165	52.2
	1 = Works various shifts	151	47.8
Has occupation outside of EMS	0 = No	193	55.5
	1 = Yes	155	44.5
Participant is also an employed firefighter	0 = No	279	83.8
	1 = Yes	54	16.2
Participant is a student	0 = No	268	77.9
	1 = Yes	76	22.1
History of Chronic Disease	0 = No	213	67
	1 = Yes	105	33

Table 1. Transformed variables.



= .65)  $t(304) = -.164$ ,  $p = .68$ ,  $d = -.19$ , or in TI between EMTs ( $M = 2.69$ ,  $SD = .88$ ) and paramedics ( $M = 2.85$ ,  $SD = .97$ )  $t(282) = -.128$ ,  $p = .20$ ,  $d = -.15$ .

A significant difference was found in number of hours worked between EMTs ( $M = 39.35$ ,  $SD = 21.62$ ) and paramedics ( $M = 52.28$ ,  $SD = 1.31$ )  $t(316) = -6.0$ ,  $p < .001$ ,  $d = -.68$ . However, there was no significant difference in turnover intent between full-time and part-time providers. For this reason, hours worked was excluded from the main analysis.

No significant relationship between race and turnover intention was found in preliminary analysis. While race is of interest due to different turnover patterns, in the presence of underrepresentation in the workforce (Griffeth et al., 2000), there was insufficient variability in the sample to test and draw inference.

Tenure and age predict leaving intentions both in other professions and in EMS. Both were considered for inclusion in the main analysis. A significant small correlation was found between age  $r(284) = -.12$ ,  $p < .05$  and turnover intention. No significant correlation was found between overall tenure and turnover intention  $r(287) = .01$ ,  $p = .93$ . Both were selected to be included in the main analysis.

We also investigated whether there was a difference in global emotional intelligence between males and females. Although secondary, this could be informative because if differences exist between men and women in EI, more effective training could be created. In other populations, global trait emotional intelligence is found to differ at the factor level. We investigated whether the same finding occurred in this population to determine whether gender should be included as control variable in the mediation analyses. No significant difference, as anticipated, was found in global emotional intelligence between males ( $M = 5.08$ ,  $SD = .67$ ) and females ( $M = 5.05$ ,  $SD = .55$ )  $t(308) = .40$ ,  $p = .69$ ,  $d = .05$ . At the factor level, sociability was found to significantly differ between males ( $M = 5.178$ ,  $SD = .89$ ) and females ( $M = 4.84$ ,  $SD = .85$ )  $t(306) = 3.01$ ,  $p < .01$ ,  $d = .38$  as did emotionality between males ( $M = 4.92$ ,  $SD = .94$ ) and females ( $M = 5.27$ ,  $SD = .76$ )  $t(307) = -3.14$ ,  $p = .01$ ,  $d = -.40$ .

Using Pearson's correlations, we also looked for relationships between EI, the mental health variables (perceived stress, anxiety, and depression) physical health, and component scales of occupational burnout. This was done to provide a more detailed understanding of how all the key variables relate to each other. In addition, it is possible that these correlations may provide insight to advancing and understanding provider health. EI had a significant relationship with each of the main variables of interest, therefore, each were subsequently included in the main analysis. Emotional Exhaustion of the MBI subscale is demonstrated to be similar to the construct of perceived stress. Significant and large correlations were found between the two presented in Table 1.

A power analysis, conducted using G\*Power version 3.1.9.7, indicated that 87 participants were required to detect a small linear regression effect size at 80% power and  $\alpha = .05$ . Therefore, we generally assume that all analyses going forward had sufficient power to detect the desired effects. In order to focus on the target population, of EMS providers working primarily in an EMS role, cases which included licensure other than EMT or paramedic were excluded from the analysis. It would have been preferable to exclude providers working as a firefighter, as working as a firefighter is negatively related to turnover intention. However, due to the small sample of responses that indicated status

Variable	1	2	3	4	5	6	7	8	9
1. Emotional Intelligence	-								
	309								
2. Turnover Intention	-.34***	-							
	287	287							
3. Perceived Stress	-.70***	.43***	-						
	284	303	307						
4. Anxiety	-.47***	.32***	.70***	-					
	304	287	291	307					
5. Depression	-.58***	-.34***	.74***	.73***	-				
	302	287	291	305	305				
6. MBI Subscale Depersonalization	-.37***	.42***	.45***	.33***	.36***	-			
	295	287	298	298	298	208			
7. MBI Subscale Emotional Exhaustion	-.50***	.60***	.66***	.55***	.58***	.62***	-		
	296	287	290	299	298	208	299		
8. MBI Subscale Personal Accomplishment	.31***	-.16**	-.39***	-.17***	-.22***	-.18**	-.19***	-	
	296	287	290	299	299	208	299	299	
9. Physical Health	-.26***	.26***	.28***	.28***	.31***	.14*	.25***	-.17**	-
	300	280	282	208	294	289	290	290	395

Note: MBI = Maslach Burnout Inventory  
\*p < .05. \*\* p < .01. \*\*\*p < .001

Table 2. Pearson's correlations of turnover intention, mental health, and physical health variables.

as both an EMS provider and as a firefighter (57) there was not sufficient power to parse out firefighters. Therefore, firefighters were included in the population of EMTs and paramedics.

