

2016

16PF® Traits as Predictors of Emergency Medical Service Worker Tenure

Beverly J. Paschal
Walden University

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Walden University

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Beverly Paschal

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Walden University
2016

Abstract

16PF® Traits as Predictors of
Emergency Medical Service Worker Tenure

by

Beverly Jean Paschal

MA, University of Nevada-Reno 1994

BS, University of La Verne, 1981

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

March 2016

Abstract

The United States is experiencing a severe shortage of Emergency Medical Service (EMS) paramedics. The job outlook for paramedics (EMT-P) for the years 2012-2022 is predicted to increase by 23%-33%, which is much faster than the 4% average increase of other first-response professions. The average tenure of paramedics is less than 4 years. There is a gap in the literature concerning paramedic personality traits and tenure. The primary objective of the current study is to provide empirical data on the personality traits possessed by long-term paramedics (5+ years), and compare them to those with shorter tenure (< 5 years). Using Allport's Trait Theory, it was predicted that personality would affect paramedic longevity. The 6 personality traits tested were warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. A socio-demographic questionnaire determined the length of their EMS career, while the 16PF[®] Assessment tested their personality traits. Using *t* tests, Mann-Whitney *U* tests, and a set of regression analyses, data were examined to determine if length of career and personality traits predicted paramedic tenure. The research sample consisted of long term paramedics and former paramedics. The results showed that of the 6 personality traits, only warmth was a significant predictor of paramedic tenure. A logistic regression showed that for every additional point in warmth, the odds of leaving EMS prior to 5 years increased by a factor of 2.77. This study provides support for positive social change by helping EMS to learn how to increase recruitment and tenure. It also helps by advising EMS agencies to attend to the mental and emotional health of their paramedics by being aware of the level of their warmth personality trait.

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Dedication

I am dedicating this paper first to myself for believing that at the age of 48, I was not too old to begin the pursuit of my dual major PhD, and at 61, not too old to complete this lifelong dream!

Thank you to my new, sweet husband of 4 years, who has NEVER stopped believing in me, and has patiently been waiting for us to start our normal life!

Thank you to my Mom, for patiently *typing* my Dad's Dissertation, on a manual Remington typewriter, when I was only a 1- year-old toddler running around and getting in her way!

To my grown children, David and Niccole..."I will like you forever! I will love you for always! As long as I'm living, my baby you'll be!" (See, I told you I would eventually finish!)

To my wonderful Daughter (in-law), Adrian, for being the *best thing* that ever happened to my son and our family! Thank you for your love and support.

Mostly, I dedicate this journey to my Grandchildren...Ethan, Timmy and Meagan. May you always believe you can accomplish *anything* you set out to do! Always reach for the moon, and if you fall short, you will still land among the stars! Lastly, may you always believe in the importance of education; both inside and outside the walls of formal education.

Always know how much Nama loves & believes in you...now and forever!

" From here to the moon and back..... I love you with all my heart!"

Acknowledgments

I would like to thank the wonderful first response agencies I have been so fortunate to work with from across the United States, and even more so those located in Northern Nevada and Northern California! These professionals have honored me with their trust and assistance both in my private life, my psychotherapy practice and in my work on this dissertation.

I would also like to thank all the first responders that daily entrust me with their deepest and most sensitive feelings, fears, and even the uninvited ghosts that visit them on a regular basis. Your trust has honored me more than words can ever say.

I graciously thank my dissertation committee members: Chairman: Dr. David Kriska, who has continued to support me throughout this entire stressful process.

Thank you to my committee members, Dr. Matthew Fearington and Dr. Virginia Salzer, for agreeing to jump on board when my committee fell apart in my last year!

Last but certainly not least, I would like to acknowledge the selfless dedication that is given daily by the men and women of the numerous emergency medical services and other first responders that take care of our families and our country. Thank you for always being there!

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Chapter 1: Introduction to the Study

Introduction

According to Dick (2008), the Emergency Medical Service, (EMS) industry is struggling greatly in obtaining and retaining paramedics. This current study was designed to determine if personality traits influence the number of years a paramedic remains in emergency medical services.

Background of the Problem

Powers (2007) noted a lack of studies performed to determine what personality traits are needed to fit the right person with the EMS profession. Roberts, Kuncel, Shiner, Caspi, and Goldberg (2007) emphasized the role that personality traits play in a person's attainment of and tenure in an occupation. Roberts et al. stated that emergency medical technicians – paramedics (EMT-Ps) in the United States are leaving the emergency medical service profession at record rates. EMT-Ps are the EMS professionals with the highest level of education for prehospital emergency medicine. The extreme occupational turnover in EMS presents as an ideal candidate for studying and using industrial and organizational psychology (I-O Psychology). This study was designed to generate an improved understanding of EMS and those that choose it as their profession.

In some parts of the United States, the yearly turnover rate for paramedics is as high as 20% (Powers, 2007). This 20% turnover rate is significant and unusually high, especially when compared to an average annual turnover rate of 2.6%–4.0% for firefighters (Ahi, 2008; Service Canada, 2007). Both paramedics and firefighters work in the field of emergency first response and often share living quarters and work culture, but

have turnover rates that differ by 16% or more in some parts of the United States (Ahi, 2008; Powers, 2007; Service Canada, 2007).

Although there are very few studies about EMS, there are significant amounts of research on other first response occupations such as law enforcement and fire service. These studies have shown the typical U.S. police officer to be highly controlled, low in anxiety, slightly independent, and strongly tough-minded (Lorr & Strack, 1994). Fannin and Dabbs (2003) found that fearlessness, low openness, low communion, and low agreeableness were associated with the choice to join the fire service. Fannin and Dabbs also determined that the sole personality trait related to joining EMS in their study, was extraversion. Although numerous studies have been conducted regarding the high incidence of occupational stress for paramedics (Chng & Eaddy, 1999; Corneil, Beaton, Murphy, Johnson & Pike, 1999; Vettor & Kosinski Jr., 2000; Weiss, Marmar, Metzler & Ronfeldt, 1995) there is a significant lack of research into what actual personality characteristics and traits appear most frequently among paramedics (Chng & Eaddy; Grevin, 1996).

Problem Statement

For several years, reports have indicated shortages of paramedics are increasing in the United States (Stern, 1996; Powers, 2007). A high turnover rate contributes to this shortage, which may be due to psychological factors and hiring mistakes for paramedics. Numerous studies have been conducted regarding the high incidence of occupational stress for paramedics (Moran & Britton, 1994; Regehr, Goldberg Glancy & Knott, 2002), suggesting that personality may play a role in paramedic success. There is a significant

lack of research, however, into what these personality characteristics actually demonstrate (Grevin, 1996; Wagner, 2005). This research gap also extends to a lack of research on what particular traits are possessed by those paramedics who have been working continuously and successfully in the field of emergency medicine for several years.

I designed this study to examine a possible relationship between the personality traits of paramedics and the length of time they remain employed in EMS. My study determined there is a potential relationship between personality traits and tenure. This information may be helpful to those in charge of EMS recruitment and hiring. By considering the results, those in charge of recruitment will have another possible tool to utilize when they interview, test and select paramedics who are needed in the United States to assure the emergency medical needs of the U.S. population are being met.

Purpose Statement

The purpose of this quantitative study was to determine if there are specific personality traits that differentiate long term paramedics (those with five or more years of experience) from those of former paramedics, who terminated their EMS careers shortly after starting it (here defined as less than five years in the profession). In particular, this study was designed to determine whether or not there are personality traits that indicate whether someone will remain in the field of emergency medical services for five or more years. I chose the period of five years by adding the average number of years it takes to become a paramedic, (three years), with two more years representing work as recent

paramedic graduates, hereafter referred to as newer paramedics. Newer paramedics are the most likely to leave EMS after the first couple of years.

Nature of the Study

The primary objective of the current study was to provide empirical data on the personality traits possessed by paramedics who had been working in the EMS field for five or more years. The personality traits of paramedics that had been in the EMS field for five or more years, was compared with the personality traits of former paramedics who quit EMS, prior to the five-year mark, to move to a non-first response related field of employment.

The hypothesis tested in this study was that certain personality traits are present in long term paramedics working in the field of emergency medical services. Determining what these personality traits are, was intended to inform EMS agencies in how to test for the existence of these traits, and to provide an increased agency awareness of whether or not they are hiring a paramedic who has a personality that is suitable for long term employment and long term commitment to their agency and the public they serve.

For the past decade, researchers have argued that personality is an ineffective predictor of work outcomes and work performance (Barrick & Mount, 2005). The emergence of Industrial and Organizational (I-O) Psychology has worked hard to change this conception (SIOP, 2014). Industrial and Organizational Psychology "...is the scientific study of the workplace. Rigor and methods of psychology are applied to issues of critical relevance to business, including talent management, coaching, assessment,

selection, training, organizational development, performance, and work-life balance” (SIOP, 2014, membership web page.).

According to Barrick and Mount (2005), I-O researchers have documented that all people possess personalities and that the traits of these personalities matter regarding predicting and explaining work behavior. The majority of this research has been construct-oriented. Barrick and Mount utilized the Big Five traits to research if personality predicts job performance. The Big Five personality traits are: neuroticism, openness, agreeableness, extraversion and conscientiousness (Barrick & Mount; Young, Quilty & Peterson, 2007). This research has consistently demonstrated the interaction between job performance and personality. However, my literature review for this study showed a significant lack of old or new literature regarding job performance and personality. A research gap on paramedic personality traits by I-O researchers or any other type of researchers was blatantly absent. However, research regarding paramedic stress has shown that paramedics are vulnerable to the stress that comes from helping or wanting to help injured people, as well as the impact of witnessing recurring traumatic events (Belgium, 1999; Blumenfield & Byrne, 2002; Jonsson & Segesten, 2004).

Another paramedic personality trait addressed by researchers, such as Dawis and Loftquist (1984), and Schmidt and Hunter (1998), are coping strategies for dealing with the stress that comes from their work. Researchers have encouraged the use of these strategies, but have not investigated how paramedics’ personality traits pertain to their ability to utilize these coping strategies (Regehr et al., 2002). Research conducted on other professions has provided much information regarding stress and personality traits of

their employees. Dawis and Loftquist found positive outcomes such as stress reduction, higher satisfaction and organizational tenure when individuals' characteristics and personality fit with the characteristics of their work environment. When a person's values and personality traits correspond with the values of the organization they are working in, they tend to have a greater level of job satisfaction, organizational commitment, lower stress and fewer turnovers. Although many employers believe that an employee who is interested in the job they choose, (e.g., a person with mechanical interests choosing to be a mechanic) will be satisfied in the job, Schmidt and Hunter have stated this is not the case.

I used the 16 Personality Factor (16PF[®]) Assessment to determine the association between personality characteristics and longevity as a paramedic. I specifically compared the 16PF[®] scores of long term paramedics with the scores of previously licensed, former paramedics, who quit EMS prior to the five-year mark. The six personality factors I used were: warmth, reasoning, emotional stability, liveliness, social boldness and openness to change. The 16PF[®] was developed by Raymond Cattell, who created the test to measure personality factors. This questionnaire (16PF[®] 5th Edition Questionnaire, 2009) is a comprehensive measure of normal personalities, and provides an in-depth, integrated picture of the person as a whole.

Cattell investigated 18,000 previously documented traits and concluded that only a few of these traits were real traits (Schatz, 2009). Another discovery that came out of Cattell's research was what Cattell referred to as broad dimensions (Cattell & Schuerger, 2003). These broad dimensions are referred to as the "Big Five Factors of Personality"

(Cattell & Schuerger, p.1) and consists of openness, conscientiousness, neuroticism, agreeableness and extraversion.

Research Question

The purpose of this quantitative study was to determine if paramedics with long term employment, differ on average, from former, short term paramedics on specific personality traits. For this study, long term is five (5) or more years, while short term is less than five (5) years. The personality traits tested were taken from the 16PF[®]. The traits are: warmth, reasoning, emotional stability, liveliness, social boldness and openness to change.

Hypotheses

This study was designed to test the following hypotheses about personality traits for current, long term paramedics (paramedics who had worked in the field for five or more years) versus former, short term paramedics (former paramedics who had worked in the field for less than five years). Using the 16PF[®], I examined sets of two hypotheses:

- The null hypothesis (H_0) was that there was no statistically significant difference between the population mean scores of personality traits of paramedics currently working in EMS for five or more years and former paramedics that quit EMS prior to five years, as measured using the 16PF[®] scales warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change.
- The alternative hypothesis (H_1) was that there was a statistically significant difference between the population mean scores of personality traits of paramedics currently working in EMS for five or more years and former paramedics that quit

EMS prior to five years, as measured using the 16PF[®] scales warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change.

