Summer 8-24-2018

The Impact of Emotional Intelligence and Affective Behavior on Paramedic Student Field Internship Success

Jim Lambert
Brandman University, Lambertjim@mac.com

The Impact of Emotional Intelligence and Affective Behavior on Paramedic Student Field Internship Success

A Dissertation by

Jim Lambert

Brandman University

Irvine, California

School of Education

Submitted in partial fulfillment of the requirements for the degree of

Doctor of Education in Organizational Leadership

August 2018

Committee in charge:

Carlos V. Guzman, PhD, Committee Chair

Jonathan Greenberg, Ed.D.

Walter Buster, Ed.D.

BRANDMAN UNIVERSITY

Chapman University System

Doctor of Education in Organizational Leadership

The dissertation of Jim Lambert is approved.

_____, Dissertation Chair

Carlos V. Guzman, PhD

_____, Committee Member

Jonathan Greenberg, Ed.D

_____, Committee Member

Walter Buster, Ed.D

_____, Associate Dean

Patricia Clark-White, Ed. D

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ACKNOWLEDGEMENTS

The completion of this journey would not have been possible without the love and trust of my wife Katie, whose constant presence was the foundation for literally everything I have done and accomplished for over 2 decades. Whether away from home on firefighting assignments for days or deployed overseas for months . . . you never wavered. Katie, thank you for being my partner and my better half (more like three quarters).

To my Abby Rose—who despite being cursed with similar personality traits to your father, always understood my frustrations. I value your love, inspiration, amazing creativity, sense of justice, and desire to make the world a better place. Although I may not always show it, I am proud of you and appreciate you always keeping me on my toes!

To my son Aidan—who constantly reminds me that he genuinely cares about his Dad. Thank you for stepping up with "pats" at the right time because they helped me stay the course when I was at my limit. I am grateful for your genuine love and respect and so very proud of the man that you are becoming.

My cohort friends—who became one of the best cohesive groups I have had the pleasure to know. You made the long drives in traffic, immersions, cohort meetings, webinars, and group dinners complete with pita bread all "worth the trip."

To Dr. Tod Burnett—thank you for your mentorship, ideas, flexibility, and support that helped keep our cohort focused.

To my dissertation chair and committee—Dr. Guzman, Dr. Buster, and Dr. Greenberg, thank you for your guidance and encouragement. There were a few times when that extra push to "get it done" was the difference between success and failure.

To Dr. Tammie Castillo-Shiffer—your tenacious and consistent drive was truly instrumental in motivating me to see this through. Your friendship is and always will be greatly appreciated; I could not have done this without you. Thank you!

Last but not least—to the United States of America—Thank you for giving me the opportunity to serve this great nation. I am grateful to the American people for supporting veteran-related programs that afforded me the opportunity earn education benefits and achieve this significant milestone.

ABSTRACT

The Impact of Emotional Intelligence and Affective Behavior on Paramedic Student Field Internship Success

by Jim Lambert

Purpose: The purpose of this correlational study was to examine the relationship between emotional intelligence (EI) scores, as defined by Bradberry and Greaves (2009) and paramedic student success during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Methodology: This quantitative, nonexperimental, correlational study utilized data collected from the Emotional Intelligence Appraisal—Me Edition and the California Paramedic FE reports provided by paramedic preceptors in the field. Data were collected from 30 paramedic interns from 3 paramedic programs in Southern California and analyzed using the Pearson product moment correlation (*r*).

Findings: This study's focus was to determine if a relationship existed between EI and performance on the paramedic FE for paramedic interns. A weak direct (positive) correlation existed between EI and performance on the FE. For students required to repeat or extend their time in a paramedic internship, the data demonstrated a strong direct (positive) correlation between EI scores and their performance on the FE.

Conclusions: Students with higher levels of EI were more likely to find initial success during their field internship phase of study and complete the program on the first attempt. Although some students with lower measured levels of EI were successful in their initial attempts to pass field internship evaluations, the factor common among those students

who had to extend or repeat the field internship portion of their study was a lower level of EI. Affective behaviors, which result from EI, are included on the FE for students and contribute to their overall scores.

Recommendations: Used in conjunction with the FISDAP's Paramedic Entrance Exam, EI training would offer paramedic instructors and program directors important tools to proactively identify areas needing improvement so that appropriate interventions can be made in the best interest of the student. Recommendations for future research are listed in Chapter V.

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CHAPTER I: INTRODUCTION

The idea of taking care of the sick and injured can be traced as far back as biblical times. It is quite common in today's culture to reference a helpful person as the biblical "good Samaritan." The emergency medical services (EMS) system, as it is known today, was originally developed in France during the time of Napoleon to aid soldiers in battle (Shah, 2006). Many modern advances in emergency medicine and the transport of patients have been attributed to military engagements throughout history, but their primary focus was on traumatic injuries that did not address the complex medical or psychological problems patients experienced (Lezama, Riddles, Pollan, & Profenna, 2011). Modern emergency medicine has changed significantly over the years along with the needs, considerations, and expectations of communities being serviced. A key component of this change lies in the field of prehospital emergency care and the people who fulfill these roles.

During the 1960s, morticians provided nearly all the ambulance service needed within the United States largely due to the type of vehicle they drove and not necessarily because of their knowledge or ability to effectively intervene medically (Simpson, 2013). Today the demographic is quite different based on technological advances in medicine, communication, transportation, equipment, and educational requirements. A recent study examining the 9-1-1 emergency response system indicated that out of more than 31 million public requests for emergency assistance in 2013, 68% were medical in nature, an increase of 13% from 2003 (Cannuscio et al., 2016). Emergency medical personnel, consisting of emergency medical technicians and paramedics, respond to a variety of

situations and must routinely maintain cognitive and psychomotor competency to properly assess and treat patients in the prehospital setting (Cannuscio et al., 2016).

Understanding the community's need for EMS has led to the development of expanded 9-1-1 systems throughout the country and national standard curricula for the education of specified emergency medical personnel (W. E. Brown & Margolis, 2005). Research conducted by D. Thom (2008) concluded that paramedics may need more than the currently required cognitive and psychomotor skills that combine knowledge and hands-on application to be effective. More recently, areas of emotional intelligence (EI), personality, and affective behavior have been identified as attributes that may contribute to the success of this demographic (W. E. Brown & Margolis, 2005). These traits are especially critical for paramedics based on the extent of their responsibilities. Affective behavior and proper social skills have been proven to be four times more effective than cognitive skills alone in terms of personal success (D. Thom, 2008) and may contribute to the overall longevity of the EMS professional (Stanley, Hom, & Joiner, 2016).

Research also revealed that paramedic students may need better preparation to deal with their own emotions in addition to those they encounter with patients (A. Williams, 2013). Furthermore, decision-making skills associated with EI that directly impact affective behavior are paramount to the success of EMS personnel to meet the diverse needs of patients in the prehospital setting (Newton, 2014). Potential ways to help prepare students may include mentorship programs through professional development and addressing EI aptitude to enhance long-term success (Gorgas, Greenberger, Bahner, & Way, 2015).

Background

The American Civil War brought about the nation's first organized and systematic approach toward improving care for the injured with enhanced field care and evacuation to a prearranged hierarchal hospital system (Boyd, 2010). However, modernized quality prehospital care would not be addressed in America's civilian sector for nearly a century. The perception that cancer, heart disease, stroke, and trauma comprised much of the nation's health burden in the 1960s led to the development of the Emergency Medical Systems Services Act of 1973. The central argument for the act was fueled by social medical activists, significant public interest, and the overwhelming cost associated with traumatic injuries. Additionally, the legislation established EMS guidelines and shifted the emphasis from basic prehospital transport to regional trauma systems planning (Simpson, 2013).

Further development resulting from the actions implemented by Congress addressed these issues through legislation establishing regional medical programs. These programs promote the advancement of healthcare through the expansion of education-based facilities and incorporate the training of medical professionals comprised of physicians, nurses, and emergency medical technicians (Shah, 2006). Although several pioneers contributed to EMS in many ways, Dr. Nancy Caroline pioneered the idea that people other than physicians could employ emergency interventions. Her leadership and contributions became responsible for the development of paramedic curriculum and helped pioneer the Freedom House Enterprises Ambulance Service located near Pittsburg, Pennsylvania, as one of the first education programs for EMS in the United States (Barishansky, 2007).

The Current State of EMS

First responders nationwide agree that the current 9-1-1 system is strained, overused, and places those with valid emergencies at risk due to limited resources being allocated to nonemergency situations (Cannuscio et al., 2016) including the transport of nonemergency patients to hospital emergency rooms that are ill-equipped to process the volume of nonemergency patients. Balancing individual patient needs while addressing the overall needs of the community may require paramedics of the future to have greater autonomy in their decisions regarding patient transport (Haines, Lutes, Blaser, & Christopher, 2006). More importantly, emergency room overcrowding delays patient care, strains medical personnel, and places a significant financial burden on local healthcare systems (Al Essa, 2013).

EMS authorities in California are exploring alternatives to more efficiently utilize paramedic skill sets to potentially reduce emergency department crowding and costs associated with EMS transport (Neeki et al., 2016). In many cases, insurance requirements add to the problem and may incentivize the decision to transport patients to the hospital. Medicare coverage for prehospital care is currently classified as a transport service, resulting in the need for EMS providers to deliver patients to an emergency room to avoid placing an unnecessary financial burden on the patients within their communities (Morganti, Alpert, Margolis, Wasserman, & Kellermann, 2014).

The San Francisco Fire Department is currently experimenting with specially trained paramedics who target homeless populations whose chief medical complaint relates to substance abuse and psychological disorders. Their proactive efforts have reduced the amount of emergency department visits while better meeting the needs of the

patients in this demographic. Additionally, this service has enabled first responders to provide critical patients better availability and access to emergent care (Tangherlini et al., 2016). Subsequently, other pilot programs are currently being explored in various locations throughout the state, which highlights the need for EMS agencies to consider alternative methods for meeting the needs of the community.

Paramedicine has grown significantly in recent years and the paramedic career field continues to expand in breadth of practice and autonomy (Tavares & Boet, 2016). As communities continue to grow and rely on EMS, the role of the paramedic will need to adjust in terms of education (B. Williams, Fielder, Strong, Acker, & Thompson, 2015). For example, enhanced decision-making skills required to address the needs of the wide range of patients found in the prehospital setting will need to be expanded upon (Newton, 2014). Additionally, alternative ideas for treating patients in place without initiating transport appear to be alternatives proving to be viable options. The concept of community paramedicine is currently being explored in several states and, although they vary widely, have prevented nearly 2,000 patient transports. This approach proved beneficial to the patients and saved more than $800 million in healthcare costs (Lezzoni, Dorner, & Ajayi, 2016).

Affective behavior and associated EI attributes utilized by paramedics have serious impacts on the health and welfare of the people they serve (Halama & Gurňáková, 2014). The role these traits play in the management of mental health is essential to the caregiver and may also have significant impacts on the way they deliver care when exposed to traumatic events (Rinker, 2015). The quality of care provided may be significantly reduced when paramedics allow personal bias or attitudes toward certain

patient demographics to influence their behavior (Williams et al., 2015). The reason for these attitudes may be related to coping mechanisms employed by paramedics and cultural acceptance of methods to deal with job stressors. Negative cultures that incorporate mechanisms employed by paramedics may hamper decision-making capabilities, create habits that are not conducive to long-term health, and lead to serious problems mentally and physically (Clompus, 2014). Reviews of literature documented risk factors for first responders based on job-related stresses that lead to mental health disorders including anxiety, depression, substance abuse, and suicidal tendencies. Traumatic symptoms consistent with Post-traumatic stress disorder (PTSD) are present in one fourth to one third of paramedics at any given time based on cross-sectional studies (Regehr, 2005).

Paramedics are equipped with the latest medical training and equipment to ensure the proper care for others; it is the duty of educators, researchers, clinicians, and the public to consider their health and welfare as well (Stanley et al., 2016). Ensuring that paramedics are prepared to deal with all aspects of their job begins with the education process. Despite the evidence that supports the value of educating paramedic students in areas of emotional awareness, there is minimal research to suggest implementation from a student perspective (Lyman, 2013). Research found that mentorship was instrumental in helping build confidence and resiliency in paramedic students dealing with emotional stress (A. Williams, 2013). Access to appropriate agencies for support, in addition to strong personal relationships, also proved to negatively correlate PTSD and depression among those regularly exposed to traumatic situations (Regehr, 2005).