## MAIN ANALYSES

### QUESTION 1: DOES TRAIT EMOTIONAL INTELLIGENCE PREDICT TURNOVER INTENTION?

To investigate the relationship between emotional intelligence and turnover intention a Pearson correlation was performed. Pearson correlation was selected for analysis following the work of Petrides & Furnham (2006). The results showed a moderate negative correlation between global trait emotional intelligence and turnover intention,  $r(287) = -.34, p < 0.001$ .

### QUESTION 2: WHICH OF THE EMOTIONAL INTELLIGENCE SUBSCALES ARE CORRELATED WITH TURNOVER INTENT?

EI is demonstrated to negatively correlate with turnover intention as a result of the prior finding. We subsequently sought to understand whether the four sub-scale factors of EI account for the relationship with turnover intention among EMS providers. Given the four subscales, it may be possible that interventions to reduce turnover are tailored to specific factors of EI.

A Pearson correlation was chosen to identify if any of the emotional intelligence subscales (emotionality, wellbeing, self-control, and sociability) are correlated with turnover intention. A linear regression was not selected for use due to the subscale factors being closely related within emotion-laden aspects of personality. Each of the subscales was found to significantly correlate with TI. Results are presented in Table 2.

Variable	1	2	3	4	5
1. Turnover Intention	-				
	287				
2. Wellbeing	-.23***	-			
	287	307			
3. Self-control	-.19***	.33***	-		
	286	305			
4. Emotionality	-.35***	.44***	.38***	-	
	287	306	306		
5. Sociability	-.17**	.34***	.11*	.27***	-
	286	308	308	306	307

Note: Degrees of freedom are listed immediately below the r value for the variable of interest  
\*p < .05. \*\*p < .01. \*\*\*p < .00

Table 3. Pearson’s correlation matrix among turnover intention and emotional intelligence subscales.

including gender, tenure, employment as a firefighter, having completed tertiary education and income. Race was excluded from analysis due to participants primarily being white (95%) which did not present sufficient variability to test.

A One-way ANOVA was conducted to compare the effect of emotional intelligence on turnover intention. The results demonstrated the effect of the considered variables was significant  $F(14, 254) = 5.24, p < 0.001, \text{adjusted } R^2 = 0.18$ . It was found that perceived stress significantly predicted turnover intention as did physical health and income. Additionally, tenure predicted turnover intention only among providers holding EMS licensure for more than 10 and less than 15 years. Results are presented in Table 4.

LIMITATIONS

This study garnered responses from providers across a wide geographic area and exceeded the minimum necessary sample size. However, the present research, like all research, is not without its caveats. One such caveat is the sample. First, the sample size may

QUESTION 3: DOES PERCEIVED STRESS, MENTAL HEALTH, OR DEMOGRAPHICS PREDICT TURNOVER INTENTION?

We investigated whether EI, perceived stress, anxiety, depression, physical health, and demographics, independent of each other, were correlated with turnover among EMS providers. Identifying which factors predict turnover may allow for development of human resource practices or tailored interventions to support providers thereby reducing turnover.

A multiple linear regression was conducted to predict turnover based on: emotional intelligence; mental health variables including perceived stress, anxiety, and depression; physical health (absent days from work due to poor health); and demographic variables in-

Variable Type	Effect	B	t	SE	p	95% CI	
						LL	UL
Emotional intelligence	Global emotional intelligence	-.14	-1.14	.11	.25	-.37	.10
Mental health	Perceived stress	.29*	2.18	.13	.03	.03	.59
	Anxiety	.06	.60	.10	.55	-.14	.28
	Depression	.06	.45	.14	.65	-.21	.33
Physical health	Number of days in poor health	.02*	2.05	.04	.04	.00	.04
Years in EMS	5 ≤ 10	.22	1.16	.19	.25	-.15	.59
	10 ≤ 15	.07	.35	.20	.73	-.32	.46
	15 ≤ 20	.44*	2.00	.22	.05	.01	.87
	20 years or more	.20	.98	.20	.33	-.20	.60
Demographic	Female <sup>a</sup>	-.12	-.93	.12	.35	-.36	.13
	Age	.00	-.29	.01	.77	-.01	.01
	Employment as a firefighter <sup>b</sup>	-.02	-.11	.14	.91	-.29	.26
	Has a four-year college degree <sup>c</sup>	.10	.97	.11	.34	-.10	.31
	Income <sup>d</sup>	-0.35*	-2.14	.16	.03	-.67	-.03
Constant		3.00	4.13	.73	0.00	1.57	4.43