Theoretical or Conceptual Framework

The constructs of the 16PF[®] Assessment and the relationship of a person and the occupation they choose is further discussed. The purpose of using the 16PF[®] to assess research participants for this study is defended. I discuss the most important aspect of the theory, that personality of a paramedic will positively affect tenure, in Chapter 2.

In a review of the link between personality and occupational performance, Hogan, Hogan and Roberts (1996), concluded that a well-constructed measure of normal personality traits is a valid predictor of a wide range of occupational performance. Barrick and Mount, (2005), in agreement with Hogan, Hogan and Roberts, have also stated that research has demonstrated that personality traits have a greater effect at work than does general mental ability. Studies have shown that general mental ability is less reliable than one's personality traits when predicting job performance (McHenry, Hough, Toquam, Hanson & Ashworth, 1990; Mount, Witt, & Barrick, 2000; Schmidt & Hunter, 1998).

Definition of Terms

16PF[®] Fifth Edition Questionnaire: A quantifiable assessment that is used for measuring 16 normal personality traits. The 16 traits are: warmth, reasoning, emotional stability, dominance, liveliness, rule-consciousness, social boldness, sensitivity, vigilance abstractedness, privateness, apprehension, openness to change, self-reliance, perfectionism and tension (Cattell & Schuerger, 2003).

Agreeableness: People who are considered agreeable are friendly, warm, altruistic, modest, trusting, straightforward and cooperative (Friedman & Schustack, 2012). This type of person tends to get along with most people.

Anxiety: Emotional distress (IPAT, 2010).

Burnout: Long term exhaustion and a diminished interest in one's work (Vettor & Kosinski, 2000).

Compassion Fatigue/Stress: A condition that is characterized over time by a gradual decline of compassion. It can happen to those people who work with tragedy and loss on a regular basis. It is also referred to as 'vicarious traumatization'.

Conscientiousness: People who are thoughtful, organized, goal oriented and pay attention to detail.

Coping Strategy: It is using skills that a person already has in order to work through a situation that is causing the person emotional discomfort or distress.

EEOC: Equal Employment Opportunity Commission of 1990.

Emergency Medical Service (EMS): A three tiered organization that was developed to provide pre-hospital emergency medical care. The three tiers, in descending order, are: emergency medical technician-paramedic, emergency medical technician-intermediate and emergency medical technician-basic. The responsibility of this organization is to quickly respond to a medical emergency, start emergency medical care and then transport to the emergency room, where the hospital emergency team takes over.

Emergency Medical Technician-Paramedic (EMT-P): "Individuals who have the highest level of EMS education, training and certification. To reach the EMT-P level

requires 1,440–1,640 hours as well as extensive clinical rotations in a hospital emergency department, as well as on an ambulance” (Bureau of Labor Statistics, 2010-11, p. 1).

Emotional Compartmentalization: “Consciously or subconsciously suppressing or 'compartmentalizing' or 'sectioning off' upsetting thoughts and emotions in order to justify engaging in certain behaviors” (Gertz, 2014, p. 1; Baldino, 2009).

Emotional Distance: “A strategy that involves briefly separating personal feelings from the task at hand and the behaviors of the person receiving the care. It allows one to provide more objectivity in caregiving” (Doty, 2007, p.12).

Emotional Stability: The ability to, or not to, remain calm and adapt to whatever situation you find yourself in.

Empathy: This study uses Doty’s (2007) definition of empathy as:

Recognizing and feeling the emotional experience of others. Empathy grows from gathering information about another person's body and facial expressions, tone of voice, and pace of words. At the same time, empathic persons know that the other person's experience differs from their own experience, even in the same situation. There is a sense of knowing the other person's experience and of caring about the other person and, at the same time, knowing that the emotion and experience belong uniquely to that other person. (Doty, 2007, p. 4)

Empathic Listener: “...may feel the emotional experience of someone else yet listen objectively and provide support” (Doty, 2007, p. 4).

Extraversion: A personality trait that makes a person enjoy being around others, initiating and keeping friendships. This trait also makes a person outgoing and lively.

First Responder: A person that is either in law enforcement, a firefighter or EMS. If the responder is a paramedic, they will assess the person or people and use their medical equipment to stabilize the person or to keep them alive, until they can get them to the emergency room.

Five Factor Model: “The five-factor model of personality is a hierarchical organization of personality traits in terms of five basic dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience” (John & McCrae, April 2006, p. 175).

Global Factors: Five traits constructed from the factor analysis of the 16 primary traits: extraversion, independence, tough-mindedness, self-control, and anxiety (Cattell & Schuerger, 2003).

Independence: A personality trait where a person has the “tendency to accommodate to life and people versus actively and forcefully attempt to shape events and others” (IPAT, 2010, p. 82).

Literature paramedic population: The paramedic populations referred to in other studies as compared to the paramedic population of this current study.

Liveliness: A personality trait where a person is enthusiastic, spontaneous and attention-seeking (IPAT, 2010, p. 101).

Neuroticism: Emotional instability. These people present as nervous, tense, high-strung, worriers, depressed, vulnerable, and at times hostile (Friedman & Schustack, 2003).

Openness to Change: This person would be willing to try new things and be accepting of not doing it the way they always have.

Occupational Health: "...the ability of a worker to function at an optimum level of well-being at a worksite as reflected in terms of productivity, work attendance, disability compensation claims, and employment longevity" (Occupational Health, 2014, p. 4).

Primary Traits: The 16 fundamental building blocks of personality, as defined by the 16PF[®] Assessment (Cattell & Schuerger, 2003).

Reasoning: Ability to assimilate and analyze verbal and numerical information (IPAT, 2010).

Social Boldness: The degree to which a person feels at ease in social situations (IPAT, 2010).

SIOP: Division 14: Society for Industrial and Organizational Psychology.

Industrial-Organizational (I-O) psychology is the scientific study of working and the application of that science to workplace issues facing individuals, teams, and organizations. The Society for Industrial and Organizational Psychology and Division 14 of the American Psychological Association (APA) and Organizational Affiliate of the Association for Psychological Science (APS) make up the official SIOP: Division 14. (Society for Industrial and Organizational Psychology, 2016, p. 1)

Sympathy: Unlike empathy, which is a healthy emotion, sympathy “involves a full emotional connection and being flooded with the emotion of the other person”. Empathy has some separateness. (Doty, 2007, p. 4).

Tough-Mindedness: “The way a person processes information, the extent to which they will solve problems at an objective, cognitive level or by using subjective or personal considerations.” (Rogers, Fearing & Juncker, 2011, p. 18).

Trait: A trait is a psychological disposition that remains unchanged throughout a person’s lifespan. Trait differences between people are what makes up their personality. Examples of traits are extraversion, neuroticism, and agreeableness.

Trait Approach: Listing the characteristics that are common to all people and then when describing an individual, only using the characteristics they display.

Trait Theory: “The combination and interaction of various traits, forms a personality that is unique to each individual. Trait theory is focused on identifying and measuring these individual personality characteristics.” (Cherry, 2015, p. 1).

Warmth: The warmth primary scale was found to be related to measures of social involvement, especially those reflecting an individual's consideration of others' feelings and a willingness to help...High scorers on the 16PF® readily give help and comfort to others. Low scorers are likely to remain aloof and detached from others (IPAT, 2009, p. 164).

Assumptions, Limitations and Delimitations

Assumptions

This study assumed that a paramedic working for less than five years in the field indicates a poor match in the EMS occupation. Whereas working for more than five years indicates a good match of the person with the EMS occupation. The turnover rate for paramedics is as high as 20% in some parts of the United States (Powers, 2007), and the average professional paramedic career is less than four years (Beaton & Murphy, 1993; Mitchell, 1983; Vetter & Kosinski, 2000). Grigsby and McKnew (1988; as cited by Vetter & Kosinski, 2000) have reported paramedics to have the highest mean burnout rate observed among health professionals. Based upon these statistics and research statements, the cutoff mark for this study was set at five years. I considered any paramedic still working in EMS for five years or more to be a long term paramedic, and any former paramedic who quit EMS prior to the five-year mark, to be a short term paramedic.

In 2005, the National Highway Transportation and Safety Administration (NHTSA) sponsored a meeting entitled EMS Workforce for the 21st Century. Representatives of six federal agencies and 16 national EMS organizations attended this meeting. The purpose of the meeting was to examine the current and future employment needs of EMS personnel, as well as to determine ways to calculate the workforce shortage. It is projected that EMS employment needs will grow by 21–35% over the next few years (Lowe & Bolton, 2002). The outcome of this meeting was that current growth of the EMS workforce is not enough to keep up with the projected EMS employment requirements. Although this meeting projected a shortage of EMS personnel in the next

few years, it did nothing to determine the cause or the correction. Numerous authors assume that the cause of attrition in EMS is the stress created by the type of work involved (Chng & Eaddy, 1999; Corneil et al., 1999; Powers, 2007; Vettor & Kosinski Jr., 2000; Weiss et al., 1995)). The assumption that certain type of personality traits and subsets of personality traits are responsible for or contribute to EMS attrition was not covered. An individual's unique constellation of psychological states and traits make up one's personality. Personality types are mere descriptions of a person, and not something presumed to be inherent within them (Schatz, 2009).

In 1950, Cattell defined personality as “that which permits a prediction of what a person will do in a given situation” (IPAT, 2010, p. 59). When looking at the personality type that performs well in EMS, it is vital to remember that a personality type is a constellation of traits as well as states that are similar in pattern to a single identified category of personality that is within a classification of personalities (Schatz, 2009). Personality state versus personality trait, is actually about measuring the personality states, and seeking an assessment of the strength of personality traits that appear to be relatively transitory in nature, and situationally specific (Schatz). By determining a personality state (which is therefore situationally specific) from a personality trait (which is relatively transitory in nature), it can be determined what personality states are statistically shown to be common in long term paramedics. By determining these personality traits, the employment outcome should increase in length of time a paramedic stays employed in EMS

According to Hogan Assessment Systems (2001), organizations and companies are increasing their willingness to compromise good hiring practices in order to hire people as expeditiously as possible. Companies are discounting the negative outcome and consequences of hiring the wrong person by their desire to fill an empty position within the organization. Black (2000) emphasizes this point by noting that it is a reasonable assumption to expect that different personality traits would be important within different occupational contexts. Without knowing what these personality traits are, EMS agencies will continue to interview and employ paramedics that are able to pass the academic classroom piece, but once they are actually employed in the field of EMS, do not remain.

Perspectives of personality studies are important when a company is making employment decisions. Perspectives of personality are the forces that make people distinctively themselves. The study of personality assumes the premise that human cognition, emotion, and behavior are dependent upon the characteristics of the person, the situation, and the interaction between the person and the situation or environment (Steyer, Schmitt & Eid, 1999). One's personality determines work ethics. Personality is what determines how a person will perform at work (Daw, 2010; Hogan Assessment Systems, 2001). Personality will also determine if a specific occupation will fit with a specific person.

Trait theory is one of the major approaches to the study of human personality. Gordon Allport (1897–1967) was one of the early pioneers that focused on the study of human traits, which Allport often addressed as dispositions (Rosenzweig & Fisher, 1997). Trait theorists believe the measurement of traits to be the same as habitual patterns of

thoughts, behaviors and emotions (Kassin, 2003). Based upon this perspective, traits are relatively stable over time, differ among individuals, and influence a person's behavior.

Allport also believed that a person was unique, had a consistent personality and their individuality was based upon various types of traits (Rosenzweig & Fisher, 1997).

Allport defined these traits as:

- Individual: traits possessed by one person
- Common: traits possessed by many people
- Cardinal: one trait that dominates the person
- Central: small number of important traits that may affect many behaviours [sic]
- Secondary: many consistent traits which are not often exhibited
- Motivational: very strongly felt traits
- Stylistic: less strongly felt traits (Retrieved from: <http://www.wilderdom.com/personality/traits/PersonalityTraitsGordonAllport.html>).

Allport referred to the study of traits, as the study of dispositions. Allport stated central traits as being basic to an individual's personality. Whereby, he referred to secondary traits as being more peripheral (Schatz, 2009). Allport defined 'common traits' as those that are recognized within a specific culture, and vary between cultures.

‘Cardinal traits’ are the traits that a person or individual may be strongly recognized for (Schatz).