Evidence suggests that the key to successfully meeting the growing EMS needs of the community, while ensuring the health and well-being of first responders, may require significant adjustments (Tavares & Boet, 2016). Incorporation of education in areas of EI supported by properly trained mentorship programs may be a step in the right direction. Proper selection and subsequent rejection of applicants may also prove to be beneficial. Psychological screening assessments to determine suitability have been used by military organizations worldwide (Gayton & Kehoe, 2015). Paramedic programs nationwide continue to focus primarily on cognitive, psychomotor, and affective domains, yet there are no standardized approaches for paramedic curriculum. EMS educators continue to emphasize the importance of affective behavior and EI in the career field, yet instruments for predicting success in this area continue to be academic in their application (Lyman, 2013). Medical programs rely on interview processes to help determine the behavioral suitability of candidates, yet studies reveal no significant evidence that interviews are predictors of interns' success in these medical programs (Groves, Gordon, & Ryan, 2007).

While advances in technology pertaining to equipment, techniques, and pharmacology drive classroom and hands-on learning objectively, affective behavior is rarely addressed proactively. Training and education in this area needs to be employed based on evidence supporting positive results (Lezzoni et al., 2016). Research conducted by Chapin (2015) indicated that medical students attending EI training generally witness improvements in affective behavior that produce higher program success rates. This same research supported the use of EI testing as a predictor of a student's ability to successfully relate to and properly treat patients (Chapin, 2015).

EI has proven to give physicians distinct advantages in areas of team building and decisiveness (Libbrecht, Lievens, Carette, & Côté, 2014). Even limited exposure to EI education had a significant positive result on emergency medicine residents (Gorgas et al., 2015). Evidence also indicates that effective communication coupled with genuine compassion and sensitivity makes a difference. Sound "bedside manner" between medical personnel and their patients does more than impact a patient's feelings, it also positively impacts therapeutic outcomes (Libbrecht et al., 2014). The effectiveness and practical application of EI skill sets can be beneficial to paramedics who are expected to perform at the highest level of excellence in conditions that may be less than ideal. Exposure to EI concepts of behavior has proven to equip paramedic students with higher resiliency levels that theoretically make them less likely to experience symptoms of burnout and extreme stress (Porter & Johnson, 2008). Finally, increased awareness and self-confidence were found to be present with paramedics with higher education levels; collectively these traits resulted in lower instances of stress-related disorders (Rybojad, Aftyka, Baran, & Rzońca, 2016).

Newly hired paramedics receive minimal oversight regarding competency when compared to other clinical professions. Many agencies utilize mentorship programs to positively impact competency, which helps retain skills and standards of excellence in field performance, yet fail to address the importance of the affective domain (Pointer, 2001). EMS professionals lacking mentorship in behavioral aspects of the job are also prone to increased risk behaviors that can negatively impact their health (Pirrallo, Levine, & Dickison, 2005).

It has been shown that psychological profiles may better predict medical student success than cognitive instrumentation alone (Lyman, 2013). Adhering to high academic standards is essential in education, but equal attention should be given to noncognitive skills that are conducive to professional excellence (Barr, 2014). Links between EI and decision-making abilities were verified in samples of firefighters and paramedics. Ideal traits identified with paramedic success included rationality, extraversion, conscientiousness, and openness (Pilárik & Sarmany-Schuller, 2011). Although there is limited information to assist educators in the development of curriculum in this area, a pilot program being conducted by the Field Internship Student Acquisition Project (FISDAP) continues to research and explore testing ideas that may be used in the paramedic selection process.

Although valid assessments exist to capture summative cognitive and psychomotor proficiency, none are available to capture performance in the area of affective behavior (Lyman, 2013). While the affective domain continues to be one of the three critical grading areas of paramedic education, it is also the area receiving the least amount of attention and is the only area that is subjectively evaluated. Further research is required to determine potential assessment tools that may be used to predict paramedic student success and potentially be used to employ training opportunities to compliment the current profession.

Statement of the Research Problem

What are EMS educators doing to improve the affective behavior of paramedic students to meet the changing needs of the communities they serve? Although affective behavior constitutes one third of the grading criteria for paramedic students, the

underlying components of affective behavior stemming from EI are not currently addressed in the field internship setting. Furthermore, no standardized training is given to paramedic educators to effectively teach or evaluate these critical skill sets. This is evidenced in research conducted by Holt and Hannon (2006), who reported that the greatest difficulty exists in observing, measuring, and evaluating affective behavior.

A growing body of evidence indicates that a positive correlation exists between personality traits, EI, and field performance with medical students from various disciplines (Romanelli, Cain, & Smith, 2006). Although significant similarities exist between the work environments of paramedic and medical students, research is currently lacking to establish a strong correlation among these variables for paramedic students. Additionally, despite its potential value in paramedic education and practical field application, there is a lack of training for paramedics in areas of EI. Higher levels of EI are indicated by effective communication, successful conflict mitigation, and development of appropriate professional relationships (Bradberry & Greaves, 2009). A. Williams (2013) established these to be vital skills that specifically contribute to paramedic student success rates. EI signifies a collection of these noncognitive skills that affect a person's overall resiliency while reacting to environmental stresses (Talarico et al., 2013), yet EI training for paramedic students is nonexistent.

Considering the amount of stress first responders experience once they assimilate into the profession, it is imperative that they have the tools necessary to deal with areas of emotion for themselves as well as for the patients they will be called upon to serve (Pirrallo et al., 2005). Rising healthcare costs coupled with community reliance on EMS is driving significant change in the roles and responsibilities of future paramedics

nationwide (Newton, 2014). Pilot programs in California are currently being implemented to determine if paramedics are a viable option to mitigate these issues locally (Lezzoni et al., 2016). Competency, social skill, and critical thinking will be necessary to successfully mitigate the increased obligations and may require enhanced training to be effective (Tavares & Boet, 2016). EI is a potential predictor of both professional success and appropriate affective behavior. These traits may also increase over time with appropriate training and mentorship (Bradberry & Greaves, 2009; Holt & Hannon, 2006; Romanelli et al., 2006; A. Williams, 2013). Despite evidence suggesting the benefits increased EI may provide paramedic students during their field internship and beyond, research suggests that no formal efforts are being made to directly measure, educate, and evaluate paramedic field internship students in this area.

Purpose Statement

The purpose of this correlational study was to examine the relationship between EI scores, as defined by Bradberry and Greaves (2009) and paramedic student success during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Research Questions

1. What is the correlation between paramedic interns' EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria for success in the field?

2. What is the relationship between students with high EI as defined by Bradberry and Greaves (2009) and high-performance indicators in the field as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria?

Significance of the Research

The future of paramedicine is evolving and placing greater demands for paramedics to think critically and rationally (Whyte, Madigan, & Drinkwater, 2011). Addressing the needs of the community to relieve an overwhelmed 9-1-1 system, along with shifting demographics within the communities paramedics serve, continue to challenge the traditional responsibilities and demands of the paramedic profession (Cannuscio et al., 2016). One study indicated that there may be correlations between affective behavior and cognitive performance (Lyman, 2013), yet little research is available to determine how this behavior will relate to paramedic intern field performance. Educators and current paramedics agree that traditionally established methods for the selection and education of paramedics may no longer adequately prepare students for the expanded scope of practice they will experience in the field (Newton, 2014).

Paramedics are expected to mitigate the emotional needs of patients, relatives of patients, and themselves with no formal training or aptitude test to determine their suitability (A. Williams, 2013). Although EI relating to affective behavior has been a cornerstone of paramedic student evaluation, there is no formal instruction on the subject nor is there research to determine correlations between positive affective behavior and overall performance (Libbrecht et al., 2014).

Studies indicate that first responders possessing low EI scores are prone to higher instances of sickness, injury, PTSD, and are more likely to engage in high risk behaviors detrimental to their health (Pirrallo et al., 2005; Rinker, 2015). This study sought to fill the gap in research regarding EI and paramedic student success during their field internship phase of training. Additionally, the researcher sought to augment the limited body of research regarding EI as related to paramedic education.

Definitions

For the purpose of this study, the following definitions were used:

Affective behavior. The way people react emotionally and their ability to feel another living being's pain and joy. Affective objectives typically target the awareness and growth in attitudes, emotions, and feelings (Segen, 1995).

Emotional intelligence (EI). Comprised of four core skills that pair up under two primary competencies: personal competence and social confidence. EI affects how individuals manage behavior, navigate social complexities, and make personal decisions that achieve positive results (Bradberry & Greaves, 2009).

Paramedic. An American Medical Association (AMA) recognized professional who provides emergency care to patients in the prehospital setting. The scope of practice for paramedics is based on state and local protocols developed by medical directors (CoAEMSP, 2010).

Paramedic intern. A paramedic student who has completed didactic and clinical portions of paramedic training and is eligible for and who is in the process of completing the field internship portion of paramedic training (National Association of State EMS Officials, 2014).

Paramedic preceptor. Licensed and accredited paramedic that is authorized to supervise and instruct paramedic students during their field internship (National Association of State EMS Officials, 2014).

Personal competence. Comprised of self-awareness and self-management skills, which focus more on an individual than his or her interactions with other people. Personal competence is the ability of an individual to stay aware of his or her own emotions and manage his or her own behavior and tendencies (Bradberry & Greaves, 2009).

Relationship management. The ability to use awareness of one's own emotions and the others' emotions to manage interactions successfully (Bradberry & Greaves, 2009).

Self-awareness. The ability to accurately perceive one's own emotions and stay aware of them as they happen (Bradberry & Greaves, 2009).

Self-management. The ability to use awareness of one's own emotions to stay flexible and positively direct his or her behavior (Bradberry & Greaves, 2009).

Social competence. Comprised of an individual's awareness and relationship management skills; social competence is the ability to understand other people's moods, behavior, and motives to improve the quality of his or her relationships (Bradberry & Greaves, 2009).

Social awareness. The ability to accurately detect emotions in other people and understand the source of those emotions (Bradberry & Greaves, 2009).

Delimitations

The study was delimited to students attending community college paramedic programs located in Riverside and San Bernardino Counties in California. Participating students completed didactic and clinical portions of training and progressed to their field internship phase of study.

Organization of the Study

This study is presented in five chapters and includes references and appendices. Chapter I incorporated an introduction and historical background of the problem, the statement of the problem, purpose of the study, research questions, definitions of terms, and delimitations of the study. Chapter II provides an extensive review of the literature relative to the history of paramedicine, education processes, and concerns for the future of the profession based on current and expected future needs of the community.

Furthermore, aspects of EI are explored to determine potential best practices to improve interactions with patients and provide paramedics with enhanced situational awareness beneficial to their longevity. Chapter III details the methodology of the study, includes information regarding the population and sample, instrumentation utilized, and the data collection and analysis process. Chapter IV presents the data used to answer this study's research questions and includes data collection procedures, a description of the study's population, sample, and limitations. Chapter V summarizes the findings of the study, presents information discovered, conclusions, and recommendations for further research.

CHAPTER II: LITERATURE REVIEW

Chapter II provides a comprehensive review of the literature pertaining to research conducted on the history of paramedicine, paramedic education, and emotional intelligence (EI). Included in this review is a synthesis of the literature about EI comprised of personal and social competence defined by Bradberry and Greaves (2009). The four components of personal and social competence (self-awareness, self-management, social awareness, and relationship management) are also explored in this chapter.

The origins of the emergency medical services (EMS) system, as it is known today, can be traced back to France during the time of Napoleon to aid soldiers in battle (Shah, 2006). Modern advances in emergency medicine and the transport of patients have been attributed to military engagements throughout history that primarily focused on traumatic injuries and did not address the complex medical or psychological problems patients experienced (Lezama et al., 2011). Modern emergency medicine has changed significantly over the years along with the needs, considerations, and expectations of communities being serviced. A key component to properly meet these future challenges lies in the field of prehospital emergency care and the people who fulfill these roles.

The Evolution of EMS

The American Civil War brought about the nation's first organized and systematic approach toward improving care for the injured with enhanced field care and evacuation to a prearranged hierarchal hospital system (Boyd, 2010). However, modernized quality prehospital care would not be addressed in America's civilian sector for nearly a century. Ambulance service in the United States originated in Ohio and New York during 1860-

1870 and primarily utilized horse-drawn carriages. These programs expanded during the early 20th century and were often paired with fire and police departments (Caroline, 2013). During the 1960s, morticians provided nearly all ambulance services requested within the United States largely due to the type of vehicle they drove and not necessarily their knowledge or ability to effectively intervene medically (Simpson, 2013).

With the 1966 publishing of *The White Paper* came the establishment of a functioning emergency medical system and the development of basic and advanced life support programs (Caroline, 2013). The perception that cancer, heart disease, stroke, and trauma comprised much of the nation's health burden in the 1960s led to the development of the Emergency Medical Systems Services Act of 1973. The central argument for the act was fueled by social medical activists, significant public interest, and the overwhelming cost associated with traumatic injuries. Additionally, the legislation established EMS guidelines and shifted the emphasis from basic prehospital transport to regional trauma systems planning (Simpson, 2013).