Note: <sup>a</sup> Male = 0 Female = 1, <sup>b</sup> Employed as a firefighter = 1 Not employed as a firefighter = 0, <sup>c</sup> Does not have a four-year college degree = 0 Has a four-year college degree = 1, <sup>d</sup> Income less than \$50,000 = 0 Income \$50,000 or greater = 1.  
\*p < .05. \*\*p < .01. \*\*\*p < .001

Table 4. Linear Regression Including Coefficients with the Dependent Variable Predicting Turnover Intention.

have been insufficient to make definitive inferences about the broader EMS populations. EMS professionals and EMS/Firefighter professionals were included in the main analysis due to the sample size which precludes evaluation of the results in the context of solely professional EMTs and paramedics. Second, it included only respondents who had access to the internet and who either had access to Facebook, were members of closed Facebook groups, or had received a request for completion from an administrator which may result in a non representative sample. In addition, the survey was self-report and did not allow for verification that participants were EMS providers as no personal identifying information was collected including state licensure numbers.

## CONCLUSIONS

This research presents the first analysis of trait emotional intelligence and turnover intention among EMTs and paramedics in the United States. Our general conclusion is that emotional intelligence predicts turnover intention such that as EI increases, turnover intention decreases. The results support the work of prior researchers (Miao et al., 2017a). The finding was not as robust as preferred, however the findings do demonstrate the role of emotional intelligence in turnover intention.

While EI, among the studied variables, was found to predict turnover intention it was not found to uniquely predict turnover intention. We found that of the studied variables, predictors other than emotional intelligence may be better predictors of turnover intention, including perceived provider stress, income, and physical health. EI did not predict TI independent of other studied variables. In part this may be due to the strong relationships found among the mental health variables and turnover intention. Consistent with prior research we found that higher EI predicts: lower perceived stress (Mikolajczak et al., 2007), lower reported anxiety and depression (Ali, Amorim, & Chamorro-Premuzic, 2009; Mikolajczak, Luminet, & Menil, 2006; Mikolajczak, Roy, Luminet, Fillee, & de Timary, 2007), and better physical health (Andrei & Petrides, 2013; Mikolajczak et al., 2006; Mikolajczak et al., 2007). Further, the finding that EI predicts the subcomponents of occupation burnout is consistent with prior research (Mikolajczak, Menil, & Luminet, 2007).

## RECOMMENDATIONS

Recognizing the role of EI in the workplace not only benefits individual providers but also may benefit the larger EMS system and employers. EMS providers are steeped in clinical education and operational aspects of EMS. Focusing on management of the emotional aspects of work and professional development in those aspects is rarely considered. Additionally, further investigation of the role of education in turnover intention outcomes is warranted. Consistent with prior work education was collapsed into a dichotomous variable in this study as an expansive body of literature addresses the economic and health outcomes of obtaining a college degree (Hout, 2012). Opportunities for future work include investigation of the role of employer determined per diem, part-time, and full-time status, in addition to consideration of provided benefits in relationship to mental health, physical health, and turnover intention. Due to sample size, respondents with dual roles as firefighters were included in analysis. Future investigation is warranted to better understand whether holding dual roles as a firefighter, versus as a solely an EMS clinician, results in different patterns of turnover intention. Also of interest, in the United States an increasing number of colleges are offering degree-granting

programs for EMS clinicians. The effects of obtaining additional education and discipline-specific education should be further explored among EMS students and clinicians. Providing a focus on the individual provides an opportunity to focus attention on the emotional aspect of personality and to promote an opportunity to engage in professional development. Emotional intelligence training may be a beneficial practice for inclusion to HR practices. As EI is a demonstrated mediator of perceived stress turnover intention relationship, inclusion of EI training may support the mental health of the workforce. Emotional intelligence may be a useful screening tool in hiring selection. While EI should not be exclusively utilized as a pass/fail for hiring decisions, it may provide additional insight in hiring decisions.

This study has highlighted the need to better understand the role of EI among EMS providers and its relationship to outcomes of interest among providers including physical health, mental health, and turnover. Future research could delve into the relationships between EI and TI exploring the role of mental and physical health. Following the COVID-19 pandemic, and a developing volume of research on health effects of EMS providers, opportunity exists for reassessment of pre- and post- pandemic effects. There is substantial opportunity to apply different and more expansive modern models of turnover including equity, job offers or shocks, and generational experiences. Once a better understanding of EI and its relationship to its respective outcomes is reached, programs can be developed to target specific aspects of EI development.

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