Piedmont (1993) determined that a significant amount of job related distress is directly due to one’s personality. Individuals who have a history of anxiety, depression, and are unable to deal with everyday stressors, tend to be the same individuals that will experience emotional exhaustion, burnout and depersonalization at work (Piedmont).

Vettor (2000) refers to burnout as a long term exhaustion and a diminished interest in the person's work. Emotional exhaustion, anxiety, depression, burnout and depersonalization will all effect employee morale, absenteeism, and turnover. In a study done by Grevin (1996), it was found that individuals who choose to become paramedics, may in fact, share characteristics that predispose them to particular types of stress reactions. By recruiting both sample groups in a random manner, and with the only absolute criteria being years of work as a paramedic, this resulted in an accurate representation of the populations from both groups.

The 1991 meta-analyses that Barrick and Mount did on the relationship between job performance and personality traits, is considered seminal research in the field of personnel selection (Barrett et al., 2003). It was Barrick and Mount’s study, as well as others that came after it, that led to the general acceptance of the five-factor model of personality, and the usefulness it provided in predicting performance for all jobs (Barrett et al.). Another result of the acceptance of Barrick and Mount’s meta-analyses has been the use of personality tests as selection devices for numerous personnel selection,

specifically for the selection of police officers (Barrett et al.). Assumptions are unverified facts. Assumptions carry risks. A mitigation discussion would be appropriate.

Limitations and Delimitations

A limitation to the assumptions of both Piedmont (1993) and Grevin (1996) is that a person is not simply a combination of specific values on a specific number of independent trait dimensions. As emphasized by Revelle and Anderson (1995), a person's trait dimensions are from the information processing of their unique memories and perceptual structures. This is what leads to their unique cognitive, affective, and behavioral way of interacting in the world. Another limitation of their study is that it does not account for the adaptability a person has in regard to performing a task when it is required of them.

This comparison study used the 16PF[®] to determine personality traits of current (long term) paramedics, as compared to the personality traits of former (short term) paramedics that quit the field of EMS prior to the five year mark. Since the 16PF[®] is an assessment that is taken online and not proctored, truthfulness of who was actually entering the answers could have been a limitation. There could have also been a limitation from this type of study, as a large enough sample of both currently employed paramedics and previously employed paramedics had to be located.

Another limitation of this study is the size of the agency attempting to utilize the information for recruitment and employment. Up to this point in time, I have not conducted a job analysis of various agency sizes. I hope the results of this study will provide information that is relevant enough to encourage the pursuit of such a strategy.

The usability of the 16PF® results would not work well in a rural setting where the EMS agency is made up of volunteers. This study does not utilize any EMS sample from rural agencies that consist of volunteer paramedics. The generalizability of this study may also be limited by obtaining an optimal comparison group of previously employed paramedics. The sampling procedure itself may also cause a bias, due to self-selection, rather than random selection. The study does not comply with test validation standards, as there is no job analysis as required by the Uniform Guidelines or the SIOP Principles.

Significance of the Study

This study may contribute to an understanding of personality factors in paramedics that contribute to extended tenure in the EMS field. The study results may also contribute to the selection of paramedics with personality traits that are conducive to a decrease in employee turnover, morale problems, absenteeism, and an improvement in the psychological state of the EMS agency through psychologically healthier field employees. There is great cost to an Emergency Medical Service Agency that is required to replace a seasoned paramedic. This study may provide a predictive model for the positive selection of paramedics as well as creating social change in two ways. It has the potential to provide Emergency Medical Service Agencies a predictive model with which to select and hire paramedics who have the personality traits that lead them to enjoy what they do. It will also allow the employment process to take place with a predictable amount of certainty the paramedic will succeed and remain with the agency for several

years. I hope that by accessing this information, it will increase the success and retention rate of paramedics, thereby lowering the cost of attrition to the EMS agency.

I hope the results of this study will make a positive impact in the employment of paramedics, as well as on the prehospital health care provided to the citizens of this nation. By improving the emergency health care provided by the first responders, I believe this will contribute in a positive manner to society as a whole.

Summary

Roberts et al. (2007) make an important point regarding the role personality traits play in the attainment and tenure of one's occupation. They state that at best, personality traits have been sporadically studied over the past few decades even though researchers such as Schmidt and Hunter (1998), Barrick and Mount (2005), and Dawes and Loftquist (1984), have shown there is a connection between personality traits and employment tenure. Paramedics and Emergency Medical Technicians (EMT's) are leaving the Emergency Medical Service profession at record rates, and yet there are no studies being done to determine what personality traits are needed to fit the right person with the EMS profession (Powers, 2007).

Chapter 2: Literature Review

Introduction

This chapter provides a comprehensive review of previous research regarding paramedics, with an emphasis on personality traits, personality theories and the relationship between personality traits and employment tenure. It also discusses the concepts of personality theory articulated by various historical psychologists. This review of the literature highlights the lack of existing information and literature regarding the personality traits of paramedics, and contrasts this with the abundance of research on personality theory and personality trait studies of other emergency and first responders.

The study of personality assumes the premise that human cognition, emotion, and behaviors are dependent upon the characteristics of the person, the situation, and the interaction between the person and the situation or environment they are in (Steyer et al., 1999). Personality traits of a person predict how a person will work, and personality determines if a specific person is a good fit for a specific occupation (Hogan Assessment Systems, 2001). In this review, I discuss the concepts of what determines personality traits and the comparisons and contrasts of different points of view regarding personality traits in paramedics. I also discuss a potential association between the personality traits of paramedics and tenure. These perspectives of personality are what make people distinctively themselves.

Literature Search Strategy

I conducted a literature search to obtain peer-reviewed knowledge as well as published studies using three strategies. I first searched online databases including

PsycINFO, PsycARTICLES, Academic Search Premier, EBSCO, GOOGLE, and The Mental Measurements Yearbook. I also searched nonelectric literature resources by searching in person the following campus libraries: The Indiana University Library, the University of Nevada-Reno Library, and the University of Nevada-Reno School of Medicine Library. I also searched the websites of the National Association of State Emergency Medical Services Officials Office, the American Association of Ambulances, and the Social Psychology Department at the University of Texas at Austin. After this preliminary research, I further reviewed the reference lists of the obtained studies and articles to look for studies not listed in the previous databases (e.g., technical reports). This search was not limited to specific years due to the scarcity of published information regarding paramedics' personality traits.

My primary search keywords included both singular and combined versions of the following: paramedic(s); EMT; medic(s); EMS; emergency medical service(s); first responder(s); emergency responder(s); ambulance; emergency medicine; pre-hospital medical treatment; pre-hospital medicine; emergency room; emergency service; pre-emergency room medicine; personality; personality traits + 'other parameters'; fire fighters; law enforcement; police; cop(s); shift work; posttraumatic; trauma; job satisfaction; job tenure; employee retention; organizational stress; organizational change; organizational performance; employment conditions; turnover; employment; job satisfaction; job performance; career path; career; field provider; supervisor/manager; personality psychology; warmth; emotional warmth; anxiety; depression; openness; stress; and 16PF[®] and PTSD.

Theories of Personality

Personality and personality traits are addressed as what some researchers describe as one of the most difficult and complex theories to study in psychology (Boeree, 2006). Trait theory is a major approach to the study of human personality. Trait theorists are primarily interested in the measurement of traits, which are habitual patterns of behavior, thought and emotion. According to this perspective, traits are relatively stable over time, influence behavior, and differ among individuals (Schatz, 2009).

Cattell and Schuerger (2003) describe a trait as an internal psychological disposition that remains largely unchanged throughout the lifespan and determines differences between individuals. Examples of traits can be extraversion, neuroticism and agreeableness. Alfred Adler stated that personality is a person's cognitive blueprint of their uniqueness and individuality regarding their convictions, goals, and personal beliefs (Cherry, 2014). This dissertation study was designed to determine if there is a common set of convictions, goals, and personal beliefs that lend themselves to guiding a person into the field of Emergency Medical Services. It was also designed to determine if these same common convictions, goals, and personal beliefs work in a positive manner to promote EMS employment longevity.

Placide (2008) summarized Hargrave and Brewer (1986) when stating that “psychological assessments can identify individuals with personality characteristics associated with higher levels of performance” (p. 17). However, the purpose of utilizing psychological assessments is usually to screen out those individuals that do not fit with their chosen profession. Conversely, psychological assessments can be used to screen in

those that are best-suited for a profession. Screen-in assessment tools are used to identify candidates who possess the highest amount of job-related characteristics and traits.

(Barrick & Mount, 2005; Borman & Motowidlo, 1997; Cattell & Schuerger, 2003; De Fruyt & Mervielde, 1999).

Personality Traits of Paramedics

This literature review did not identify any literature on paramedics' personality traits and their relationship to tenure. In contrast to this, there are a large number of studies on the personality traits of other first responders, such as firefighters and law enforcement officers.

Gilliam (1999) as well as Cassel (1997) and Carter (1997) reviewed personality traits that are valued in firefighters. In Gilliam's article, he identifies the three main personality traits he considers important for firefighters to possess. These traits are personality, physical fitness, and psychological fitness. Gilliam is careful to state in his article that he gathered this information from talking to a testing company. Gilliam is also careful not to state what assessment tools are used, due to not wanting to advertise or encourage the use of one particular assessment tool or company. Although Gilliam identifies these three main personality traits, he does not specify anything about the personality type.

Imani (2014) adds an additional statement to Gilliam's (1999) opinion that other traits which are needed by firefighters are the ability to operate in a living environment, the ability to resolve conflict, as well as the ability to follow instructions and to function well during emergencies. Smith also believes other personality traits needed for

firefighters to be successful are commitment; the ability to get along with others; some technical orientation; self-discipline; the ability to accept direction; adaptability; and a sense of humor. Other personality traits that are thought to be important to have in a firefighter are: down to earth; approachable; share what they know; encourage you to interact with them; fit in wherever they go; do not put on airs of self-importance; and preference to remain anonymous (Carter, 1997). Carter continues to state that the fire service contains a higher percentage of personality types who prefer stability, in their lives, in the fire service organization, and hold traditional methods of operating to be very important.

In a study done in Minnesota (Placide, 2008) regarding the best personality traits for law enforcement personnel, the researchers found the traits of honesty and responsibility; good judgment; understanding, and respectful behavior to be the most important. They also found other personality traits that play an important role in what they believe to be the best personality traits in a law enforcement officer. Minnesota law enforcement executives, Placide and the University of Wisconsin-River Falls conducted a study that determined 16 personality traits that are beneficial to the longevity and success of law enforcement officers. These studies give credibility to what Placide (2008) said about the link between character traits in police applicants and the behavior of sworn police officers

In an effort to study the personality characteristics of police applicants, Lorr and Strak (1994) administered the 16 Personality Factor Questionnaire (16PF®) to two different samples of 275 police candidates from various cities across the United States.

The 16PF[®] is a quantifiable assessment for measuring 16 normal personality dimensions (Cattell & Schuerger, 2003). The applicants were both male and female, as well as various and random ethnicities. Both sample groups were tested on the following 16PF[®] personality traits: extraversion, anxiety, toughness, independence, and control. After Lorr and Strak combined these two sample groups, they did not make any predictions regarding what they would find.

According to Lorr and Strak (1994), two very strong and different clusters emerged. Cluster one was found to be associated with high levels of schizophrenia, paranoia, high anxiety and appeared to be no less or no more independent or tough. From these results, Lorr and Strak deduced that the participants of cluster one would demonstrate a lower degree of self-control and extraversion; have a higher rate of anxiety, exhibit more problems with on-the-job performance, and ultimately would most likely not succeed as a law enforcement officer. In cluster two Lorr and Strak found personality traits they felt resembled a good law enforcement officer and what they felt would make for a successful career with less job performance problems than cluster one. These traits were a high degree of control, interpersonal skills, independence, tough mindedness and emotional adjustment.

Although numerous studies regarding the high incidence of occupational stress for paramedics exist, there is a significant lack of research into what the actual personality characteristics and traits are for paramedics (Grevin, 1996). Even fewer studies isolate particular personality traits possessed by paramedics that have been working in the field of EMS for a significant number of years. In this case, a significant number of years

equals five or more years of EMS field employment. Results gathered from using the MMPI-2, regarding the impact emergency medical work has on the mental health of paramedics versus the general population, found significantly lower scores on empathy and significantly higher scores on denial for the paramedics (Grevin). The mental health of emergency medical personnel appears compromised by accident and emergency work (Alexander & Klein, 2001; Blumenfield & Byrne, 2002).