Paramedic practices during the 1970s and 1980s included basic emergency care and rapid transport to the nearest medical facility (Lyman, 2013). Today, paramedics are expected to maintain cognitive and psychomotor competency to properly assess and treat patients in the prehospital setting (Cannuscio et al., 2016) as well as evaluate emergency medical situations and perform dynamic risk assessments as the frontline authority in emergency care. They maintain the responsibility for first responders on-scene and must decisively mitigate a myriad of medical conditions ranging from traumatic emergencies, cardiac arrest, sudden death, psychological, social problems, and much more (A. Williams, 2013).

Development of EMS Education

Further development resulting from the actions implemented by Congress addressed these issues through legislation establishing regional medical programs. These programs promoted the advancement of healthcare through the expansion of education-based facilities and incorporated the training of medical professionals comprised of physicians, nurses, and emergency medical technicians (Shah, 2006). Although several pioneers contributed to EMS in many ways, Nancy Caroline pioneered the idea that people other than physicians could employ emergency interventions. Her leadership and contributions became responsible for the development of paramedic curriculum and helped pioneer the Freedom House Enterprises Ambulance Service located near Pittsburg, Pennsylvania, as one of the first education programs for EMS in the United States (Barishansky, 2007).

Paramedic Education Today

Although paramedics are the highest licensed professionals in EMS, training and education continue to improve. In 1998, the U.S. Department of Transportation implemented dramatic changes to paramedic curriculum requiring a greater level of psychomotor skills and training to be a paramedic. In 2013, the National Registry of Emergency Medical Technicians (NREMT) required that paramedics attend and complete their preparation through an accredited program (Caroline, 2013). The licensure of EMS personnel is a function of state EMS agencies. At the federal level, the national EMS scope of practice model provides the overarching guidelines for the required cognitive and psychomotor skills for practicing paramedicine. Education may vary from state to state, but all states base their paramedic education programs on the

National EMS Education Standards produced and administrated by the National Highway Traffic Safety Administration (California Emergency Medical Services Authority, 2016).

The California Code of Regulations, Title 22, Division 9, outlines the specific medical training and interventions that paramedics are required to perform in the field in the state of California (California Emergency Medical Services Authority, 2016). In addition, this code of regulations lists the certifications and certifying examinations associated with licensure. The educational requirements for paramedic certification are generally completed through a 2-year community college degree program accredited in paramedic training. The required curriculum is comprised of cognitive and psychomotor instruction that includes assessments coupled with clinical training, which culminate in the field internship phase of training (California Emergency Medical Services Authority, 2016; Caroline, 2013).

FISDAP

Paramedic programs nationwide use an online testing platform to measure student progress and their summative competency (FIDSAP, 2018). The Entrance Exam (EE) was designed by the testing cooperative community of FISDAP. FISDAP began in 1997 as a grant-funded venture titled the Field Internship Student Data Acquisition Project (FISDAP). The project's initial focus was in the clinical setting of paramedic education and has since emerged as a respected leader in research and paramedic assessments (Lyman, 2013). The paramedic EE was designed to give EMS program administrators an assessment tool to aid in the student selection process and has shown a positive

correlation to first-time pass rate on the NREMT-CE that paramedics must pass for certification (Page, James, Stanke, & Bowen, 2013).

Changing Responsibilities

Although paramedic education and testing processes have been refined and updated, the demographics of the communities that paramedics serve continue to change as does the environment in which they are called upon to serve. These strains to the emergency medical system signal the need for preparation programs to change to mitigate the new demands placed on paramedics in the field.

An Overwhelmed 9-1-1 System

The landscape of emergency services has changed dramatically and continues to evolve due to advances in technology, communications, medicine, transportation, demographics, and equipment. In addition to the evolving responsibilities of paramedics, the strain, abuse, and misuse of the current 9-1-1 system have compounded the stress of this profession. A recent study examining the 9-1-1 emergency response system indicated that out of more than 31 million public requests for emergency assistance in 2013, 68% were medical in nature, indicating a 13% increase from 2003 (Cannuscio et al., 2016). The strain to 9-1-1 is not solely due to an increase in medical emergencies but also to the abuse and misuse of the system. In 2016, nearly one in every five calls for 9-1-1 assistance in the city of Memphis, Tennessee, was a mistake or a nonemergency call (Capps, 2017). Seymour, Indiana, has percentages of nonemergency requests much higher at between 35% and 40% per day (Woods, 2014). According to the Federal Communications Commission (FCC) Commissioner Michel O'Rielly (2014), 50% of 9-1-1 calls were the result of a "pocket dialing" of cellular phones (para. 8).

Google research conducted by Griggs (2015) indicated a sharp increase in 9-1-1 calls in the city of San Francisco due to this very phenomenon. This misdirection of resources wastes valuable time for dispatchers who research the legitimacy of calls, but more importantly, this misdirection and inappropriate use of 9-1-1 delays care for citizens with legitimate emergencies (Griggs, 2015). Additional stress is then transferred to paramedics because the response time to valid emergencies is extended and the situation or emergency may have escalated due to this delay.

First responders nationwide agree that the United States' current 9-1-1 system is strained and overused, placing those with valid emergencies at risk due to limited resources being allocated to nonemergency situations (Cannuscio et al., 2016). This includes the transport of nonemergency patients to hospital emergency rooms that are ill equipped to process the volume of nonemergency patients. Balancing individual patient needs while addressing the overall needs of the community may require paramedics of the future to have greater autonomy in their decisions regarding patient transport (Haines et al., 2006). More importantly, emergency room overcrowding delays patient care, strains medical personnel, and places a significant financial burden on local healthcare systems (Al Essa, 2013).

Community Paramedicine

EMS authorities in California are exploring alternatives to more efficiently utilize paramedic skill sets to reduce emergency department crowding and costs associated with EMS transport (Neeki et al., 2016). In many cases, insurance requirements add to the problem and may incentivize the decision to transport patients to the hospital. Medicare coverage for prehospital care is currently classified as transport service, resulting in the

need for EMS providers to deliver patients to an emergency room to avoid placing an unnecessary financial burden on the patients within their communities (Morganti et al., 2014).

The San Francisco Fire Department is currently experimenting with specially trained paramedics who respond by specifically targeting homeless populations whose chief medical complaint relates to substance abuse and/or psychological disorders. Their proactive efforts have reduced the amount of emergency department visits while better meeting the needs of the patients in this demographic. Additionally, this service has enabled first responders to provide critical patients better availability and access to emergent care (Tangherlini et al., 2016). As a result, other pilot programs are currently being explored in various locations throughout the state.

Paramedicine has grown significantly in recent years and the paramedic career field continues to expand in breadth of practice and autonomy (Tavares & Boet, 2016). As communities continue to grow and rely on EMS, the role of the paramedic will need to adjust in terms of education (B. Williams et al., 2015). For example, enhanced decision-making skills required to address the needs of the wide range of patients found in the prehospital setting will need to be expanded upon (Newton, 2014). Additionally, alternative ideas for treating patients in place without initiating transport appear to be alternatives proving to be viable options. The concept of community paramedicine is currently being explored in several states, and although this practice in each state varies widely, it has prevented nearly 2,000 patient transports. This approach proved beneficial to patients exposed to this type of care and saved more than $800 million in healthcare costs (Lezzoni et al., 2016).

Revised Paramedic Education

The changing EMS landscape emphasizes the importance of community safety and highlights its reliance upon an organized EMS system consisting of trained paramedics. This reliance has led to the development of an expanded 9-1-1 system throughout the country and the National Standard Curriculum for the education of specified emergency medical personnel (W. E. Brown & Margolis, 2005). Current required cognitive and psychomotor skills combine knowledge and hands-on application to produce an effective paramedic, but research conducted by D. Thom (2008) concluded that paramedics may need more than the skills currently required to be truly effective.

More recently, areas of EI, personality, and affective behavior have been identified as attributes that may contribute to the success of this demographic (W. E. Brown & Margolis, 2005). These traits are especially critical for paramedics based on the extent of their current responsibilities as well as future expectations. Affective behavior and proper social skills are proven to be four times more effective than cognitive skills alone in terms of personal success (D. Thom, 2008) and may contribute to the overall longevity of the EMS professional (Stanley et al., 2016).

In 1998, efforts to comply with the National Standard Curriculum for the EMS community brought about the idea for a way to capture paramedic student progress in the field. This new curriculum called for large-scale changes in the way students were assessed and their requirements for graduation. To meet this requirement, FISDAP was born. Currently, FISDAP provides educators with a system for tracking and reporting data gathered during student field internships related to the skills performed and types of patients encountered (FISDAP, 2018).

Despite current education and tracking efforts, research suggests that paramedic students may need better preparation to deal with their own emotions in addition to those they encounter with patients (A. Williams, 2013). Furthermore, decision-making skills associated with EI and affective behavior are paramount to the success of EMS personnel to meet the growing and diverse needs of patients in the prehospital setting (Newton, 2014). Potential ways to help prepare students may include mentorship programs through professional development and addressing EI aptitude to enhance success (Gorgas et al., 2015).

The conditions experienced by paramedics in the field are undoubtedly stressful. References for dealing with stress are limited to a few pages within required course material with equally limited coping strategies presented (Caroline, 2013). Exposure to stressful situations can be the cause for burnout for paramedics and other first responders (Kaplan, Bergman, Christopher, Bowen, & Hunsinger, 2017; Smith, 2014). The chronic stressors encountered by these professionals have had a negative overall impact on their health. Conversely, learned behavior related to self-regulation and mindfulness have been shown to mitigate those negative effects (Kaplan et al., 2017).

Affective Behavior in Paramedics

The level of EI impacting affective behavior exhibited by paramedics may have serious impacts on the health and welfare of the patients within the communities they serve (Halama & Gurňáková, 2014). The role these traits play in the management of mental health may also have significant impacts on the way paramedics deliver care when exposed to traumatic events in the field (Rinker, 2015). Additionally, personal bias or attitudes toward certain patient demographics may affect the quality of care provided

by paramedics (B. Williams et al., 2015). The reason for these attitudes may be related to coping mechanisms employed by paramedics and the cultural acceptance of methods to deal with job stressors. Cultures that condone negative coping mechanisms employed by paramedics may hamper decision-making capabilities, create habits that are not conducive to long-term health, and lead to serious problems mentally and physically (Clompus, 2014). Reviews of literature documented risk factors for first responders based on job-related stresses that lead to mental health disorders including anxiety, depression, substance abuse, and suicidal tendencies. Traumatic symptoms consistent with post-traumatic stress disorder (PTSD) are present in one fourth to one third of paramedics at any given time based on cross-sectional studies (Regehr, 2005).

Currently, paramedics are equipped with the latest medical training and equipment to ensure the proper delivery of medical care; therefore, it is the obligation of educators, researchers, clinicians, and the public to consider the mental health and well-being of paramedics (Stanley et al., 2016). Ensuring paramedics are prepared to deal with all aspects of their job begins with the education process. Despite evidence that suggests the value of educating paramedic students in areas of EI to promote affective behavior, there is minimal research to indicate any such education is being implemented from a student perspective (Lyman, 2013). Research found by A. Williams (2013) listed mentorship as a positive component that helped build confidence and resiliency in paramedic students dealing with emotional stress. The formation of strong personal relationships created by mentorship programs in conjunction with access to appropriate support agencies has shown to negatively correlate with PTSD and depression among those regularly exposed to traumatic situations (Regehr, 2005).

These factors, coupled with a growing body of research, suggest that the key to both successfully meeting the growing EMS needs of the community and ensuring the mental well-being of paramedics may require significant adjustments in areas of training and education (Tavares & Boet, 2016). Incorporation of education in areas of EI supported by properly trained mentorship programs may be a step in the right direction. Additionally, the proper selection and subsequent rejection of applicants may also prove to be beneficial based on its application to similar fields. Psychological screening used by military organizations worldwide has been an effective tool to determine occupation suitability in the best interest of the applicant and the organization (Gayton & Kehoe, 2015).

Paramedic programs nationwide have historically placed their focus primarily on cognitive, psychomotor, and affective domains for evaluation. Currently, psychological screening is not employed by paramedic programs, and there are no objective standardized methods for addressing or evaluating the affective domain in paramedic curriculum (Lyman, 2013). EMS educators continue to emphasize the importance of affective behavior in the field, yet fail to address underlying areas of EI or training in this area that may impact affective behavior. Instruments for predicting paramedic student success continue to primarily focus on academic areas of cognitive and psychomotor performance in paramedic education (Lyman, 2013). Medical programs continue to rely on interview processes to help determine the behavioral suitability of candidates, yet studies reveal no significant evidence that interviews are predictors of interns' success in any given medical program (Groves et al., 2007).

Given that the Bureau of Labor Statistics (2012) estimated that 120,800 EMS personnel would be needed between 2010 and 2020 to meet the growing demands of the community and account for attrition, eliminating viable candidates based on predictors alone would be counter-productive. One of 12 "critical policy issues" listed by the National Association of State EMS Officials (2014, pp. 14-15) identified shortages of paramedics and cited the need for planning and analysis to address recruitment and retention to meet personnel shortages.