One of the traits that appear to be present in the personalities of paramedics is the level of sensation seeking and its relationship to occupational burnout (Chng, Collins & Eaddy, 2001). In a study done by Regehr et al., (2002), results showed that paramedics with personality traits that were characterized by hostility, suspiciousness, and isolation, had a higher amount of mental health issues and occupational burnout than those paramedics who had healthier social skills, which then promoted less hostility, less suspiciousness and less isolation. Although the above mentioned personality traits are worth noting, they all refer to psychopathy rather than positive traits that may be the causative factor for paramedic longevity.

Rescue Personality

Mitchell (1983) made a claim that a specific personality exists in first responders. Mitchell insisted a person must have this particular kind of personality in order to be successful in the daily operations of first response work. Mitchell referred to this specific personality as a *Rescue Personality*, which consists of high levels of empathy, dedication and performance. Gist and Woodall (1998), as well as Wagner (2005) have strongly refuted Mitchell's claim of the rescue personality concept.

According to Gist and Woodall (1998), as well as Wagner (2005), there is currently little evidence to support the theory of a distinct personality type that is reflective of emergency first responders as a whole, and no clear evidence to substantiate that one exists. Gist and Woodall go as far as to provide the argument that Mitchell's (1983) claims of a rescue personality are not scientific, and that Mitchell lacks any evidence or data to support his claim. "Specifically, Gist and Woodall provide an argument suggesting that Mitchell's evidence of this personality type is unscientific and that when asked to produce evidence, the response was that the data was misplaced" (Wagner, n. p.).

Personality as a Predictor of Work Ethics

For many years, personality had a poor reputation as a predictor of work outcomes and performance (Barrick & Mount, 2005). Guion and Gottier (1965), Mischel (1968), David-Blake and Pfeffer (1989), as well as Barrick and Mount, have all criticized personality, and using it as a predictor of work performance. According to Barrick and Mount, this previous belief of personality having no relevance on work performance began to change with researchers such as Goldberg (1993). Goldberg based his research on a construct-oriented approach that for the most part used the Five-Factor model.

The Five-Factor model is a trait theory of personality, which proposes there are five major and universal factors of personality. These five major and universal factors of personality are Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness (Judge et al., 1999). This research consistently shows that personality predicted job performance across a large range of outcomes that were valued by

organizations, in jobs that ranged from semi-skilled laborers to highly educated executives (Barrick & Mount, 1991).

Those who are critical of the importance of personality, such as Roberts et al., (2007), encourage the belief that personality traits do not matter in the workplace or in employment or personnel choices. However, Barrick and Mount (2005) exert a great deal of energy in their literature to demonstrate that “through application of meta-analysis, combined with the use of meaningful personality constructs, like the Big Five, researchers have been able to summarize results quantitatively across a large number of studies to show that personality traits do matter at work” (p. 361).

Five-Factor Personality Model

The meta-analyses that Barrick and Mount (1991) did on the relationship between job performance and personality traits were seminal research in the field of personnel selection (Barrett et al., 2003). Barrick and Mount (1991) used five occupations for their study: professionals, police, managers, sales, and skilled/semiskilled. Emergency Medical Service (EMS) was not included in this study, even though law enforcement was. Barrick and Mount (1991) and follow-up studies led to the general acceptance of the Five Factor model of personality and the usefulness it provided in predicting performance for many jobs (Barrett et al., 2003). Another result of the acceptance of Barrick and Mount’s meta-analyses has been the use of personality tests as selection devices for numerous personnel selection processes, specifically for the selection of police officers (Barrett et al.). The use of personality tests for law enforcement hiring practices became the standard when

publication of meta-analyses demonstrated that conscientiousness was a predictor of positive performance in a police officer (Barrett et al.; Black, 2000).

There have been no such studies done to determine what personality traits fit the right person with the EMS profession (Powers, 2007). An extensive search resulted in no results for EMS personality traits. As stated earlier, the search parameters for literature regarding EMS personnel included singular and combined versions of the 41 words and terms noted above.

Contemporary psychology considers the "Five Factors of Personality" to be the broad domains of personality that describe human personality. They are also referred to as the "Five Factor Model", the "Global Factors of Personality" and the "16PF[®] Global Factors" (Cattell & Schuerger, 2003; Costa & McCrae, 1992; Russell, Karol & Institute for Personality and Ability Testing, 1994). According to Digman (1990), it took approximately three to four (4) decades of research to discover and define these five broad factors. The five factor model and the 16PF[®] global factors model differ slightly in the personality traits they consider to describe human personality. In the five factor models, the five dimensions are extraversion, agreeableness, conscientiousness, neuroticism, and openness. In the 16PF[®] global factors model, the five dimensions are extraversion, anxiety, tough mindedness, independence, and self-control.

Several sets of researchers, all independent of each other, began by taking all the known personality traits and then factor-analyzing hundreds of measures of the traits. From this research, they found a model of underlying factors of personality (Digmann, 1990). According to Costa and McCrae (1992), as well as Russell et al. (1994), the five

personality factors have been determined to organize personality at the highest level possible, and are therefore the most helpful at organizing and conceptualizing a framework for regular, lower-level personality traits. However, numerous other studies have indicated that since the five factor" traits are so comprehensive and broad, they are less powerful in predicting and explaining actual behavior than are the numerous lower-level traits (Mershon & Gorsuch, 1988; Paunonon & Ashton, 2001). Mershon and Gorsuch, along with Paunonon and Ashton have confirmed that the lower-level traits, since they have more numerous facets, are more effective at predicting actual behavior.

Soldz and Vailant (1999) considered a personality trait to be stable over time, have cross-situational consistency and to define an individual difference between various people. Personality has eight key aspects. These aspects help us to understand the nature of people. According to Friedman and Schustack (2003), the eight perspectives of personality psychology are:

- unconscious aspects
- ego forces
- biological aspects
- conditioning and shaping
- cognitive dimensions
- traits, skills and predispositions
- spiritual dimensions
- person-environment interaction

These eight aspects are what help to define personality and to understand personality.

The rediscovery of personality assessments is due mainly to taxonomic appeal of the five factor model (Hogan & Sinclair, 1996). It is the claim of Friedman and Schustack (2003) that the five factor" dimensions can describe most of the common approaches to personality. Rust (1999) contends that all of the five factor traits are significant to various areas of employment. These five factor traits are conscientiousness, neuroticism, extraversion, openness and agreeableness.

According to Rust (1999) of the big five personality traits, conscientiousness appears to be the best trait as a predictor of job performance. The reason conscientiousness is a good predictor of job performance, is that conscientiousness and integrity are closely related. When a person has a good level of integrity, they will most likely transfer that into their work performance (Rust). Rust takes his assumption one step further and states that the combination of high conscientiousness, low neuroticism and high agreeableness will indicate a potential for a positive work performance in most jobs.

People, who score high on the neuroticism trait, may present as somewhat complicated and difficult for others to understand their moods. Those with this neuroticism trait tend to present as emotionally unpredictable, as well as nervous, tense, depressed, high-strung, vulnerable, worriers, and at times hostile (Friedman & Schustack, 2003). Although they are genuinely anxious and high-strung, they also tend to be sensitive to the feelings of other people. There are positive and negative aspects to the various big five traits. Neuroticism is perhaps the one with the most positive and negative

aspects (Rust, 1999). Although the neurotic person can often feel emotionally tormented, they are often very friendly and caring of other people's feelings. This neurotic person would be a mixture of bad and good characteristics for a paramedic.

Extraversion includes a social aspect because humans live their lives greatly in a social setting (Friedman & Schustack, 2003; Hogan, 1983; Hogan and Sinclair, 1997; Rust, 1999). A person who has the trait of extraversion functions more smoothly in the world because of this social piece. As people go through their daily lives, extroverts form and work on relationships with other people. This is often a simple task for the extravert (Friedman & Schustack, 2003; Hogan, 1983; Hogan and Sinclair, 1997; Rust, 1999). People who have the trait of openness tend to be the most senior people in the work environment. This is due to their ability to be open to the views of others, but they are also less likely to be considered agreeable (Hogan & Sinclair, 1997). Rust (1999) stated there is often a correlation between openness and education. This is due to the person's openness to new experiences and a form of divergent thinking that encourages them to think outside the box (Rust, 1999).

All of the big five personality traits are significant to various areas of employment. Agreeableness usually presents in people who are considered friendly and agreeable, warm, altruistic, modest, trusting, cooperative and straightforward (Friedman & Schustack, 2003). This type of person tends to get along with most people. Agreeableness is a higher trait in people that are not in the top management positions (Rust, 1999). Top management needs to be able to make decisions that may not always be agreeable to those employed under them. Based on this thought, those people who fall

into the trait of agreeableness would be more successful in their work situation if they were to stay in the group of employees that follow the rules, rather than make them.

Over the past decades, according to Roberts et al. (2007), the study of personality traits has been sporadic, and quite likely one of the most difficult and complex theories to study in psychology. The perspectives of personality are the forces that make people distinctively themselves. The study of personality and personality traits assumes the premise that human emotion, cognition, and behavior are dependent upon the characteristics of the person, the situation the person is in, and the interaction between the person and the environment or situation (Steyer et al., 1999). Hogan (Hogan Assessment Systems, 2001) states personality determines if a specific occupation will fit with a specific person.

Lack of Existing Information and Literature

The amount of literature on the cause of attrition in EMS is very narrow and limited. The numbers reported by various authors rate the yearly attrition rate for full-time paramedics from 12.8% (Williams, 2006) to 20% (Powers 2007). A turnover rate of 20% is significant, especially when compared to an average turnover rate of 2.6% - 4.0% for firefighters (Ahi, 2008; Service Canada, 2007). The average professional paramedic career is less than four years (Beaton & Murphy, 1993; Graham, 1981; Mitchell, 1983; Vettor & Kosinski Jr., 2000).

Regarding the high incidence of occupational stress for paramedics, there is a serious lack of research into what the actual personality characteristics and traits are for paramedics (Grevin, 1996). Even fewer studies isolate which particular personality traits

are possessed by paramedics that have been working in the field of EMS for a significant number of years. In this current study, five years of EMS field employment has been the number of years used to denote the 'significant number of years'.

Jonsson, Segesten, and Mattsson (2003) studied the prevalence of posttraumatic stress (PTSD) among Swedish ambulance personnel. Although they concluded that a high prevalence of posttraumatic stress disorder is present in the population they studied, they did not address the aspects of the paramedic personality that promote the high prevalence of posttraumatic stress disorder or more importantly the personality factors that would lessen the vulnerability for the posttraumatic stress. Regehr et al., (2002) conducted other studies of posttraumatic stress in paramedics. Their study of posttraumatic symptoms and disability in paramedics concluded that paramedics who do not take mental health stress leave were less likely to demonstrate physical and emotional symptoms of PTSD; however, the study did not indicate what personality traits promote stronger coping ability in the healthier paramedics.

Marmar, Weiss, Metzler and Delucchi (1996) believe that rescue workers who exhibit the following personality traits are much more likely to succumb to acute dissociative responses to trauma, and subsequently are at a higher risk of developing posttraumatic stress disorder. These traits are: shyness, being inhibited, unclear regarding their identity, reluctant to pursue leadership roles, lack in locus of control beliefs, possess a global cognitive style, and deal with critical incident trauma by 'wishful thinking' and emotional suppression. All of the above studies were testing PTSD predictors or

outcomes of trauma. None of the studies look at the association between personality traits and the paramedics' ability to enjoy their occupation and want to remain in EMS.

I sent an email to Daniel Patterson, PhD, MPH, EMT-B, and Director of Research-Center for Emergency Medicine of Western Pennsylvania, asking the question if there has been any research done on the personality of paramedics, and explaining the topic of this dissertation. In his reply email, dated August 4, 2008, Dr. Patterson stated, "I'm happy to see someone looking into this area. I have been interested in this for some time. I know of NO research in this area. Don't hesitate to involve our institution in any sort of study of EMS personnel..."

I sent a similar email to John A. Johnson, PhD and Professor of Psychology, at Pennsylvania State University. His email reply was, "You have chosen a very interesting and important group to study. I am unaware of existing studies on this population, so it looks like you may be breaking new ground with your research. Good luck with your work". I made a phone call to Mike Hall, EMT-P, and Vice-President of recruitment for the American Ambulance Association (AAA). His response was that he knew of no such studies, but they would be more than happy to assist with this study in any way they could.