Rather than conducting research to identify predictors to preclude students in a career field plagued by manning shortfalls, perhaps educators should seek solutions that champion learning and self-improvement. Research conducted by Page et al. (2013) indicated that self-evaluations conducted during the field internship phase of paramedic training were instrumental in helping paramedic interns achieve higher levels of success. This research highlights a potential solution to bridge manpower gaps by fostering growth and self-improvement in the area of EI. More importantly, the EI self-assessment discussed in this research could conceivably add objectivity to the evaluation of paramedic interns in the subjectively measured and often overlooked area of affective domain.

Theoretical Framework

Social intelligence is considered the precursor to EI and was first proposed by Thorndike in 1920. This intelligence is distinct from abstract, mechanical, and academic intelligences. Social intelligence considers the ability to understand and evaluate one's own behavior as well as the behavior of others. It includes not only social adaptation but also practical thinking and general ability. This study showed a correlation between high

social intelligence and flexibility, tact, empathy, and the ability to communicate in a competent way (Thorndike, 1920). Those with high social intelligence could glean information from the nonverbal behaviors of others and predict their behavior to make accurate judgements about them. Low social intelligence results in the inability to successfully and appropriately understand the complexity involved in human interaction (Thorndike, 1920). Those with low social intelligence often speak in a way that is out of place and they are unable to interpret the communication of others.

Emotional Intelligence

Overview

Intelligence quotient (IQ) alone is not a reliable predictor of success and, as discussed by Gladwell (2008) in *Outliers*, suggests that intelligence has a threshold. Longitudinal studies done of those with high IQs in the early 20th century indicated that, while a few of the high IQ subjects did reach some significant levels of achievement in their lives, this was not true for all (Terman, 1916, 1925). Given that people with average IQs outperform people with high IQs 70% of the time, high IQ alone is insufficient for success (Bradberry & Greaves, 2009).

The term *emotional intelligence* was first coined by Salovey and Mayer 1990 to describe the ability to use information gathered from others and one's own emotions and responses to make decisions about actions and thought (Mayer, Salovey, & Caruso, 2002). The assessment from Salovey and Mayer's explorations of the phenomenon found that those with higher EI assessment scores were better able to regulate their own emotions so they could perceive and respond in socially appropriate ways to the emotions of others (Mayer et al., 2002; Srikanth & Sonawat, 2014). Theories of EI have varied and

taken on many iterations in the time since, but the essential components of individual emotion management as well as social interactions and the ability to perceive the emotions of others have remained (Brackett & Salovey, 2013; Mhalkar, George, & Nayak, 2014).

Emotional Intelligence 2.0

Bradberry and Greaves (2009) divided the four components of EI into two categories: personal competence and social competence. Self-awareness and self-managements skills comprise personal competence because both are focused on the individual rather than the interactions said individual has with others. Personal competence is described in the individual's ability to manage his or her emotions and to remain aware of both tendencies and behavior (Bradberry & Greaves, 2009).

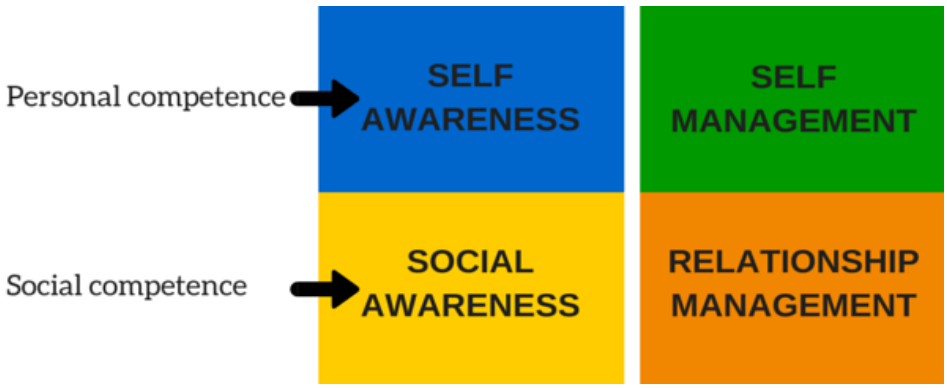

Figure 1. Four aspects of emotional intelligence. Adapted from *Emotional Intelligence 2.0,* by T. Bradberry & J. Greaves, 2009 (San Diego, CA: Talent Smart).

Self-awareness is a utilization of the aforementioned awareness by the individual to perceive emotions and remain aware of them in real time, while the management component is the ability of the individual to use the aforementioned awareness to appropriately guide and direct behavior in a flexible way. The ability to reflect and

understand one's self in relation to others is an essential component of both professionalism and good practice.

Self-awareness. Self-awareness describes the concept or extent to which people are consciously aware of their internal state and their interactions or relationships with others (Sutton, Williams, & Allinson, 2015). Within this concept are the distinctively different areas of situational and dispositional self-awareness (K. W. Brown & Ryan, 2003). The process of situational self-awareness occurs when an individual automatically compares him or herself to an internal standard or value (Silvia & Duval, 2001). The tendency for an individual to reflect on his or her own self-consciousness describes dispositional self-awareness and takes two forms (Sutton et al., 2015). The tendency to think negatively or ruminate causes an individual to focus on negative self-perceptions, which exacerbates bad moods, negative thinking, and poor social interaction (Watkins & Moulds, 2005). Research indicates that this skill can be one that is developed or nurtured over time (Knapp, Gottlieb, & Handelsman, 2017). Urdang (2010) found that within the mental health setting, an application of self-awareness improved the clinical competence of healthcare providers and prevented both burnout and "client violence" (p. 531).

Self-management. Self-management refers to one's ability to appropriately use self-awareness to guide and direct his or her own behavior and remain flexible to the fluidity of the situation (Bradberry & Greaves, 2009). Critical to positive interactions with others is the management of an individual's emotions and maintaining control of the associated behaviors. Research has shown that those who are successful in extreme environments, which include demanding physical and psychological conditions, have a "well contextualized internal body state" allowing them to act appropriately and achieve

a task considered to be "goal-oriented" (Paulus et al., 2009, p. 1081). An introspective individual is then better able to process important information about others and their possible emotions. This ability allows the individual to understand and contextualize other's emotions and motivations, their affective information, while maintaining focus on the task and demands of the current situation (Bradberry & Greaves, 2009; Paulus et al., 2009; N. J. Thom et al., 2014). According to a study by N. J. Thom et al. (2014), individuals who are elite performers direct "increased neural resources" to the processing of emotion (p. 227), allowing themselves to regulate their internal affective state.

Social competence. Social awareness and relationship management comprise the social competence portion of the EI model. This competence is based upon an individual's ability to read the emotions and behaviors of others with the goal of improving the quality of the relationship between interacting individuals (Bradberry & Greaves, 2009). Social awareness is the ability of an individual to accurately read the emotions of others and understand the motives underlying those emotions as well as their implications. The ability to use the aforementioned awareness of the emotions of others to successfully manage interactions, even in highly stressful or dynamic situations is considered relationship management (Bradberry & Greaves, 2009; Moore & Mamiseishvili, 2012).

Social awareness. Social awareness is one of two parts of the social competence portion of the EI model. It is the ability of an individual to accurately read the emotions of others and understand the motives underlying those emotions as well as their implications. Social awareness is largely built upon one's ability to empathize with others; that is, the ability to consider the needs of another in a way that suspends

judgement and seeks understanding (Bradberry & Greaves, 2009). The accurate identification of another's feelings allows an individual to better navigate any social exchange. Those with high social awareness can reflect upon the words and the other nonverbal clues to provide context and allow one to adapt communication to meet the needs of the situation. Effective social awareness allows one to understand the emotion of the situation without adopting the emotion, allowing the focus of the interaction and exchange to remain unchanged (Bradberry & Greaves, 2009; Urdang, 2010).

Multiple complex interactions occur during social exchanges. The number and complexity of these exchanges increases as stress is added to the situation. The term intersubjectivity is used to describe the exchange of feelings between individuals in an ongoing transition (Benjamin, 2006). This transaction is not a need to be verbal or even acknowledged by those involved but does become a critical guide for navigating the complex human interaction that occurs during stressful situations (Spencer & Munch, 2003; Urdang, 2010). This awareness of others and fluid situations can become essential to the safety of those in highly emotional situations because it allows them time to take "self-protective measures" prior to the situation reaching a critical point (Urdang, 2010, p. 532; see also Spencer & Munch, 2003).

Relationship management. The second component of Bradberry and Greaves's (2009) EI model for social competence is relationship management. Given that relationship management is defined by the ability to respond and adapt to the verbal and nonverbal cues of others, the term *adaptability* can be applied to the responsiveness displayed by an individual. This study sought to define the importance of employee adaptability on workplace performance and uses six dimensions to define adaptability.

The most important of the six aspects is dealing with "unpredictable and uncertain work situations" and "demonstrating interpersonal adaptability" (Bradberry & Greaves, 2009, pp. 613-614). Adaptability as it relates to the uncertainty of work situations will allow one to shift his or her focus in a dynamic environment and operate efficiently despite the uncertainty or ambiguity of the situation. Adaptability related to interpersonal relationships involves being fluid and open to the needs of others and responding in an appropriate and goal-oriented way (Pulakos, Arad, Donovan, & Plamondon, 2000). Given Bradberry and Greaves's (2009) definition of relationship management, research by Moore and Mamiseishvili (2012) can be used to illustrate the importance of an individual's awareness of his or her own emotions, the emotions of the group, and the consequences of those interactions. In their research, Moore and Mamiseishvili demonstrated a strong correlation between high EI and group cohesion when there is conscious awareness of individual and group emotions. Furthermore, an individual's awareness of his or her own emotions helps develop social and emotional skills that positively impact the overall effectiveness of an entire group (Moore & Mamiseishvili, 2012).

As previously stated regarding EMS education, advances in nearly every area continue to drive classroom (cognitive) and hands-on (psychomotor) learning objectively, while affective behavior is rarely addressed proactively. Training and education in this area needs to be employed based on evidence supporting positive results (Lezzoni et al., 2016). Chapin's (2015) research indicated that medical students attending EI training generally witness improvements in affective behavior that produce higher success rates.

This same research supported the use of EI testing as a predictor of a student's ability to successfully relate to and properly treat patients (Chapin, 2015).

EI has proven to give physicians distinct advantages in areas of team building and decisiveness (Libbrecht et al., 2014). Even limited exposure to EI education had a significant positive result on emergency medicine residents (Diane et al., 2015). Evidence also indicates that effective communication coupled with genuine compassion and sensitivity makes a difference. Sound "bedside manner" between medical personnel and their patients does more than impact a patient's feelings, it also positively impacts therapeutic outcomes (Libbrecht et al., 2014). The effectiveness and practical application of EI skill sets can be beneficial to paramedics who are expected to perform at the highest level of excellence in conditions that may be less than ideal. Paramedic students possessing higher resiliency levels are less likely to experience symptoms of burnout and extreme stress once exposed to EI concepts of behavior (Porter & Johnson, 2008). Finally, increased awareness and self-confidence was found to be present with paramedics with higher education levels; collectively these traits resulted in lower instances of stress-related disorders (Rybojad et al., 2016).

Newly hired paramedics have a great deal of autonomy with minimal oversight when compared to other clinical professions. Although mentorship programs designed to positively impact competency and enforce are present in some organizations, they fail to address the importance of the affective domain (Pointer, 2001). This is cause for concern for the customer, the organization, and the employee. EMS professionals lacking mentorship in behavioral aspects of the job are also prone to increased risk behaviors that can negatively impact their health (Pirrallo et al., 2005).

It has been shown that psychological profiles may better predict medical student success than cognitive instrumentation alone (Lyman, 2013). Adherence to high academic standards is essential in education, but equal attention should be given to noncognitive skills that are conducive to professional excellence (Barr, 2014). Links between EI and decision-making abilities were verified in samples of firefighters and paramedics. Ideal traits identified with paramedic success included rationality, extraversion, conscientiousness, and openness (Pilárik & Sarmany-Schuller, 2011).

Although there is limited information to assist educators in the development of curriculum in this area, a pilot program being conducted by the FISDAP continues to research and explore testing ideas that may be used in the paramedic selection process. Although valid assessments exist to capture summative cognitive and psychomotor proficiency, none are available to capture performance in the area of affective behavior (Lyman, 2013). While the affective domain continues to be one of the three critical grading areas of paramedic education, it is also the area receiving the least amount of attention and is subjectively evaluated. Further research is required to determine potential assessment tools that may be used to predict paramedic student success and to employ training opportunities to compliment the current profession.