Personality Trait Studies of Other Emergency Responders

Preemployment psychological tests have gained acceptance in the field of law enforcement, due to their validity and reliability (Surrette, Ebert, Willis & Smallidge, 2003). Another reason for the increasing popularity in using psychological tests for police selection is the potential they have to reduce some of the human influence on recruitment

and selection of candidates (Surrette et al.). Surrette et al. make the point that psychological tests and assessments are reliable and valid predictors of performance in the field of law enforcement.

In order to compare personality profiles of traffic officers and deputies the California Personality Inventory (CPI) and the Minnesota Multiphasic Personality Inventory (MMPI) were used (Surrette et al., 2003). When the CPI and MMPI profiles were compared, the traffic officers and the deputies shared many of the following characteristics: energetic, dominant, high defended, well adjusted, spontaneous, independent, free from anxiety-related behaviors, and flexible. The assessment scores also indicated that introversion was an undesirable trait and that dominance and leadership were traits that related to effectiveness. The overall results of the personality tests indicated there are personality dimensions that position police officers apart from the general public (Surrette, et al.). The assessment scores did not discuss the personality traits that differed between the traffic officers and the deputies.

Purpose of Research

The purpose of this research was to determine personality traits that are common among 'long term paramedics' and make comparisons of those traits to 'former paramedics' that did not remain in EMS for at least five years. The results may facilitate successful hiring of paramedics who ultimately remain on the job for longer periods of time.

The personality traits of the qualifying paramedics will be determined using the 16PF[®]. From the personality results on the 16PF[®], only the six personality traits

mentioned before will be used. Those traits are warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. These six traits were chosen based upon the job description of a paramedic, as stated by Dave Hopper (www.hopperinstitute.com/emt_intro.html, 2011), as well as firefighter personality descriptions as stated by Gilliam and Smith (1999), Carter (1997) and Cassel (1997).

Trait theory is the basis for supporting the research of using the 16PF[®] for this study. Epstein (2002) greatly supports the sufficiency of trait theory as being a general theory of personality. Although other trait theorists, such as Eysenck (1991), have suggested and implied that additional evidence is necessary in order to justify a claim of having discovered the fundamental dimensions of personality, many other trait psychologists agree with Pervin (1994) in his support of the five factor method of determining personality traits (Costa & McCrae, 1992). Pervin and other trait theorists believe traits contribute a significant degree of orderliness in behavior (Epstein). By using the 16PF[®] assessment, the five global factors will be measured and then each of the global factors is broken down into the primary factors. By using the 16PF[®] global and primary factors, the basic traits are then supported by either strength or weakness in the six primary factor traits that are being measured.

Summary

The amount of existing literature on EMS tenure is quite limited (Grevin, 1996; Wagner, 2005). The average number of years before leaving EMS has been stated by Beaton and Murphy (1993); Graham (1981); Mitchell (1983) and Vettor and Kosinski

(2000) as less than four years; by Ridder (2007) as seven or eight years, and by Nirel, Goldwag, Feigenberg, Abadi, and Halpern (2004) as averaging approximately 10 years.

Roberts et al., (2007) state that at best, only a sporadic amount of study has taken place on personality traits over the past few decades. There is a significant lack of research into what actual personality characteristics demonstrate (Grevin, 1996; Wagner, 2005) as well as what particular traits are possessed by paramedics that have been working continuously and successfully in the field of emergency medicine for several years.

In a review of the link between personality and occupational performance, Hogan, et al. (1996) concluded that a well-constructed measure of normal personality traits is a valid predictor of a wide range of occupational performance. By using the application of meta-analysis, combined with the use of respected personality constructs, researchers have been able to summarize quantitative results, by using large numbers of studies to demonstrate that personality traits do matter at work (Barrick & Mount, 2005).

Gist and Woodall, (1998) along with Wagner, (2005) have an unsettled debate with Mitchell (1983) regarding the concept of a rescue personality in first responders. Mitchell is the only researcher that supports the concept of a rescue personality at this time. Alexander and Klein (2001); Blumenfield and Byrne (2002); and Grevin (1996), have conducted research on the personality traits of paramedics, but the studies have been done in reference to psychopathy rather than positive traits that may be the causative factor for paramedic longevity.

It is important to distinguish healthy personality traits in paramedics, in order to increase tenure, as well as to attract more people to the field of EMS. As Goldberg (1993) stated in Barrick and Mount (2005), "...personality matters because it predicts and explains behavior at work" (p. 359). Law enforcement and other professions have utilized personality testing for numerous years (Barrett et. al, 2003; Black, 2000). The study of personality and personality traits assumes the basis that human emotion, cognition, and behavior are dependent upon the characteristics of the person, the situation the person is in, and the interaction between the person and the situation or environment (Steyer et al., 1999).

In the past few years, personality assessment has resurged, mainly due to the taxonomic appeal of the Five-Factor model (Hogan & Sinclair, 1997). Contemporary psychology thinks of the Five-Factor model of personality to be the broad domains of personality that describe human personality (Costa & McCrae, 1992; Digman, 1990; Karol & Russell, 1994).

Personality traits of a person can predict how that person will work, as well as determine if a specific person is a good fit for a specific occupation (Hogan Assessment Systems, 2001). Trait Theory will be the basis for supporting the research of using the 16PF[®] for this study. Previn (1994), along with Costa and McCrae (1992), as well as other trait theorists believe there is evidence in support of the five factor model when determining personality traits and factors.

In this dissertation, the personality traits of the qualifying subjects in the two sample groups were compared, using the 16PF[®], and a comparison was made regarding

personality traits and longevity, in the field of emergency medical service. The comparison was between the personality traits of the subjects in each group and the length of their employment in EMS. The results demonstrate certain personality traits that do or do not exist in current paramedics, or exist at a much lower or higher level in the former paramedics who left the field of EMS prior to five years.

Chapter 3: Research Method

Introduction

The primary objective of the current study was to provide empirical data on the personality traits possessed by U.S. paramedics who have been working in the EMS field for five or more years. The personality traits of paramedics that had been in the EMS field for five or more years were compared with the personality traits of former paramedics who quit EMS, prior to the five-year mark, to move to a non-first response-related field of employment. Those that left for another type of first response occupation had already been screened out of the study during the first stage of subject recruitment.

The hypothesis tested by this study was that certain personality traits are present in paramedics who remain in the field of emergency medical services for more than five years. Determining what those personality traits are was intended to increase the knowledge for EMS agencies when they are recruiting paramedics. For the purpose of this study, the term *long term paramedic* was used to describe people with five or more years as a paramedic who were still working in a capacity of providing emergency procedures to patients in prehospital settings.

This chapter explains the research design and rationale, as well as the setting and sample used in this study. It describes the socio-demographic survey, a Modified Stressful Life Events Screening Questionnaire (SLESQ), and the 16PF[®] assessment (IPAT, 2010), as well as an explanation for its choice. It also includes a discussion of the instrumentation and materials used in this study, along with recruitment of the research

population and sample, as well as the data collection, data analysis, and measures taken to protect the participants.

Research Design and Approach

This study used a two-group design. The first population group was composed of currently licensed paramedics who had worked five or more years in the field of EMS and were actively employed in that field. The second population group was composed of former paramedics who had quit EMS for a non-first response occupation prior to reaching five years in EMS. I used this five-year mark as the cutoff point because of several studies that reported the average professional paramedic career to be less than four years (Beaton & Murphy, 1993; Graham, 1981; Mitchell, 1984; Vettor & Kosinski, 2000).

My recruitment methods included using social media sites that might be of interest to EMS personnel and sending letters to as many state EMS managers as well as EMS agencies as I could get the addresses for. The letter that was sent explained my research and requested their assistance in locating as many current and former paramedics as possible. An informed consent was the first form the two groups read once they used their specific user name and password to obtain access to The Survey Monkey portal for this specific research project. The participants were encouraged to read the informed consent closely. Proceeding to the first survey inferred participant consent. Instructions to the participants were to fill out all portions of each survey and questionnaire.

I used the socio-demographic survey to group the participants and determine if there were any significant differences in gender, education, and life choices between the two groups. I used a modified version of the *Stressful Life Events Screening Questionnaire (SLESQ)* to determine if any of the participants had experienced previous life stressors that may have contributed to them entering or leaving EMS. The reason for modifying the SLESQ was due to the nature of the emergency medical work that current and former paramedics were expected to have been involved with during their time in EMS. This modification reworded the questions to ask about stressors and experiences *prior* to starting in EMS. Carol Corcoran, PhD, one of the SLESQ authors, granted me permission to modify the assessment (see Appendix H). Due to this modification, there were no norming data available against which to compare the study results with the populations of other studies.

The 16PF[®] assessment (IPAT, 2010) was used to determine if the personality traits of the participants in both groups differed. The group of participants that had remained in EMS for five or more years had made this a career, which suggested that they were satisfied with their choice of employment. I also investigated whether or not participants that left EMS prior to the five-year mark, had a level of career dissatisfaction, with their original choice to go into EMS not panning out as a good career fit.

I chose the 16PF[®] because it allows for viewing a participant's personality at various levels of organization and not just at one level. According to IPAT (2010), the personality traits that a person has, will define their personality. It will also predict what that person will do in a given situation (Cattell, 1950, p. 59). A distinguishing feature of

the 16PF[®] (IPAT, 2010) is that it samples a broad range of normal behavior rather than psychopathy. The 16PF[®] focuses on normal behavior by asking the test taker about their behavior in specific situations, instead of asking them how they would rate themselves on personality traits. The 16PF[®] is a comprehensive measure of normal range personality and is used widely in settings where an in-depth picture of the entire person is desired or required (Cattell & Schuerger, 2003).

I used a nondirectional hypothesis because, due to length of EMS employment, one group appeared to be satisfied in their choice of EMS and the other group appeared to have not been satisfied in their choice of entering EMS, but I had no idea of the direction of differences on the personality traits. Inferential statistics work to draw conclusions beyond the immediate sample and data that are collected. I used inferential statistics to infer from between group (current paramedics and former paramedics) differences in a particular study sample, to a population of nationwide current paramedics and former paramedics.

In this study, the significance level was set at .05 for a set of six hypothesis tests. Use of the Bonferroni procedure, described below, resulted in a .0083 significance level for each individual hypothesis test. I used a series of independent samples *t* tests to determine if differences existed between the personality traits of the two groups in the following personality traits: warmth, reasoning, emotional stability, liveliness, social boldness and openness to change. I chose the *t* test to analyze the data because it tests mean differences between two groups.

I used a single dichotomous independent variable (former paramedics and current paramedics) and six continuous dependent variables (e.g., personality traits) with the *t* test. I had originally chosen to use the *t* test because the results infer a conclusion regarding a larger population from which smaller samples are drawn. Using a *t* test for each of the six traits, I made a comparison between the personality traits of former paramedics and the personality traits of current paramedics. The desire was to see if the assessments would demonstrate certain personality traits that exist in the long term paramedics that either do not exist, or exist at a much lower or much higher level in those people who chose to leave the field of EMS.

Methodology

Population

The populations for this study consisted of licensed paramedics who at the time of the study had been working in EMS for five or more years and former paramedics who had quit working in EMS prior to that five-year mark. In order to qualify for the former paramedic group, participants' change in occupation could not involve moving to another first response or trauma-based profession. Both groups had to have performed their EMS work in the United States, and to have not received any mental health services from me (the researcher) in my private Marriage and Family Therapy Practice, located in Reno, Nevada. Making sure none of the participants had worked in Nevada or received mental health services from me was assured by the fact that the socio-demographic survey required the participant to indicate where they had done their EMS work. The participants

were also reminded of this restriction when I emailed them their password and participant number.

I recruited participants through Internet postings geared towards EMS. I placed these postings on several EMS, fire, law enforcement, and trauma Internet sites, as well as on Facebook (see Appendix A). These postings explained the research project and the plus or minus five-year criteria requirement. The data collection took place over a 14-week period spanning from 2/16/13 to 5/25/2013.

The final group was comprised of seven former paramedics and 24 current paramedics. Twenty (64.5%) were male and 11 (35.5%) were female. The majority of respondents (61.3%) were married and the age categories ranged from 21-25 to 56-60, with the highest majority (22.6%) of participants falling in the age group of 36-40. The majority of respondents (29.0%) had no children, while the highest group with children (25.8%) had three. The highest level of education for the respondents (32.3%) fell equally into two distinct categories. The two educational categories, two years of college and college graduate together encompassed 32.3% of the participants. Ethnicity was highest (96.8%) for Whites, with Native-American or Other Pacific Islanders represented by (3.2%). The final participants were employed in 28 states across the United States.