CHAPTER III: METHODOLOGY

Overview

The following chapter describes the methodology of this study. According to McMillian and Schumacher (2010), methodology is the description of a study's design. This chapter includes an overview, purpose statement, and research questions as well as a description of the research design, methodology, population, and sample. The study's instrumentation, data collection, and analysis along with the limitations of the study and an examination of researcher bias are contained within this chapter. This quantitative study sought to examine if a correlation exists between the emotional intelligence (EI) scores as defined by Bradberry and Greaves (2009) and field work success for paramedic interns as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Purpose Statement

The purpose of this correlational study was to examine the relationship between EI scores, as defined by Bradberry and Greaves (2009) and paramedic student success during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Research Questions

1. What is the correlation between paramedic interns' EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria for success in the field?

2. What is the relationship between students with high EI as defined by Bradberry and Greaves (2009) and high-performance indicators in the field as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria?

Research Design

Creswell (2013) defined research design as the process for the way in which a study will be conducted; it is therefore, a description or plan for a study that includes participants and data collection. The goal of any research is to gain a greater understanding of the world and advance humanity's knowledge (McMillan & Schumacher, 2010; Patton, 2002). In the pursuit of a logically reasoned and well-supported conclusion, data must be carefully collected and analyzed.

Qualitative research is descriptive in nature and seeks to tell a story through rich descriptions to capture a reader's emotion and empathy (Patton, 2002). The data gathered are not numerically quantifiable and are collected via interviews, document analysis, and often involve extensive fieldwork (McMillan & Schumacher, 2010; Patton, 2002). The subjective experience of the researcher is linked to the collection of data, but validity is insured through triangulation and reflexivity (Bazeley, 2004; Berger, 2015; Patton, 2002). The exploratory nature of qualitative research uses purposeful samples to establish context, to tell meaningful stories, and to examine systems including their intended and unintended consequences (Patton, 2002).

Quantitative research uses quantifiable or numeric data that are gathered carefully with deliberate measurement to establish and analyze relationships between variables (McMillan & Schumacher, 2010). Free from the subjectivity and value judgements of qualitative research, quantitative methodology includes large sample sizes,

randomization, and blinding to determine causal relationships, establish relationships among variables, and determine the statistical significance of the data gathered. The results of quantitative research are intended to be generalizable to a larger group, generate models, or test theories (McMillan & Schumacher, 2010; Patton, 2002; Salkind, 2014).

This study used descriptive correlational designs. According to McMillan and Schumacher (2010), a deliberation of a study's research design is essential to understand the limitations and cautions involved in data analysis and results interpretation. According to Creswell (2013), "The descriptive analysis of variables in a study includes describing the results through means, standard deviation, and range of scores" (p. 242). McMillan and Schumacher (2010) defined correlational research as "research in which information on at least two variables is collected on each subject to investigate the relationship between variables" (p. 486). The objective nature of this quantitative study allowed the researcher to clearly determine the statistical significance between the variables and the degree to which there was correlation.

Population

The group of interest within a study is called a population (Patton, 2002). McMillan and Schumacher (2010) defined population as "a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research" (p. 129). Ideally information would be gathered from an entire population; however, the utilization of such a population would not be feasible due to geographic and time constraints (Roberts, 2010).

Considering that there are more than 31 paramedic programs in California, selecting representatives of the total group is often more efficient rather than studying

every member of a target group (McMillan & Schumacher, 2010). According to Patton (2002), "After drawing a sample, researchers study it and then make inferences to the population. That is, researchers infer that the characteristics of the sample probably are the characteristics of the population" (p. 45). The target population for this study includes all the paramedic interns in California who have advanced to the field internship phase of a paramedic program. According to the National Registry of Emergency Medical Technicians (NREMT, 2017), there are 99,321 licensed paramedics in the United States with 35,720 being licensed in the state of California.

Target Population

According to McMillan and Schumacher (2010), the target population is the set of individuals who are selected from the overall population for which the data collected will be used to make inferences. The target population for this study was paramedic interns. The National Association of State EMS Officials (2014) defined a paramedic intern "as a paramedic student who has completed didactic and clinical portions of paramedic training and is eligible for and who is in the process of completing the field internship portion of paramedic training" (p. 13). For convenience, proximity to the researcher was used to select participants. The researcher was located in Southern California; therefore, paramedic interns from three paramedic programs in Southern California were selected for participation in this study.

Sample

McMillan and Schumacher (2010) defined a sample as "the group of individuals from whom data are collected" (p. 129). This study utilized convenience sampling. Given the impracticality of studying every individual within a specific population, and

due to limitations of time and resources, convenience sampling was used for this study (McMillan & Schumacher, 2010; Patton, 2002). Ten participants were selected from each of the three paramedic programs for a total of 30 participants across Southern California. These programs were selected based on their proximity and accessibility to the researcher. According to Creswell (2013), "The target population or 'sampling frame' is the actual list of sampling units from which the sample is selected" (p. 393). Program directors from three paramedic programs located in Southern California were contacted to determine their willingness and agreed to participate in this study to aid the researcher. Once permission was granted from the appropriate agencies, participants were given the Brandman University Participant's Bill of Rights (Appendix A) and an informed consent form (Appendix B) to ensure compliance with Brandman University's Institutional Review Board (IRB) standards.

Instrumentation

The Bradberry and Greaves (2009) EI self-reporting test, contains 28 items designed to measure emotionally competent behavior. There are four composite scores reported that correspond with the four main skills related to self-management, relationship management, self-awareness, and social awareness. Field success is determined based on a paramedic preceptor assessment of on-site performance of the paramedic intern as determined by the California Paramedic FE Rating Criteria. Skills are assessed using a Likert scale to assign a numeric value of 1-3 with a rating of 1 indicating failure, 2 indicates an inconsistent or marginal rating, and 3 indicates competency. The following are the performance areas measured by the California

Paramedic FE: (a) scene management, (b) assessment/treatment, (c) communication, (d) leadership, and (e)treatment skills.

Instrument Validity and Reliability

Validity of an instrument refers to the degree to which that instrument accurately measures what it is designed to measure (Patten, 2012; Roberts, 2010). The question posed by Roberts (2010) was, "Can you trust that findings from your instrument are true?" (p. 151). For this study, the assessments utilized were the Emotional Intelligence Appraisal—Me Edition and California Paramedic FE progress reports provided by paramedic preceptors in the field.

The California Paramedic FE is used to measure the student's performance against the standard of an entry-level paramedic. The student is not measured against another student, provider, liaison, or the preceptor. The intention of the evaluation is to measure cognitive, psychomotor, and affective skills objectively. The standards are defined within the Basic Scope of Practice in California Title 22, Division 9, Chapter 4 (California Emergency Medical Services Authority, 2016).

The Emotional Intelligence Appraisal consists of an online 28-question assessment that determines EI based on self-reported data. The response scale for this assessment is as follows: "1 (*never*), 2 (*rarely*), 3 (*sometimes*), 4 (*usually*), 5 (*almost always*), and 6 (*always*)" (TalentSmart, 2013, p. 5).

The Emotional Intelligence Appraisal and the four associated skills yield reliabilities with coefficient alphas ranging from 0.79 to 0.92. In addition, according to TalentSmart, studies across industries support the test's validity and ability to measure EI

quotients accurately (Bradberry & Greaves, 2009). The normative sample size to establish reliability was greater than 500,000.

Data Collection

Approval of the Brandman University Institutional Review Board (BUIRB) allowed for the collection of data. Prior to data collection, participants were notified of their rights as research participants, received a written assurance of confidentiality, the Brandman University Research Participants Bill of Rights (Appendix A) and the informed consent form (Appendix B). E-mail communication was sent to various paramedic program directors in Southern California describing the researcher's study and requesting volunteer paramedic intern participation. Volunteer activities included participating in an online EI test and consenting to the release of field evaluation ratings. Paramedic program directors from three separate institutions in Southern California provided contact information for paramedic intern volunteers. Interns were asked to sign a consent form and were provided the Brandman University Participant's Bill of Rights (Appendix A). Data collection began in April of 2018 and participants were assigned a unique two-digit identifier to ensure confidentiality and allow the researcher to match EI assessment and field evaluation scores. The list of participant names with corresponding two-digit identifiers and signed informed consent documents were kept in a locked file cabinet that was only accessible by the researcher. EI assessments occurred between April and May of 2018. The collection of data included the scores from the California Paramedic FE and the Emotional Intelligence Appraisal of research participants located in community college paramedic programs in Southern California, specifically San Bernardino and Riverside Counties.

Data Analysis

Initial analysis of quantitative data was based upon the California Paramedic FE and the Emotional Intelligence Appraisal collected from the participants in this study with a mean score being determined for each participant. According to Patten (2012), "The most frequently used average is the mean, which is the balance point in a distribution" (p. 117). Mean score calculation is commonly reported in quantitative research (McMillan & Schumacher, 2010).

Additionally, a second statistical measure of standard deviation was calculated. The standard deviation describes the variability in test scores (Patton, 2002). According to McMillan and Schumacher (2010), the standard deviation tells the researcher "about the distance, on the average, of the scores from the mean for any set of scores" and how it "can be computed that will be unique to the distribution and indicate the amount, on the average, that the set of scores deviates from the mean" (p. 161).

The data yielded additional quantitative knowledge, regarding whether there was a correlation between paramedic interns with high EI scores as defined by Bradberry and Greaves (2009) and success during their field internship as defined by the California Paramedic FE. According to McMillan and Schumacher (2010), "The Pearson product-moment correlation is used when both variables use continuous scales, such as scores from achievement tests, grade-point averages, self-concept inventories, and age" (p. 168). The Pearson product-moment correlation was used to determine if a direct or inverse relationship exists between the variables. A direct relationship will yield a Pearson *r* value of greater than 0 to 1, whereas an inverse relationship will yield a Pearson *r* value of less than 0 to -1 (Patten, 2012).

Delimitations

The delimitations are those characteristics that limit the scope and define the boundaries of researcher's study, in the researcher's control, the choice of objectives, the research questions, variables of interest, theoretical perspectives, and the population he or she chooses to investigate (Simon, 2011). This study was delimited to students attending community college paramedic programs in Riverside and San Bernardino Counties located in Southern California.

Summary

Chapter III provided a description of the research methodology and the reasons for its selection. Contained within this chapter were a statement of the study's purpose, central research questions, and an explanation of the research design population and sample. The research instruments and procedures for data collection and analysis were presented in this chapter. The study's limitations were named and discussed. Chapter IV contains detailed descriptions of the data collected, along with a report of the findings. Chapter V contains major findings, conclusions, and recommendations for further research.

CHAPTER IV: RESEARCH, DATA COLLECTION, AND FINDINGS

The data collected using the methodology presented in Chapter III are presented in Chapter IV. The major categories contained in this chapter include the purpose statement, research questions, methodology, and data collection procedures along with a description of the study's population, sample, and limitations. Finally, the data collected in this study were presented to answer the research questions.

Overview

This study sought to determine if a correlation exists between the emotional intelligence (EI) scores as defined by Bradberry and Greaves (2009) and success of paramedic students in the field internship phase of study. Past research has supported the role of emotionally intelligent behavior in medical professionals and its effect on the appropriate treatment of patients (Chapin, 2015). This research is important not only to those who are first responders but also to members of the community who rely on emergency medical services (EMS).

Paramedics are required to mitigate a number of dynamic factors when responding to emergency medical calls and their ability to appropriately manage the scene. Bystanders, family members, and more importantly, the health of the patient can ultimately be the difference between life and death. The participants for this study were paramedic students from schools in Southern California who had completed their academic coursework and had advanced to the field internship phase of their paramedic program.

Purpose Statement

The purpose of this correlational study was to examine the relationship between emotional intelligence (EI) scores, as defined by Bradberry and Greaves (2009) and paramedic student success during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Research Questions

1. What is the correlation between paramedic interns' EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria for success in the field?
2. What is the relationship between students with high EI as defined by Bradberry and Greaves (2009) and high-performance indicators in the field as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria?

Research Methods

Creswell (2013) defined research design as the process by which a study will be conducted; it is therefore a description or plan for a study that includes participants and data collection. Free from the subjectivity and value judgements of qualitative research, quantitative methodology includes large sample sizes, randomization, and blinding to determine causal relationships, establish relationships among variables, and determine the statistical significance of the data gathered. The results of quantitative research are intended to be generalizable to a larger group and generate models or test theories (McMillan & Schumacher, 2010; Patton, 2002; Salkind, 2014). This study was

quantitative in nature and used quantifiable numeric data gathered with deliberate measurement to establish and analyze potential relationships between variables.

According to McMillan and Schumacher (2010), a deliberation of a study's research design is essential to understand the limitations and cautions involved in data analysis and results interpretation. This study used a descriptive correlational design as defined by Creswell (2013), "The descriptive analysis of variables in a study includes describing the results through means, standard deviations, and range of scores" (p. 242). McMillan and Schumacher (2010) defined correlational research as "research in which information on at least two variables is collected on each subject to investigate the relationship between variables" (p. 486). The objective nature of this quantitative study allowed the researcher to clearly determine the statistical significance between the variables and the degree to which there was correlation.