Setting and Sample

The populations for this study are licensed paramedics who have been currently working in EMS for five or more years and former paramedics that quit working in EMS, prior to that five-year mark. Both groups performed their EMS work in the United States. I excluded participants if they or anyone in their family had received any type of mental

health care or treatment by me in my private Marriage and Family Therapy practice, as well as in my critical incident response capacity. I already eliminated all first responders in Northern Nevada, where I live and work, from the participant pool by stating the exclusion in the Internet postings and recruitment letters. In addition to the Internet postings, I sent email letters requesting participation to the Vice President of Operations of all the EMS agencies listed in the American Ambulance Association's directory (see Appendix' B and C).

The former paramedic group proved to be difficult to obtain via all methods used. In an attempt to obtain participants for the former paramedic group, along with the above mentioned Internet postings, an email was sent to the last known email address of the Emergency Managers of all states in the United States explaining the research project. I asked the Emergency Managers to contact paramedics that did not renew their paramedic license in the past two years. I also asked the Emergency Managers to look at the potential participants' original licensure date to see if they had potential to have worked for the required time of less than five years. For the State Emergency Managers that agreed to contact these former paramedics, I gave a prewritten email explaining the study and requesting their cooperation.

Data Collection and Analysis

Independent samples t tests were used to evaluate if there were significant mean differences between current and former paramedics on the 16PF[®]. The usual values for α are .05 or .01. Due to using the Bonferroni statistical approach, α for this study is .0083. I

determined α by taking the usual .05 α standard and dividing it by 6, which is the number of personality traits used in the study.

A statistical power analysis is either post hoc (retrospective) or a priori (prospective). I used a priori analysis to determine the required sample size. Using a t test for two independent samples, letting the alpha level equal .0083, the statistical power equal .80, and Cohen's d equal .60, the necessary sample size was found to be 90, (45 in group 1 and 45 in group 2). Cohen (1988) specified the following Effect Sizes:

Small = $d < .50$ Medium = $d < .50$ to $.80$ Large = $d > .80$

Cohen's d formula utilizes the t -statistic and the calculation is:

$$d = \frac{M1 - M2}{(SD)}$$

To get an idea of the relative positions of one group to the other group, the effect size is used. According to Rumsey (2003), "For sample averages, you need only look at the sample size itself. In general, the sample size, n , should be above about 30 for the statistical theory to hold". Rumsey also stated,

Small sample sizes result in sample means (and sample proportions) with large standard errors. Larger sample sizes result in sample means (and sample proportions) with small standard errors. In other words, the more data you collect with a single sample, the less variability you should have from sample to sample. (p. 174)

Although initially I thought there would be no problem in obtaining at least 45 participants for the current paramedic group, there was a great concern about getting 45 participants for the former paramedic group. This concern was due to the history of a lack of EMS research. When the final number of willing participants came in at only 57, I had to analyze the data in such a manner as to accommodate for the small number of participants. The final count for the original beginning participants was 57. Of these 57, only eight were former paramedics, with the remaining 49 being current paramedics.

I utilized two websites for this research. I used the Survey Monkey Internet site (www.surveymonkey.com) for the informed consent, the socio-demographic survey and the modified stressful life events screening questionnaire. The IPAT internet site (www.ipat.com) was used for the 16PF[®] assessment. IPAT set up a testing entrance on their main Internet site that participants used to gain access to the 16PF[®] assessment. I supplied each of the participants with a unique user name and user password I purchased from IPAT.

When the participants emailed me, I emailed them back with their individual user name and user password, along with explicit directions to begin first on the Survey Monkey website (www.surveymonkey.com). I instructed them to begin with the informed consent, then move to the socio-demographic survey, and finish up with the modified SLESQ. From there, the participant was to access the IPAT website (www.ipat.com) where they were directed as to what they needed to do in order to check in and take the 16PF[®] assessment. When the 16PF[®] assessment had been completed and scored, the raw data were emailed to me by IPAT (www.IPAT.com). I retrieved the

results for the informed consent, the socio-demographic survey and the modified SLESQ from the Survey Monkey website (www.surveymonkey.com). I informed the participants they did not have to complete any of the testing material in one setting, but could log in and out of the testing sites at any time.

Once I received the raw data, I placed all the information into SPSS. Utilizing the calculations from the SPSS program, I determined if there were personality traits that differed between paramedics that are currently working in EMS and former paramedics that left EMS prior to the predetermined five year cutoff mark. I used a Bonferroni on the following personality traits, which come directly from the 16PF®. These traits are warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. Scale outliers, as well as scale reliabilities and intercorrelations were determined and reported.

Instrumentation and Materials

In order to gather the necessary basic information on the participants of the study, I created the socio-demographic questionnaire. I also used it to insure that none of the participants or their family members had been in contact with me for any type of mental health services. Lastly, I used it to place each participant in the correct group.

The Stressful Life Events Screening Questionnaire (SLESQ) is a trauma history screening measure that uses the DSM-IV, posttraumatic stress criterion A and non-criterion A events to assess experienced trauma in a person's life. According to Goodman, Corcoran, Turner, Yuan & Green (1998):

There are relatively few general measures of exposure to a variety of types of traumatic events, and most of those that exist have not been subjected to vigorous psychometric evaluation. The SLESQ showed good test-retest reliability, with a median kappa of .73, adequate convergent validity (with a lengthier interview) with a median kappa of .64, and good discrimination between Criterion A and non-Criterion A events. (pg. 521)

I chose The Stressful Life Events Screening Questionnaire (SLESQ) to get an overall view of previous traumatic events that may have promoted a desire for a participant to enter EMS, or as occurred with one of the former paramedics, ended up making her leave EMS, as well as not be able to finish the SLESQ. This particular former paramedic participant dropped out of the study, but it is telling that she emailed the researcher and stated, "I am sorry that I can't do this. I thought after enough therapy I was past my issue, but obviously I am not!" I encouraged this participant to return to her therapist and continue her work there. She agreed, and had already made an appointment.

The SLESQ is a 13-item, self-report that measures "for non-treatment seeking samples that assesses lifetime exposure to traumatic events" (Goodman, et al., 1998). There are 11 specific and two general categories of traumatic events measured. These include life-threatening accidents, physical abuse, sexual abuse, assault, and witnessing another person assaulted or killed. The questions are presented in two manners. They are asked in a "yes" or "no" mode, and then if responded to with a "yes", the respondent is asked, their age at the time of the event, frequency of the event, duration of the event,

whether anyone died or was hospitalized, and their level of closeness to that person. The questionnaire is available in both English and Spanish. The SLESQ is a good screening tool with high specificity and sensitivity to previous life traumas (Sali et al., 2013).

The 16PF® (Cattell & Schuerger, 2003) was chosen as the assessment tool for determining if there is a difference between personality traits in current paramedics with five or more years of EMS experience and former paramedics that left EMS prior to the five year cutoff point. “Because of its scientific origin, the test has a long history of empirical research, is embedded in a well-established theory of individual differences, and has proven useful in understanding a wide variety of important behaviors” (Cattell & Schuerger, p. 1).

The 16PF® was chosen due to the fact that it allows for viewing a participant’s personality at various levels of organization and not just at one level. According to IPAT (2010) “Cattell (1950) defined personality as ‘that which permits a prediction of what a person will do in a given situation’ (p. 59)”. The 16PF® (IPAT, 2010) has a distinguishing characteristic of sampling a broad range of normal behavior rather than psychopathy. By asking the test taker about their behavior in specific situations, instead of asking them how they would rate themselves on personality traits, the focus is on normal behavior. The 16PF® (IPAT) is a comprehensive measure of normal range personality. It is used widely in settings where an in-depth and integrated picture of the entire person is required.

The 16PF® Fifth Edition (IPAT, 2010) contains 185 multiple-choice items that are written at a 5th grade reading level. The assessment provides scores on 16 primary

personality factor scales, five global (Big Five) scales, and an Impression Management (IM) index.

The 16PF[®] Fifth Edition (IPAT, 2010) includes several improvements over the previous edition. The following changes enhanced this assessment for this research project:

- Revised Item Content to reflect modern language usage and remove any possible ambiguity.
- Race, culture, and gender bias was reviewed
- Response choices organized for all personality items, with the middle response choice always being a question mark (?).
- Normative data updated to reflect the 2000 U.S. Census, and, in accordance with federal civil rights legislation, combined-gender norms are available as a scoring option.
- New administrative indices designed to assess response bias. An Impression Management (IM) index, which is comprised of items not found on the 16 primary personality factor scales, replaces the “Faking Good” and “Faking Bad” scales of the fourth edition.
- The fifth edition also contains indices of Acquiescence (ACQ) and Infrequency (INF).
- Personality scores are no longer adjusted based on validity indices.
- Psychometric properties have improved. Internal consistency reliabilities average .76, with a range from .68 to .87. Test-retest reliabilities average about .80 for a 2-

week interval and .70 for a 2-month interval. Familiar criterion scores such as Adjustment and Creativity updated, and new ones such as Empathy and Self Esteem have been added. (Russell & Karol, 2002)

The study utilized all questions and answers on the assessment. The updated psychometric properties will strengthen the accuracy of the results. I used the SPSS software to calculate reliability.

After the participants read and agreed with the informed consent, they were administered the socio-demographic survey, a modified version of The Stressful Life Events Screening Questionnaire (SLESQ) and The Sixteen Personality Factor Questionnaire (16PF®) (IPAT, 2010). The survey contains socio-demographic characteristics of the respondents such as gender, age, education level achieved, marital status, and the number of years they have been or were in EMS. The study is only for those employed full time in EMS and not volunteers. I will retain the data in a locked gun safe on my property. I will keep the data for 10 years. I will transfer all data and information that exists on my computer to an external hard drive that will also be stored with the data in the locked gun safe for 10 years. Once I transfer the research data, I will erase all of it from my computer.

Protection of Human Participants

Ethically, it is of the utmost importance to protect all participants. Prior to any of the applicants agreeing to participate in this study, I provided them with a full description of what would be required of them. I also informed the participants that at any time during the research project, they could withdraw if they chose to.

The informed consent included the name and institutional affiliation of the researcher, as well as the researcher's Walden University email address. Included in the informed consent are the name, phone number and email address of the Director of the Research Center at Walden University. I gathered all the results from Survey Monkey, and entered it into the SPSS program. Once I was finished with Survey Monkey, I deleted all results from the site.

After IPAT sent all their gathered information to me, I entered the raw results into SPSS. Once I gathered all the results, and entered the data, IPAT purged the data of all Users Names and Passwords, and then filed the raw data in the IPAT database for further research by IPAT. Walden University's Institutional Review Board approved all procedures used in this research study. The Institutional Review Board approval for this study is #02-12-13-0013695.

Summary

The participants were administered a modified SLESQ, the Sixteen Personality Factor Questionnaire (16PF®) (IPAT, 2010), as well as a short socio-demographic questionnaire. The questionnaire contains socio-demographic characteristics of the respondents such as gender, age, highest level of education, marital status, the state they did or were doing their EMS, and the number of years they have been or were in EMS. The study is only for paramedics currently employed or previously employed full time in EMS and not volunteers. The 16PF® is used when an in-depth and integrated picture of the person as a whole is needed or desired (Cattell & Schuerger, 2003).

The study was to determine if there are personality traits that differentiate the tenure of paramedics. This was assessed with the 16PF[®], which was administered by the IPAT Company, along with determining the results by using the Bonferroni Statistical Method. When I finished collecting the raw data, I analyzed it by using SPSS.

Following this research project, I recommend following the same assessment procedures on emergency dispatchers, emergency medical technician intermediates, as well as aeromedical personnel. If this study proves what I believe it will, it will demonstrate a significant difference in the personality traits needed to work as a paramedic long term versus the personality traits of those former paramedics that chose to leave the field of EMS prior to five years.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to determine if there are specific personality traits that promote positive selection and tenure when employing paramedics. This chapter describes the purpose, research question, and hypotheses that were the basis of this study. Also presented are data collection procedures, ethical procedures, threats to validity, instrumentation and operationalization of the constructs, and the study methodology. The primary research question was, “Are there personality traits that indicate whether someone will remain in the field of Emergency Medical Services for five or more years?”

The primary objective of this study was to provide empirical data on the personality traits possessed by long term paramedics. Long term paramedics are full-time, paid, paramedics who have performed their duties as a nationally registered Emergency Medical Technician – Paramedic, in the United States for five or more years. Volunteer paramedics did not qualify. Emergency Medical Technician – Paramedic (EMT-P), or medics as they are often referred to, have the highest level of EMS certification, education, training, and skills of the providers certified at the first three EMT levels.

Paramedics are educated in advanced assessment and treatment of a range of medical emergencies, airway management, the use of medications and the advanced monitoring devices or interventions in the prehospital setting. To reach the EMT-P level requires 1,440–1,640 hours as well as extensive clinical rotations in a hospital emergency

department, as well as all other hospital departments. An advanced number of internship hours are also required on a working ambulance (Bureau of Labor Statistics, 2010-11).

The intent of this study was to test the following hypotheses about personality traits of *long term paramedics* (5+ years) versus *former, short term paramedics*, who had quit EMS prior to the five-year mark.

- The null hypothesis (H_0) was that there was no statistically significant difference between the population mean scores of personality traits of paramedics currently working in EMS for five or more years and former paramedics that quit EMS prior to five years, as measured using the 16PF[®] scales: warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change.
- The alternative hypothesis (H_1) was that there was a statistically significant difference between the population mean scores of personality traits of paramedics currently working in EMS for five or more years and former paramedics that quit EMS prior to five years, as measured using the 16PF[®] scales warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change.

Data Collection

The final group was comprised of seven former paramedics and 24 current paramedics. Twenty (64.5%) were men and 11 (35.5%) were women. The majority of respondents (61.3%) were married and the age categories ranged from 21-25 to 56-60, with the highest majority (22.6%) of participants falling in the age group of 36-40. The majority of respondents (29.0%) had no children, while the highest group with children (25.8%) had three. The highest level of education for the respondents (32.3%) fell equally

into two distinct categories. The two educational categories, which were two years of college and college graduate were where 32.3% of the participants fell. Ethnicity was highest (96.8%) for Whites with Native-American or other Pacific Islanders represented by (3.2%). Employment for the final participants involved 28 states across the United States (see Table 1).

Table 1

Demographic Data from Current and Former Paramedics

Category	Former (<i>n</i> = 7)		Current (<i>n</i> = 24)		Total (<i>N</i> = 31)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Gender						
Male	3	42.9%	17	70.8%	20	64.5%
Female	4	57.1%	7	29.2%	11	35.5%
Age of Participants						
21-25	1	14.3%	2	8.3%	3	9.7%
26-30	1	14.3%	3	12.5%	4	12.9%
31-35	0	0.0%	4	16.7%	4	12.9%
36-40	1	14.3%	6	25.0%	7	22.6%
41-45	0	0.0%	4	16.7%	4	12.9%
46-50	2	28.6%	3	12.5%	5	16.1%
51-55	1	14.3%	2	8.3%	3	9.7%
56-60	1	14.3%	0	0.0%	1	3.2%
Marital Status						
Cohabiting	0	0.0%	2	8.3%	2	6.5%
Divorced	1	14.3%	2	8.3%	3	9.7%
Living at home with parents	0	0.0%	1	4.2%	1	3.2%
Married	0	0.0%	15	62.5%	19	61.3%
Never Married	4	57.1%	1	4.2%	3	9.7%
Separated not cohabiting	2	28.6%	1	4.2%	1	3.2%
Other	0	0.0%	2	8.3%	2	6.5%
Number of Children						
0	2	28.6%	7	29.2%	9	29.0%
1	2	28.6%	4	16.7%	6	19.3%
2	1	14.2%	4	16.7%	5	16.1%
3	2	28.6%	6	25.0%	8	25.8%
4	0	0.0%	1	4.2%	1	3.2%
5 or more	0	0.0%	2	8.3%	2	6.5%

(Table Continues)

Demographic Data from Current and Former paramedics (cont.)

	Former (<i>n</i> = 7)		Current (<i>n</i> = 24)		Total (<i>N</i> = 31)	
Years of College						
1 year of college	0	0.0%	3	12.5%	3	9.7%
2 years of college	2	28.6%	8	33.3%	10	32.3%
3 years of college	0	0.0%	3	12.5%	3	9.7%
College graduate	2	28.6%	8	33.3%	10	32.3%
Some graduate school	3	42.8%	1	4.2%	4	12.9%
Graduated from graduate school	0	0.0%	0	0.0%	0	0.0%

The population of this dissertation study was similar to the male and female percentages of the overall current and former paramedic population in the United States at the time of this study (see Figure 1). This male/female percentage comparison was further demonstrated when compared with the male and female percentages tested in the following studies: EMS Workforce for 21st Century: A National Assessment (DOT, 2008); the Bureau of Labor Statistics Occupational Employment Survey (DOT, 2008); the Longitudinal EMT Attributes and Demographics Study (DOT, 2008); and the National Registry of Emergency Medical Technicians (DOT, 2008).

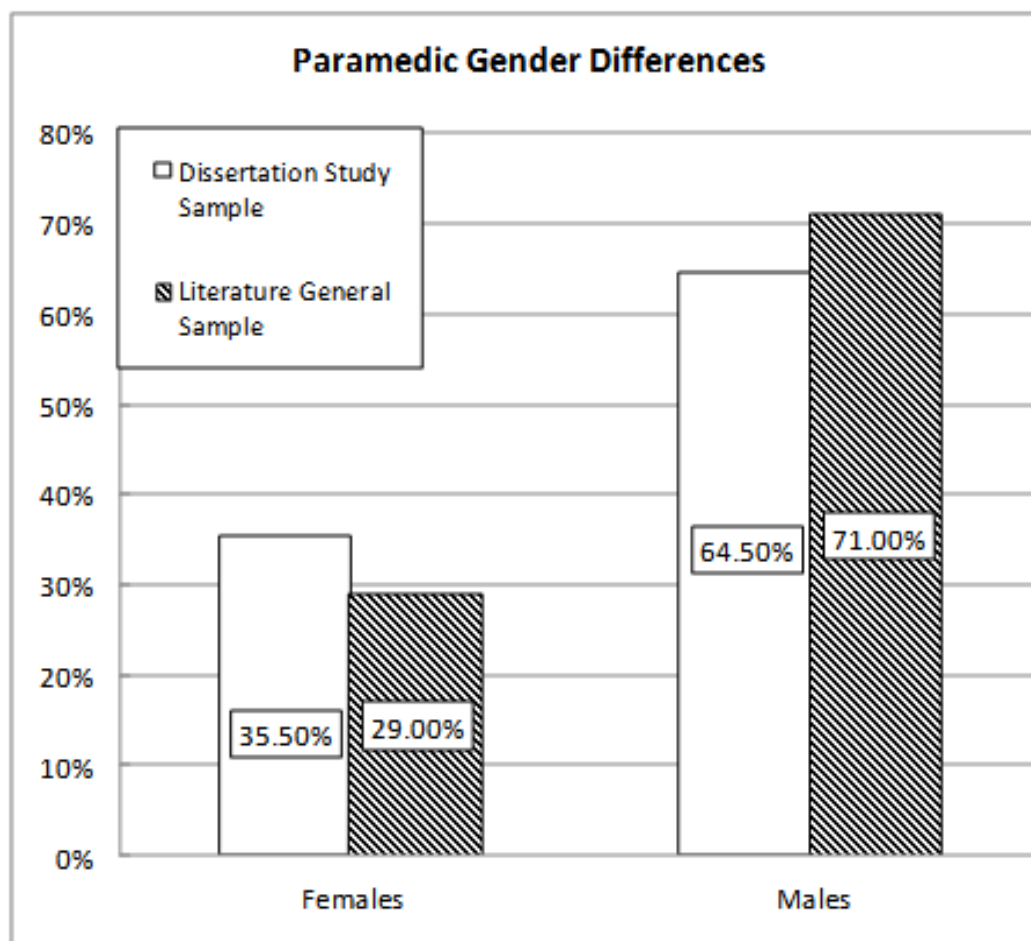


Figure 1. Gender distributions illustrating the dissertation study sample and the general population of paramedics.

Initially, there appeared to be a distinct difference in the level of education between the former paramedic respondents and the current paramedic respondents within this study. The former paramedic's highest level of education was 'some graduate school' (42.8%), while that same category tied for the lowest, along with 'high school graduate' (4.2%), for the current paramedics (see Figure 2). However, when a Mann-Whitney *U*

test was conducted to determine if there were statistically significant differences in education levels between current and former paramedics, the results indicated there was no difference between current paramedics (Mdn = 3, $n = 24$) and former paramedics (Mdn = 4, $n = 7$), $U = 43.50$, $z = -1.89$, $p = .06$, $r = .51$.

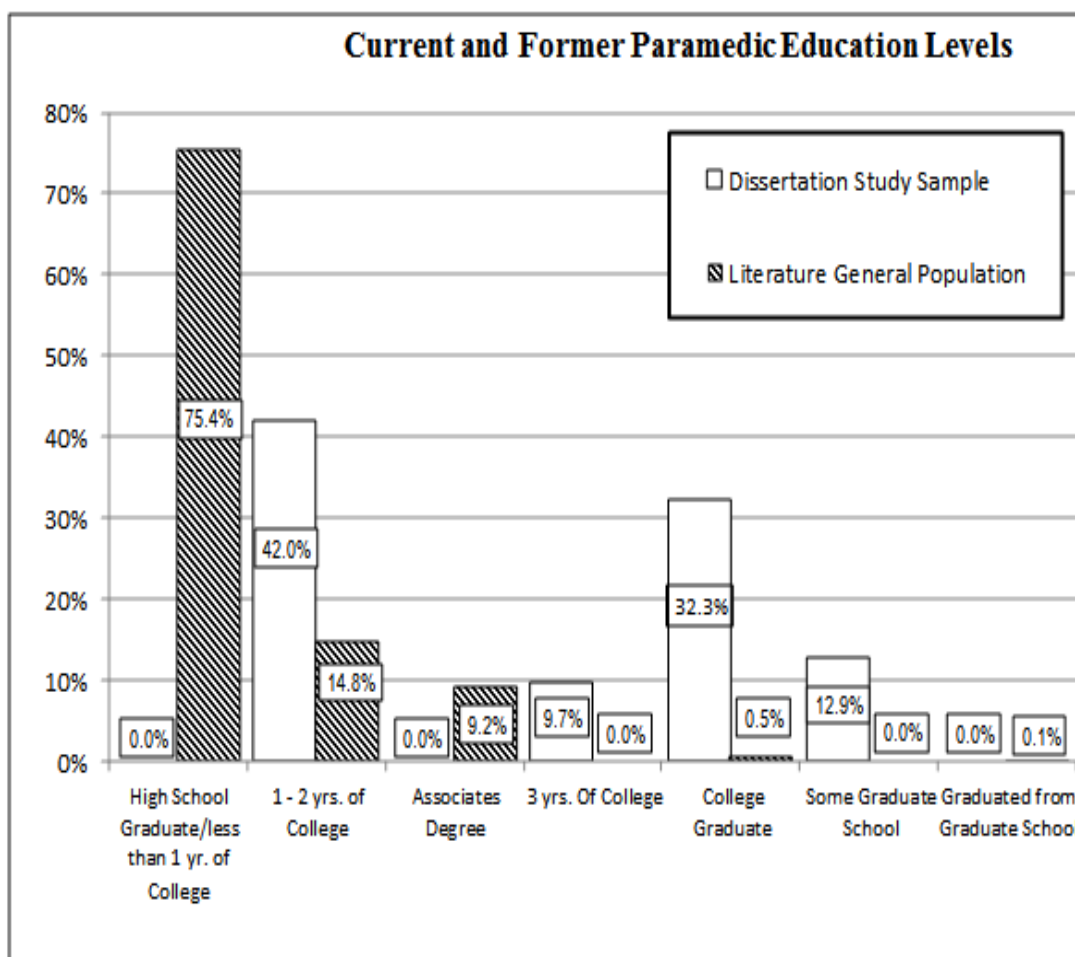


Figure 2. A comparison of the current and former paramedics' education levels.

Preliminary Analysis

I initially planned to use independent samples t tests to evaluate if there were significant mean differences between current and former paramedics on the 16PF[®] measures of warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. Prior to performing these independent samples t tests, I needed to test the assumption of homogeneity of variance, using a Bonferroni adjustment to alpha. It was necessary that data meet these assumptions in order to obtain reliable results from a parametric test like the independent samples t test.