Data Collection Procedures

The research proposal for this study was submitted to Brandman University's Institutional Review Board (BUIRB) in April of 2018 and approved in May of 2018. This allowed the researcher to begin the data collection process and formally enter into an agreement with TalentSmart. This collaboration included the sharing of research and findings in exchange for a discounted rate on 30 EI online Me Edition appraisals. Access to the TalentSmart assessments was granted once approval from BUIRB documentation was reviewed by a TalentSmart representative.

Preliminary communication via e-mail was established with multiple college-based paramedic program directors to describe the research and request their participation in the study. Once a relationship was established and approval received from

participating institutions, paramedic program directors provided the contact information for paramedic students who were randomly selected and were in the field internship phase of the program. Students were then contacted, provided a description of the study, and given a detailed explanation of the data to be collected. Prior to data collection, all participants were notified of their rights as research participants, and received a written assurance of confidentiality, the Brandman University Research Participant's Bill of Rights (Appendix A) and an informed consent form (Appendix B).

Data collection began in May and continued through July 2018. Study participants were assigned a unique two-digit identifier to ensure confidentiality and allow the researcher to match EI assessment scores with field evaluation scores. The list of participant names with corresponding two-digit identifiers and signed informed consent documents were kept in a locked file cabinet that was only accessible by the researcher. The collection of data also included FE ratings paramedic interns received while being supervised on 9-1-1 emergency medical responses during their field internship. These ratings were documented and scored based on their assessment of scene management, patient assessment and treatment, communication, and leadership as outlined according to the California Paramedic FE.

Emotional Intelligence Appraisals were also completed by participants from May through June of 2018. Each student's contact information was entered into the TalentSmart web-based distribution tool, which generated an e-mail that provided a direct link to the Emotional Intelligence Appraisal—Me Edition. Once students accessed and completed the Emotional Intelligence Appraisal, the researcher was granted access to retrieve the results. Each participant was given immediate feedback and access to

TalentSmart's online resources for a period of 1 year. Upon receipt of scores, the researcher matched each participant to his or her unique number identifier, EI scores, and major FE data.

Population and Sample

The group of interest within a study is called a population (Patton, 2002). McMillan and Schumacher (2010) defined a population as "a group of elements or cases, whether individuals, objects, or events, that conform to specific criteria and to which we intend to generalize the results of the research" (p. 129). Ideally information would be gathered from an entire population; however, the utilization of such a population would not be feasible due to geographic and time constraints (Roberts, 2010).

Considering that there are more than 31 paramedic programs in California, selecting representatives of the total group is more efficient than studying every member of a target group. According to Patton (2002), "After drawing a sample, researchers study it and then make inferences to the population. That is, researchers infer that the characteristics of the sample probably are the characteristics of the population" (p. 45). The target population for this study includes all the paramedic interns in California who have advanced to the field internship phase of a paramedic program. According to the National Registry of Emergency Medical Technicians (NREMT, 2017), there are 99,321 licensed paramedics in the United States with 35,720 being licensed in the state of California.

McMillan and Schumacher (2010) defined a sample as "the group of individuals from whom data are collected" (p. 129). This study utilized convenience sampling. Ten participants were selected from each of the three paramedic programs for a total of 30

participants across Southern California. These programs were selected based on their proximity and accessibility to the researcher.

Data Collection

The data for this descriptive correlation study were collected from two instruments. The researcher utilized data from the Emotional Intelligence Appraisal—Me Edition and California Paramedic FE reports provided by paramedic preceptors in the field.

The Emotional Intelligence Appraisal consists of a 28-question assessment that determines EI based on self-reported data. The response scale for this assessment is as follows: "1 (*never*), 2 (*rarely*), 3 (*sometimes*), 4 (*usually*), 5 (*almost always*), and 6 (*always*)" (TalentSmart, 2013, p. 5). The assessment scores and associated meanings are as follows:

> 90-100 . . . A Strength to Capitalize on—Far Above Average; . . . 89-80, A Strength to Build on—Above Average; . . . 70-79, With a Little Improvement, This Could Be a Strength—Below Average; . . . 60-69, Something You Should Work On; . . . 59 and BELOW, A Concern You Must Address. (TalentSmart representative, personal communication, n.d.)

The Emotional Intelligence Appraisal and the four associated skills (self-awareness, self-management, relationship management, and social awareness) yield reliabilities with coefficient alphas ranging from 0.79 to 0.92. In addition, industry studies containing a normative sample size greater than 500,000 were used to support the test's validity and ability to measure EI quotients accurately (TalentSmart, 2013).

The California Paramedic FE is used to measure student performance against the standard of an entry-level paramedic. The student is not measured against another student, provider, liaison, or the preceptor. The intention of the evaluation is to measure cognitive, psychomotor, and affective skills objectively. The standards that guide paramedic evaluations in the field are defined within the Basic Scope of Practice in California Title 22, Division 9, Chapter 4 (California Emergency Medical Services Authority, 2016).

Presentation and Analysis of Data

Data were analyzed using the Pearson-product moment correlation (Pearson *r*) to determine if a correlation exists between paramedic interns' EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic FE Rating Criteria for success in the field. In addition, the data were also analyzed to measure the strength of the existing relationship between higher EI as defined by Bradberry and Greaves and high-performance indicators in the field as determined by the California Paramedic FE Rating Criteria.

Interpretation of Values

The Pearson Product-moment correlation coefficient was used to "examine the relationship between" variables (McMillan & Schumacher, 2010, p. 168). Measures of relationships, as defined by McMillan and Schumacher (2010) are used to "indicate the degree to which two sets of scores are related" (p. 485). The Pearson product-moment correlation (represented by *r*) is used when both variables use continuous scales, like the Emotional Intelligence inventory and California Paramedic FE featured in this study (McMillan & Schumacher, 2010). The correlation coefficient is the number used to

represent the relationship between two variables (McMillan & Schumacher, 2010). The number is usually between -1.0 and 1.0. Depending on the value of the correlation coefficient, the relationship can be either weak or strong and either positive or negative (McMillan & Schumacher, 2010). Values between 1.0 and 0.5 (-1.0 and -0.5) are considered to have strong correlations. Values between 0.5 and 3.0 (-.05 and -3.0) are considered moderate correlations, and values between 0.3 and 0 (-0.3 and 0) are considered weak correlations. A value of zero indicates no correlation (McMillan & Schumacher, 2010).

The interpretation of Pearson product-moment values is described in Table 1.

Table 1

Types of Correlations

What happens to Variable X	What happens to Variable Y	Type of correlation	Value
X increases in value	Y increases in value	Direct or positive	Positive, ranging from .00 to +1.00
X decreases in value	Y Decreases in value	Direct or positive	Positive, ranging from .00 to +1.00
X increases in value	Y Decreases in value	Indirect or negative	Negative, ranging from -1 .00 to .00
X increases in value	Y Increases in value	Indirect or negative	Negative, ranging from 1.00 to .00

Note. Adapted from *Statistics for People Who (Think They) Hate Statistics* (5th ed.), by N. J. Salkind et al., 2014 (Thousand Oaks, CA: Sage).

Correlation of EI Scores and FEs

The overall analysis showed a weak correlation between EI scores as defined by Bradberry and Greaves (2009) and the performance of paramedic field interns on the California Paramedic FE Rating Criteria. The data indicate a weak indirect correlation

between initial FE scores and overall EI scores. The data further show a weak direct correlation between final FE scores and overall EI scores. This same relationship exists between overall FE scores and overall EI scores.

The EI scores and FE scores for the sample population ranged from 60-97 and from 82-100 respectively. Data suggest that paramedic interns with higher EI will likely score higher on FEs. The data further suggest that paramedic interns possessing higher EI will also likely experience success sooner than those whose EI scores are lower (see Table 2).

Table 2

Correlations of Evaluation Scores

Category	California Paramedic FE *M* (*SD*)	Overall average EI scores *M* (*SD*)	Pearson product-moment correlation (*r*)	Type of correlation
Initial FE	84.59 (10.1)	76.5 (9.2)	*r* = -0.279	Weak indirect/negative
Final FE	94.67 (4.7)	76.5 (9.2)	*r* = +0.163	Weak direct/positive
Overall	94.90 (5.0)	76.5 (9.2)	*r* = +0.107	Weak direct/positive

Students who had to repeat or were extended in their field internship, based on field evaluations that did not meet the standard, constituted approximately 17% of the sample population. The data show a strong direct correlation between FE scores and EI scores on initial, final, and overall evaluations. The strong direct correlation indicates the relationship between EI and FE based on their scores being low (see Table 3).

Table 3

Correlation of Scores for Students Who Were Extended or Repeated the Program

Category	California Paramedic FEs for students who were extended or repeated the program *M* (*SD*)	Overall average EI scores *M* (*SD*)	Pearson product-moment correlation (*r*)	Type of correlation
Initial FE	88.12% (12.2)	76.2 (6.8)	$r = +0.922$	Strong direct/positive
Final FE	93.00% (9.7)	76.2 (6.8)	$r = +0.899$	Strong direct/positive
Overall	88.13% (8.2)	76.2 (6.8)	$r = +0.922$	Strong direct/positive

Of students who were extended or had to repeat the program, a correlation exists between their EI scores and their performance evaluations in the field. Overall the paramedic field interns who had lower EI scores had less satisfactory performance in the field. This was a strong positive or strong direct correlation indicating that, while not the only factor in predicting success in the field, EI may affect a paramedic's ability to respond appropriately to the myriad situations encountered during an emergency response. The average EI scores of those students who were extended or had to repeat the program were lower than the average scores of those who were successful the first time.

Limitations

Roberts (2010) defined limitations as "particular features of your study that you know may negatively affect the result or your ability to generalize. Limitations are usually areas over which you have no control" (p. 162). The limitations of this study included geography, time, and reliance upon self-reported data.

Time and Geography

The scope of this study and time constraints related to data collection were among the limitations of this study. Additional time would have allowed the researcher to collect more data from a greater number of students during multiple paramedic program phases of study. Included in the limitations was the geography of the study's population. The study was delimited to paramedic interns in the Southern California area. Limited access to paramedic interns in other parts of the country could have provided additional input to address the study's research questions.

Self-Reported Data

Data were self-reported, and the establishment of complete honesty by participants in the study is a near impossibility. According to McMillan and Schumacher (2010), "Non-cognitive items are subject to faking" (p.194). Participants may overreport or underreport certain behaviors in order to be viewed in a more socially acceptable way. Rather than responding in an honest manner, a participant may answer in a way that is more socially desirable (McMillan & Schumacher, 2010).

Summary

This chapter presented the overall structure of the study and data collection as well as a rationale for the instruments used. This study sought to uncover any existing relationships between EI scores and field performance of paramedic interns. The findings from this research were obtained from 30 paramedic interns from three different paramedic programs in the Southern California area. The participants selected had progressed to the field internship phase of their paramedic program. The participants responded to a 28-question Emotional Intelligence Appraisal and were evaluated by a

preceptor in the field. The primary focus of this study was to determine if a correlation existed between EI scores and field performance for paramedic interns. The overall analysis of the data indicates a weak direct correlation between EI scores and success in the field. Further examination of the data indicates that there is a strong direct correlation between the low EI of students who were extended or repeated the program and their limited success in the field. Chapter IV discusses the relationship among these variables. Chapter V presents a summary of the key findings as well as implications for action and recommendations for future study.

CHAPTER V: SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS.

Summary

This study was presented in five chapters and includes references and appendices. Chapter I incorporated an introduction and historical background of the problem, the statement of the problem, purpose of the study, research questions, definitions of terms, and delimitations of the study. Chapter II provided an extensive review of the literature relative to the history of paramedicine, education processes, and concerns for the future of the profession based on current and expected needs of the community.

Furthermore, aspects of emotional intelligence (EI) were explored to determine potential best practices to improve interactions with patients and provide paramedics with enhanced situational awareness beneficial to their longevity. Chapter III detailed the methodology of the study, included information regarding the population and sample, instrumentation utilized, and the data collection and analysis process. Chapter IV presents the data used to answer this study's research questions and includes data collection procedures, a description of the study's population, sample, and limitations. Chapter V contains a summary of the research conducted, research questions, major findings, unexpected findings, implications for action, and recommendations for further research.

Purpose Statement

The purpose of this correlational study was to examine the relationship between EI scores, as defined by Bradberry and Greaves (2009) and paramedic student success

during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria.

Research Questions

1. What is the correlation between paramedic interns' EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria for success in the field?
2. What is the relationship between students with high EI as defined by Bradberry and Greaves (2009) and high-performance indicators in the field as determined by the California Paramedic Field Internship Major Evaluation (FE) Rating Criteria?

Methodology

This quantitative, nonexperimental, correlational study utilized data collected from the Emotional Intelligence Appraisal—Me Edition and the California Paramedic FE reports provided by paramedic preceptors in the field. Data were collected from 30 paramedic interns from three paramedic programs in Southern California and analyzed using the Pearson product moment correlation (r).

Population and Sample

The target population for this study includes all the paramedic interns in California's 31 paramedic preparation programs who have advanced to the field internship phase of their program. The National Registry of Emergency Medical Technicians (NREMT, 2017) reported 99,321 licensed paramedics in the United States with 35,720 being licensed in the state of California. Ten participants were selected from each of three paramedic programs for a total of 30 participants across Southern

California. These programs were selected based on their proximity and accessibility to the researcher.

Major Findings

The purpose of this quantitative correlational study was to determine if a relationship exists between the EI of paramedic interns and their success in the field as determined by their scores on the California Paramedic FE Rating Criteria. The data gathered and analyzed answered the research questions. Key findings were presented in Chapter IV and the Pearson product moment (*r*) correlation values presented.

Major Finding 1

Higher EI relates to successful field performance for paramedic interns.

The overall analysis showed a weak correlation between EI scores as defined by Bradberry and Greaves (2009) and the performance of paramedic field interns on the California Paramedic FE Rating Criteria. The data indicate a weak indirect correlation between initial FE scores and overall EI scores. The data further show a weak direct correlation between final FE scores and overall EI scores. This same relationship exists between overall FE scores and overall EI scores.

Major Finding 2

Lower levels of EI are common to those who must repeat or extend their field internship.

Of students who were extended or had to repeat the program, a correlation exists between their EI scores and their performance evaluations in the field. Overall the paramedic field interns who had lower EI scores had less satisfactory performance in the field. This was a strong positive or strong direct correlation indicating that, while not the

only factor in predicting success in the field, EI may affect a paramedic's ability to respond appropriately to the myriad situations encountered during an emergency response. The average EI scores of those students who were extended or had to repeat the program were lower than the average scores of those who were successful the first time.

Unexpected Findings

Strength of Correlation for Overall Sample

The previously existing body of research, the review of the literature conducted in this study, along with the researcher's prior experience and understanding, both as a paramedic and former paramedic program director, the strength of the correlation between EI, and performance in the field for paramedic interns was unexpected. An objective expectation was that there would be a stronger correlation between EI scores and FE scores. Although the data from the overall sample population demonstrated a weak and direct correlation, the scores of students who were required to repeat or extend their time in the program, based on poor field performance, revealed a strong direct (positive) correlation.

Strength of Correlation Among Repeating or Extending Interns

The second unexpected finding in this study was that students who had to repeat or extend their time in the program had overall scores that were lower in both their EI and FEs. While the EI scores of the students who were initially successful were generally higher than those of the repeating or extended students, their scores were not always higher in the area of EI. However, for every student in the sample who repeated or was extended during their field internship, their EI scores indicated lower levels of EI.

Conclusions

The significance of this nonexperimental, quantitative, correlational study was to add to the limited body of research related to EI and paramedic field internships. The following conclusions are the result of the analysis of the data contained in Chapter IV and describe the relationship and correlation between EI scores as defined by Bradberry and Greaves (2009) and their performance indicators as determined by the California Paramedic FE Rating Criteria for success in the field.

Conclusion 1

Students with higher levels of EI demonstrate higher performance levels in the field.

Although not the only predictor of success, students with a higher level of EI are more likely to be successful in the field internship portion of a paramedic program. Paramedic interns must mitigate several factors when responding to emergencies. These factors include but are not limited to environmental safety for the paramedic as an individual as well as the safety for patients and bystanders. They must also manage the emotional and physical responses of the patient and bystanders to administer the care required. Moore and Mamiseishvili (2012) demonstrated a strong correlation between high EI and group cohesion when there is conscious awareness of individual and group emotions. Furthermore, they found that an individual's awareness of his or her own emotions helps develop social and emotional skills that positively impact the overall effectiveness of an entire group (Moore & Mamiseishvili, 2012). This ability to appropriately manage one's own emotions, read the emotions of others, and manage interactions with bystanders or involved parties is a product of their EI. Effective social

awareness allows one to understand the emotion of the situation without adopting the emotion, allowing the focus of the interaction and exchange to remain unchanged (Bradberry & Greaves, 2009; Urdang, 2010). It is the affective behavior resulting from this EI in conjunction with superior cognitive and psychomotor skills that create a more responsive and appropriately prepared paramedic.

Conclusion 2

Lower levels of EI were common to students who had their internship extended or repeated the program entirely.

Although some students with lower measured levels of EI were successful in their initial attempts to pass FEs, the factor common among those students who had to extend or repeat the field internship portion of their study was a lower level of EI. Affective behaviors, which result from EI, are included on the FEs for students and contribute to their overall scores. The number and complexity of these exchanges increases as stress is added to the situation. The term intersubjectivity is used to describe the exchange of feelings between individuals in an ongoing transition (Benjamin, 2006). This transaction need not be verbal or even acknowledged by those involved but does become a critical guide for navigating the complex human interaction that occurs during stressful situations (Spencer & Munch, 2003; Urdang, 2010). This awareness of others and fluid situations can become essential to the safety of those in highly emotional situations because it allows them time to take "self-protective measures" prior to the situation reaching a critical point (Urdang, 2010, p. 532; see also Spencer & Munch, 2003). The inability to appropriately respond to and manage both the patients and bystanders can result in a

nonpassing score for students. Early education in this area is paramount to providing students with better opportunities for success.

Implications for Action

This study demonstrated the relationship between EI and performance in the field for paramedic interns. Specifically, it found that students with higher levels of EI demonstrate higher performance levels in the field and that lower levels of EI were common to students who had their internship extended or repeated the program entirely. This relationship, therefore, highlights the need for EI to be addressed at multiple levels of paramedic programs. Paramedic programs need to institute EI training in their curriculum. From an educational standpoint, it is a disservice to dismiss a student from the program for poor affective behavior resulting from lower levels of EI when the student was not given the tools essential for success in this area. Educators would not dismiss a student from a paramedic program based on subjective measures related to written or psychomotor skills testing, yet issues that stem from low EI and, consequently, poor affective behavior warrant dismissal regularly.

Implication 1: EI Training for Instructors/Directors

Given that lower levels of EI were common to those students required to extend or repeat their field internship, EI must become a point of discussion and action for those instructing future paramedics and those directing paramedic programs. Used in conjunction with the FISDAP's paramedic Entrance Exam (EE) at the beginning of a program, EI training, such as that offered by Bradberry and Greaves (2009), would offer paramedic instructors and program directors important tools to proactively identify areas needing improvement so that appropriate interventions can be made in the best interest of

the student. Appropriate interventions would include the integration of specific strategies designed to improve the affective behavior of paramedic students and enhance the overall quality of a paramedic program.

Implication 2: Creation of Workshops and Professional Development Presentations

Based on the relationship and correlation demonstrated between EI and field performance of paramedic interns, the findings of this study warrant the preparation and presentation of workshops, informational sessions, and other professional development opportunities at conferences for paramedic educators. These presentations could be utilized to assist leaders in the field in gaining a preliminary understanding the role EI plays in establishing affective behavioral norms.

Implication 3: Further Study With FISDAP and NAEMSE.

The relationship established between EI and field performance demonstrated in this study should be used as the foundation for a research proposal submitted to FISDAP that would explore how EI training can be used to better prepare future paramedics for the rigors they will encounter. Current and future research should be presented to organizations such as the National Association of EMS Educators (NAEMSE) and National Collegiate Emergency Medical Services Foundation with the intention of garnering support for this agenda at the national level.

Implication 4: EI Curriculum Pilot

The demonstrated relationship between EI and field performance highlights an existing gap between the preparation of paramedics and the actual rigors encountered in the field. Therefore, the researcher should submit a pilot proposal to the Moreno Valley College paramedic program director, curriculum council, and dean of public safety that

would incorporate the teaching of EI skills into the paramedic curriculum. Data gathered over time may be used to improve upon existing program objectives and promote equity of outcomes for underrepresented students within the program.

Recommendations for Further Research

Recommendations for future research that include EI testing and correlational comparisons that encompass an entire paramedic education program, span a paramedic career, and examine the prior experiences of first responders, demographical considerations, end-user perceptions, and communities served should be conducted. Each of these recommended areas for research are addressed below.

Program Benchmarks

Based on the findings during the examination of the field internship phase of a paramedic program, it is recommended that a future study be conducted that includes all three phases (didactic, clinical, and field internship) of a paramedic program to more accurately capture data related to EI, the affective domain, the impact they may have on performance over the course of the program, and whether EI increases with experience during each phase of the program.

Career Study

It is recommended that a longitudinal study be conducted to follow the entire career of a paramedic and determine if EI levels play a role in the future success or failure of the paramedic in the field. This would determine if relationships exist between EI levels and other long-term issues that may relate to EI, affective behavior, and outcomes such as burnout, work-related injury, post-traumatic stress disorder (PTSD), and disciplinary issues.

Based on the findings of this research, a qualitative study should be conducted to capture and describe the lived experiences of a paramedic in the field. Through a series of paramedic interviews, this study may yield information pertaining to resiliency and coping mechanisms and other reasons paramedic remain in the profession.

Prior Psychological Stress

It is recommended that a future study be conducted to determine if a relationship exists between EI and early childhood trauma precursors among those in first responder roles. This mixed-methods study would examine a sample population of applicants to first responder (fire, paramedic, police, and EMT) preparation programs to determine if a history of psychological trauma exists and is further correlated to EI deficits or problematic affective behaviors in the field.

The identification of prior experiences would not suggest that those who had endured early childhood trauma are not well-suited for their career choice, rather it would create awareness that exposure to challenges faced in these fields may exacerbate preexisting conditions. The intent of this type of study should be focused on the health and welfare of first responders with an emphasis on education, awareness, and their long-term mental health.

Demographics

This study did not make a distinction among participants based on demographics such as race, ethnicity, age, or gender of the participant. It is therefore recommended that a larger mixed-methods study be conducted to examine the EI of paramedic interns to determine if correlations or relationships exist among the EI levels of those belonging to similar demographic groups. This study could also determine whether demographics

play a role in paramedics' perceptions of their own EI and affective behavior or if demographics influence how the EI and affective behavior of paramedics is perceived by others.

Patient Perception

A mixed-methods study should be conducted to capture the perceptions and expectations of patients who regularly utilize paramedic services. Through interviews and patient surveys, research could compare how paramedics interpret their own behavior and patient interactions with the patient's perception of service he or she received. Capturing data based on patient perceptions could be used to help build training programs that incorporate patient feedback to foster empathy among first responders and promote a higher level of patient-centered care to better serve communities.

Communities Serviced

A mixed-methods study should be conducted that compares factors of EI and affective behavior among working paramedics in communities of varying demographics. These could include a comparison of paramedics working in urban areas versus those serving rural communities. Factors of socioeconomic status could also be considered when comparing affluent areas with impoverished communities.

Just as variation exists in the communities served, variety also exists within the community of first responders. A thematic study exploring all first responders including, police, fire, and emergency medical services (EMS) would evaluate factors related to EI and a first responder's ability to mitigate emergency situations encountered during their duties as related to affective behavior.

Concluding Remarks and Reflections

> True grit is making a decision and standing by it . . . doing what must be done. No moral man can have peace of mind if he leaves undone what he knows he should have done.
>
> —John Wayne

Growing up in the streets of urban New Jersey helped create within me the grit and the raw determination that I believe have fueled my desire to be of service and create positive changes in people. Although the product of a broken home and poverty, living with whatever family members chose to care for me instilled a desire for justice that fueled a drive to not only find a better life for myself but also to help others persevere, overcome, and find something better for themselves. Although my childhood was unfortunately filled with more dysfunction than many, I am grateful for the coaches, youth pastors, and military mentors who recognized my potential. The efforts of decent people shifted my focus by developing strengths and harnessing positive qualities that have proven to be the solid foundation of my existence. A wise person once told me, "If you quit, you lose!" Despite difficult circumstances, my less-than-ideal beginnings did not define the man I was to become. We do not choose our circumstances but we retain the choice to shape our own outlook and not only persevere but thrive in the face of adversity with nothing more than persistence and the will to do so.

First responders encounter people during their most vulnerable hour and have the opportunity to truly make a difference despite the circumstances. Their responsibility is huge! Nationwide, the need for EMS continues to grow and paramedic programs need to adapt to the changing needs of the community. Citizens deserve the absolute best first

responders who are committed to professionalism and treat others with the utmost dignity and respect. A paramedic's ability to respond to an emergency and *the manner* in which he or she responds is critical to the outcomes he or she is called upon to mitigate. The paramedic must be able to navigate not only an emergency but the *people* themselves. Appropriate affective behavior that is the result of higher EI is the key to improving this interaction and will synergistically impact every person who is involved in the emergency medical system. First responders will benefit both personally and professionally by gaining a deeper understanding of the role EI plays in their personal interactions. Patients within the community will benefit from improved care and organizations may be able to better focus on operations instead of dealing with interpersonal issues that tend to arise from poor affect with employees.

Our interactions are not without consequence. The importance of self and relationship management for paramedics cannot be understated because *how* they choose to intervene is immediate, real, and long lasting. The implementation of EI training early in the education process will enable paramedics to increase their ability to properly mitigate their own personal interactions with patients and be better ambassadors for their organizations and the communities they serve.

Brandman University's doctoral program gave me an education that has been instrumental in helping me to harness raw talent stemming from success, failure, life experience, and the process of trial and error. Gaining a full understanding of transformational leadership while finding ways to exploit opportunities to put my knowledge to work has helped define my purpose and strengthened my resolve to impact people dedicated to career fields that serve our communities.

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APPENDICES

APPENDIX A

Brandman University Research Participant's Bill of Rights

BRANDMAN University Chapman University System

BRANDMAN UNIVERSITY INSTITUTIONAL REVIEW BOARD

Research Participant's Bill of Rights

Any person who is requested to consent to participate as a subject in an experiment, or who is requested to consent on behalf of another, has the following rights:

1. To be told what the study is attempting to discover.
2. To be told what will happen in the study and whether any of the procedures, drugs or devices are different from what would be used in standard practice.
3. To be told about the risks, side effects or discomforts of the things that may happen to him/her.
4. To be told if he/she can expect any benefit from participating and, if so, what the benefits might be.
5. To be told what other choices he/she has and how they may be better or worse than being in the study.
6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study.
7. To be told what sort of medical treatment is available if any complications arise.
8. To refuse to participate at all before or after the study is started without any adverse effects.
9. To receive a copy of the signed and dated consent form.
10. To be free of pressures when considering whether he/she wishes to agree to be in the study.

If at any time you have questions regarding a research study, you should ask the researchers to answer them. You also may contact the Brandman University Institutional Review Board, which is concerned with the protection of volunteers in research projects. The Brandman University Institutional Review Board may be contacted either by telephoning the Office of Academic Affairs at (949) 341-9937 or by writing to the Vice Chancellor of Academic Affairs, Brandman University, 16355 Laguna Canyon Road, Irvine, CA, 92618.

Brandman University IRB Adopted November 2013

APPENDIX B

Informed Consent

INFORMATION ABOUT:
The purpose of this study is to examine the degree to which emotional intelligence scores, as defined by Bradberry and Greaves (2009) correlate with paramedic student success during the field internship phase of their education as determined by the California Paramedic Field Internship Major Evaluation Rating Criteria.
RESPONSIBLE INVESTIGATOR: Jim Lambert, MA

PURPOSE OF STUDY*:*
You are being asked to participate in a research study conducted by Jim Lambert, MA, a doctoral student from the School of Education at Brandman University. The purpose of this quantitative research study is to identify a direct or inverse correlation between paramedic interns with high emotional intelligence scores as defined by Bradberry and Greaves (2009) and success during their field internship as defined by the California Paramedic Field Internship Major Evaluation process.

Your participation in this study is voluntary and will include an online Emotional Intelligence assessment as well as access to your Field Internship Evaluations. The online assessment will take approximately 20 minutes to complete and will be scheduled at a time and location of your convenience. You will be provided with the results of this assessment and offered techniques that may help you improve personally and professionally. Each participant will have an identifying code and names will not be used in data analysis. The results of this study will be used for scholarly purposes only.

I understand that:
a) The researcher will protect my confidentiality by keeping the identifying codes safe-guarded in a locked file drawer or password protected digital file to which the researcher will have sole access.
b) My participation in this research study is voluntary. I may decide to not participate in the study and I can withdraw at any time.
c) If I have any questions or concerns about the research, I will contact Jim Lambert, MA at jlamber1@mail.brandman.edu or by phone at 951-712-2063; or Dr. Carlos V. Guzman (Advisor) at cguzman@brandman.edu.
d) No information that identifies you will be released without your separate consent and all identifiable information will be protected to the limits allowed by law. If the study design or the use of the data is to be changed, you will be so informed and consent re-obtained. There are minimal risks associated with participating in this research.
e) If I have any questions, comments, or concerns about the study or the informed consent process, I may write or call the Office of the Vice Chancellor of Academic Affairs, Brandman University, at 16355 Laguna Canyon Road, Irvine, CA 92618, (949) 341-7641.

I acknowledge that I have received a copy of this form and the "Research Participant's Bill of Rights." I have read the above and understand it and hereby consent to the procedure(s) set forth.

_____ Date: _____
Signature of Participant or Responsible Party

_____ Date: _____
Signature of Principal Investigator

APPENDIX C

California Paramedic Field Internship—Major Evaluation

INTERN	PARAMEDIC PROGRAM		
CALIFORNIA PARAMEDIC FIELD INTERNSHIP - MAJOR EVALUATION			
PARAMEDIC PRECEPTOR (1)	PARAMEDIC PRECEPTOR (2)		
RATING PERIOD FROM:	TO:	# HOURS:	#ALS CALLS TO DATE

RATING CRITERIA: Refer to Performance Evaluation Standards in the Internship Manual. An intern must attain a "3" in each category on the final evaluation to successfully complete field internship.

1. Frequently fails to perform procedure in a competent manner
2. Inconsistent in performing procedures in a competent manner
3. Consistently performs procedure in a competent manner

N/A Not applicable. Did not perform skill.

(Skills not observed in the field shall be evaluated in a drill situation prior to the completion of internship)

EVALUATION FACTORS	RATING	COMMENTS: are required in each major
SCENE MANAGEMENT		
1. Safety and work environment		
2. Universal precautions		
3. Crowd control		
4. Additional assistance and		
ASSESSMENT/TREATMENT		
5. Primary assessment and		
6. Patient information		
7. Physical examination		
8. Assessment interpretation		
9. Chest auscultation		
10. Cardiac rhythms		
11. Patient management		
12. Patient response to therapy		
COMMUNICATION		
13. Rapport with patient, family and		
14. Team members		
15. Radio Report		
16. Documentation		
17. Working relationship with team		

LEADERSHIP		
18. Leadership		
19. Professionalism		
20. Feedback and guidance		
EQUIPMENT		
21. Inventory maintenance		
22. Equipment operation		

EVALUATION FACTORS	RATING	COMMENTS: are required in
AIRWAY		
23. Airway management/Oxygen therapy		
24. Advanced airways		
25. Pleural decompression		
CIRCULATION		
26. Defibrillation/Cardioversion		
27. Intravenous access		
28. Pneumatic antishock garment		
MUSCULOSKELETAL SKILLS		
29. Bandaging/splinting		
30. Extrication/patient positioning		
31. Spinal immobilization		
PHARMACOLOGY		
32. Drug administration technique		
33. Drug knowledge		
EXPANDED SCOPE		
OTHER SKILLS		

TREATMENT SKILLS
SUMMARY OF PERFORMANCE

Preceptors must provide a written summary of the intern's performance to date:
Plan for improvement:

Preceptor signature:	Cert #	Preceptor signature:	Cert. #
Intern signature:		Agency Rep signature:	

Rating Criteria

Evaluation Factors	Rating 1	Rating 2	Rating 3
Safety and Work Environment	Frequently fails to provide a safe and adequate work environment.	Inconsistently determines or provides a safe and adequate work environment or slowly initiates appropriate measures.	Consistently determines safety for patient, self and team members and ensures and adequate work environment in a timely manner.
Universal Precautions	Frequently fails to use appropriate universal precautions, personal protective equipment or care for equipment appropriately.	Inconsistently uses universal precautions and personal protective equipment or cleans equipment inappropriately.	Consistently uses universal precautions and wears appropriate personal protective equipment specific for patient condition. Cleans and sanitizes equipment in accordance with provider policy and procedures.
Crowd Control	Frequently fails to take steps to control crowd or deal effectively with family or bystanders.	Inconsistently initiates or delegates crowd control. Deals ineffectively with family and bystanders.	Consistently initiates or delegates appropriate crowd control and deals effectively with family and bystanders.
Additional Assistance & Equipment	Frequently fails to recognize the need for additional assistance and/or equipment needed.	Inconsistently or slowly recognizes the need for additional assistance or equipment.	Consistently recognizes the need for and requests additional assistance or equipment needed in a timely manner.
Primary Assessment & Intervention	Frequently fails to perform an organized and complete primary assessment within 60 seconds or fails to intervene appropriately.	Inconsistently or slowly performs a complete and/or organized primary assessment. Does not intervene appropriately in a timely manner.	Consistently performs complete and organized primary assessment within 60 seconds and intervenes appropriately in a timely manner.
Evaluation Factors	Rating 1	Rating 2	Rating 3
Assessment Interpretation	Frequently fails to determine a working diagnosis, or substantially misinterprets the patient's problem. Cannot formulate a working diagnosis for treatment.	Inconsistently or slowly determines a working diagnosis or substantially misinterprets the patient's problem.	Consistently interprets and correlates assessment information correctly.
Chest Auscultation	Frequently fails to	Inconsistent knowledge	Consistently identifies

	demonstrate adequate assessment and identification of basic breathing sounds.	of chest auscultation and breath sounds.	breath sounds. Adequate knowledge of chest auscultation.
Cardiac Rhythms	Frequently fails to identify rhythms in a timely manner.	Inconsistently identifies rhythms in an accurate and timely manner.	Consistently identifies rhythms in an accurate and timely manner.
Patient Management	Frequently fails to develop and implement an appropriate plan of action.	Inconsistently or slowly develops or implements an appropriate plan of action.	Consistently develops and implements an appropriate plan on actions.
Patient Response to Therapy	Frequently fails to assess patient response to therapy/interventions.	Inconsistently assesses patient response to therapy/interventions.	Consistently assesses patient response to therapy/interventions.
Rapport with patient, family and bystanders	Frequently fails and does not attempt to establish rapport with patient, family and bystanders. Is inconsiderate and disrespectful to others.	Inconsistently builds rapport with patient, family and bystanders. Inconsistently shows consideration and respect for others. Does not instill confidence in patients.	Consistently builds rapport with patient, family and bystanders. Shows consideration and respect for others. Instills confidence in patient.
Team Members	Frequently fails to report pertinent information to team members.	Inconsistently report pertinent information to team members.	Consistently communicates all pertinent information to team members.
Radio Report	Frequently fails to recognize the need to utilize medical control.	Inconsistently utilizes and recognizes medical control. Reports are disorganized and incomplete.	Consistently utilizes medical control appropriately. Reports are organized and complete.
Documentation	Frequently fails to complete patient care reports in a timely, accurate, through or legible manner.	Inconsistently completes patient care reports in a timely, accurate, through, or legible manner.	Consistently completes patient care reports in a timely, accurate, through or legible manner.
Evaluation Factors	Rating 1	Rating 2	Rating 3
Defibrillation/Cardioversion	Frequently fails to demonstrate correct procedure and knowledge of indications for use.	Aware of some indications for use, but needs some direction to perform procedure.	Consistently performs procedure correctly. Aware of indications for use.
Intravenous Access	Frequently fails to establish IV access due to poor or improper	Inconsistently establishes IV access. Needs some direction	Consistently uses proper technique. Completes procedure

	technique.	to complete procedure.	in a timely manner.
Pneumatic antishock garment (MAST)	Frequently fails to perform procedure in a systematic and timely manner.	Inconsistently performs procedure in a systematic and timely manner.	Consistently performs procedure in a systematic and timely manner.
Bandaging/Splinting	Frequently fails to apply appropriate and adequate bandages/splints in a timely manner. Ineffective technique or treatment causing potential harm to patient. Fails to initiate any treatment.	Inconsistently applies appropriate and adequate bandages/splints in a timely manner.	Consistently applies appropriate and adequate bandages/splints in a timely manner.
Extrication/patient positioning	Frequently fails to initiate adequate extrication/patient positioning; does not have sufficient control to protect patient from injury.	Inconsistently initiates adequate extrication/ patient positioning; does not have sufficient control to protect patient from injury.	Consistently initiates and directs extrication/ patient positioning in a manner that protects the patient from injury.
Spinal Immobilization	Frequently fails to initiate spinal immobilization when indicated. Does not know complete or correct procedure.	Inconsistently initiates spinal immobilization when indicated. Knows complete and correct procedure.	Consistently initiates spinal immobilization when indicated. Knows complete and correct procedure.
Drug Administration Technique	Unfamiliar with drug administration procedure. Unable to calculate correct drug dosages.	Inconsistent knowledge of drug administration procedure. Unable to administer drugs in a timely manner.	Consistently administers drugs correctly and in a timely manner.
Drug Knowledge	Inadequate knowledge of indications, contraindications, adverse effects and dosages of drug therapy.	Inconsistent knowledge of indications, contraindications, adverse effects and dosages of drug therapy.	Consistent knowledge of indications, contraindications, adverse effects and dosages of drug therapy.