I conducted Chronbach's Alpha reliability tests on the six subscales. Results indicated that warmth produced an alpha coefficient of .782. Reasoning produced an alpha coefficient of .420, while the alpha for emotional stability was .666. Liveliness had an alpha of .647, social boldness .894, and openness to change was .279. To test the assumption of homogeneity of variance, Levene's test was performed on each of the six 16PF[®] variables. The results indicated that the variances between the current and former paramedics were equal for openness to change, reasoning, liveliness, and social boldness. However, they were not equal for warmth and emotional stability, as the p values were less than .05 (see Table 2). Given that sample sizes were low, I took all results with caution, because their reliability was also low.

Table 2

Results of Levene's Test of Homogeneity of Variance (n =31)

Factor	Levene's Statistic	df1	df2	p
Warmth	4.736	1	29	.038
Reasoning	.344	1	29	.562
Emotional Stability	12.612	1	29	.001
Liveliness	1.008	1	29	.324
Social Boldness	.001	1	29	.978
Openness to Change	2.267	1	29	.143

With the sample sizes being so small, the Shapiro-Wilk test was then conducted to evaluate normality and to look closer at the personality traits of openness to change and emotional stability, as the p values were less than .05 on Levene's Test of Homogeneity of Variance (see Table 2). To meet the assumptions of normality, the p values for both the current and former paramedic groups needed to be .05 or greater for each of the six 16PF[®] variables. Results from the Shapiro-Wilk's indicated the distributions were nonnormal for social boldness, but openness to change and emotional stability were normal, along with the distributions for warmth, reasoning, and liveliness (see Table 3).

Table 3

Results of Shapiro-Wilk's Test of Normality (n = 31)

Factor	Status	<i>W</i>	<i>df</i>	<i>p</i>
Warmth	Former	.960	7	.821
	Current	.965	24	.551
Reasoning	Former	.926	7	.514
	Current	.904	24	.026
Emotional Stability	Former	.869	7	.183
	Current	.924	24	.073
Liveliness	Former	.952	7	.744
	Current	.968	24	.615
Social Boldness	Former	.870	7	.185
	Current	.896	24	.018
Openness to Change	Former	.958	7	.797
	Current	.916	24	.048

In addition to the violations in the assumptions of normality and homogeneity of variance, there was another sample condition which intensified the assumption violations, and that was the vast differences in sample sizes between the current paramedic ($n = 24$) and former paramedic ($n = 7$) groups. The sample size for the former paramedic group was seven, while the size of the current paramedic group was 24, over three times the size of the former group. With small sample sizes, below 30, violations in the assumptions of multivariate normality and homogeneity of variance are difficult to detect given the decrease statistical power (Anderson, Babin, Hair & Hair, 2010).

The fact that the preliminary tests were able to detect so many violations implies that the data is in greater violation of the assumptions than is seen. Therefore, I conducted

the nonparametric equivalent to the independent samples t test, the Mann-Whitney U test, for the primary analysis.

Primary Analysis

The Mann-Whitney U test is a nonparametric test that is very useful when the sample sizes are as uneven as they are in this study. The Mann-Whitney U test converts the scores on a continuous variable (ex. warmth) to ranks across the two groups (ex. current and former paramedics). It then evaluates whether the ranks for the two groups differ significantly. This test uses the median scores instead of the mean scores for each group.

According to Kiess (2002), the Man-Whitney U test, "is a nonparametric test for a between-subjects design using two levels of an independent variable with scores representing at least ordinal measurement" (p. 462). The requirements needed when choosing the Mann-Whitney U test were:

- The data were continuous
- The scale of measurement needs to be ordinal or continuous
- Two population's means that come from the same population are compared
- There were no assumptions made related to the distribution of the populations being tested

The results of the Mann-Whitney U test indicated that the current paramedic group did have significantly lower median scores ($Mdn = 11.0, n = 24$) on warmth than the former paramedic group ($Mdn = 16.0, n = 7$), after applying the Bonferroni adjusted p value of .008. The Bonferroni adjustment was used to maintain the study wide error rate at .05 by dividing .05 by the number of post hoc comparisons, six, (Keselman & Keselman, 1988). I calculated the effect size r by the absolute value of the z value divided

by the square root of the total sample size (ex. $r = \frac{|z|}{\sqrt{n}} = \frac{|-2.80|}{\sqrt{31}} = .50$). These results indicated that the group you belonged to (current or former paramedics) had a large effect on your 16PF® warmth scores, based on Cohen's (1988) criteria of .1=small, .3=medium, and .5=large. There was no significant difference in median scores between the two groups on reasoning, emotional stability, liveliness, social boldness, or openness to change (see Table 4).

Table 4

Results of Mann – Whitney U Test (n =31)

Factor and Status	<i>Mdn</i>	Mann-Whitney <i>U</i>	<i>Z</i>	<i>r</i>	<i>p</i>
Warmth		25.00	-2.80	.50	.01
Former	16				
Current	11				
Reasoning		75.50	-.549		.58
Former	12				
Current	11				
Emotional Stability		63.00	-.997		.32
Former	10				
Current	12				
Liveliness		82.50	-.071		.94
Former	14				
Current	14				
Social Boldness		80.00	-.190		.85
Former	6				
Current	9				
Openness to Change		77.50	-.308		.76
Former	17				
Current	14				

To determine if length of paramedic employment could be predicted by warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change, I performed a logistic regression. The logistic regression examined whether scores on these variables can reliably determine the likelihood of a person remaining a paramedic for less than five years or more than five years. The continuous independent variables were warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. The dependent variable was paramedic status where zero was less than five years and one was five years or more.

Before the analysis was conducted, an outlier analysis was performed by calculating the standardized residuals and Cook's distance for each respondent. If the standardized residual value is greater than +3 or less than -3, then the respondent is an outlier (Hair et al, 2010). Additionally, if Cook's distance is greater than 1, then the respondent is highly influential on the model, more than what is deemed acceptable (Hair et al.). Results indicated that no respondent had standardized residual values of greater than +3 or less than -3. In fact, the most extreme values were +1.5 and -1.9. However, there were five respondents that had Cook's Distance values greater than 1, ranging from 1.02 to 2.1.

The results indicated the full model containing all variables was statistically significant $\chi^2(6, N=31) = 18.64, p = .01$, indicating the model was able to distinguish between respondents who worked as paramedics less than five years and five years or more. The model as a whole explained 45.2% (Cox and Snell R square) and 68.8% (Nagelkerke R squared) of the variance in paramedic employment, and correctly

classified 87.1% of the cases in the sample. This 87.1% classification compared favorably to the initial model I compared it to, which did not contain any of the independent variables. The block 0 model assumes that all respondents were current as this was the cell with the highest frequency. The correct classification of the block 0 model was 77.4% as there were only seven respondents in the former group.

As shown in Table 5, only one of the independent variables made a unique statistically significant contribution to the model, and that independent variable was warmth. Warmth recorded an odds ratio of 2.77, indicating that for every additional point in warmth, the odds of working less than five years increase by a factor of 2.77 (see Table 5).

Table 5

*Predicting Tenure of Paramedic Employment Including All Six**Independent Variables*

Factor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	Wald Statistic	<i>p</i>
Warmth	-1.02	0.488	2.77	[1.07-7.19]	4.378	0.036
Reasoning	0.007	0.385	1.007	[.474-2.141]	.005	0.985
Emotional Stability	0.244	0.237	1.277	[.803-2.030]	1.065	0.302
Liveliness	0.328	0.269	1.389	[.820-2.352]	1.491	0.222
Social Boldness	0.187	0.201	1.205	[.813-1.786]	0.866	0.352
Openness to Change	0.092	0.137	1.096	[.838-1.434]	0.449	0.503
Constant	6.600	5.264	735.295		1.572	0.210

Note. CI = Confidence interval for odds ratio (OR)

When the logistic regression was rerun without warmth, the results indicated that the model containing reasoning, emotional stability, liveliness, social boldness, and openness to change was not statistically significant $\chi^2(5, N=31) = 1.75, p = .882$, indicating that the model was not able to distinguish between respondents who worked as paramedics less than five years or greater than five years (see Table 6).

Table 6

*Predicting Tenure of Paramedic Employment minus the Independent**Variable of Warmth*

Factor	<i>B</i>	<i>SE</i>	<i>OR</i>	95% CI	Wald Statistic	<i>p</i>
Reasoning	-.153	.185	.859	[.597-1.234]	.680	.409
Emotional Stability	.074	.099	1.076	[.887-1.306]	.557	.456
Liveliness	.073	.120	1.076	[.851-1.360]	.73	.541
Social Boldness	-.032	.087	.968	[.817-1.147]	.140	.709
Openness to Change	.021	.080	1.022	[.847-1.194]	.072	.789
Constant	1.325	2.246	3.763		.348	.555

Preliminary Analysis of the Modified Stressful Life Events Screening Questionnaire

The analysis of the Modified Stressful Life Events Screening Questionnaire (SLESQ-M) was an exploratory analysis only. There was no population normed with the revised version of the SLESQ and no research question regarding a difference between current paramedics and former paramedics. The overall results of the Modified SLESQ, demonstrated that every 'Stressful Life Event Question' resulted in at least one current paramedic responding "yes" to having experienced that stressor. On the other hand, there were three questions that none of the former paramedics responded to ever having experienced.

I used a Mann-Whitney *U* test to evaluate if there was a significant difference in the number of traumatic events experienced by current and former paramedics. The

Mann-Whitney U test compares two independent samples with a between-subjects design. To use the Mann-Whitney U test, the independent variables must be an ordinal measurement. The U statistic is the number of times a score in one group precedes the rank of a score in the other group.

To evaluate if there was a significant difference in the number of traumatic events between current and former paramedics, a Mann-Whitney U test was conducted. The results of the Mann-Whitney U test indicated that there was no significant difference in traumatic events between current paramedics ($Mdn = 10.0, n = 24$) and former paramedics ($Mdn = 9.0, n = 7$), $U = 105.00, z = -1.33, p = .894, r = .02$ (see Table 7).

Table 7

Results of Mann – Whitney U Test – Traumatic Events ($n = 31$)

Factor	<i>Mdn</i>	Mann-Whitney U	Z	r	p
Traumatic Events		105.00	-1.33	.02	.894
Former	9				
Current	10				

Summary

Using a Bonferroni adjustment to alpha, six Mann-Whitney U tests were performed to test the null hypothesis. The null hypothesis stated there is no difference between the mean scores of personality traits of paramedics currently working in EMS for five or more years and former paramedics that quit EMS prior to five years. The personality traits that were tested were: warmth, reasoning, emotional stability, liveliness, social

boldness, and openness to change. The study showed that out of the six personality traits tested, warmth is the only personality trait that differentiated the long term paramedics from those that left EMS prior to five years. The null hypothesis was rejected by the personality trait of warmth.

The results from a logistic regression indicated that the full model containing all variables was statistically significant $\chi^2(6, N=31) = 18.64, p = .01$, indicating that the model was able to distinguish between respondents who worked as paramedics less than five years and paramedics that worked five years or more. The model as a whole explained 45.2% (Cox and Snell R square) and 68.8% (Nagelkerke R squared) of the variance in paramedic employment, and correctly classified 87.1% of the cases in the sample. As expected, based on the Man-Whitney U results, and shown in Table 4, only one of the independent variables made a unique statistically significant contribution to the model. That independent variable was warmth.

Warmth recorded an odds ratio of 2.77, indicating that for every *additional* point in warmth, the odds of a respondent working less than 5 years as a paramedic increases by a factor of 2.77 (see Table 5). By using a Modified Stressful Life Experience Screening Questionnaire (SLESQ-M), the results showed that current paramedics and former paramedics had not experienced any difference in personal traumatic events prior to entering EMS.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to determine if there are specific personality traits that differentiate long term paramedics, five or more years in EMS, from short term paramedics, who terminated their Emergency Medical Services career prior to their five year employment mark. I utilized six personality traits from the 16PF[®] assessment to test if differences existed between the personality traits of the two groups in the following personality traits: warmth, reasoning, emotional stability, liveliness, social boldness, and openness to change. The results of the logistic regression showed warmth to be the only personality trait of the six tested that made a difference between the two groups regarding their years in EMS. These traits have their roots in Allport's Trait Theory where he referred to the study of traits, as the study of dispositions (Roxenzweig & Fisher, 1997).

I used a logistic regression to investigate the independent variable of warmth, resulting in an odds ratio of .360. This indicated that for every additional point in warmth, respondents were less likely to work five or more years as a paramedic. For each additional point of warmth, the odds of the paramedic remaining in EMS decreased by 2.77

I used a modified version of the Stressful Life Events Screening Questionnaire (SLESQ-M), to examine the effect of pre-EMS personal trauma. I wanted to determine how it may have played a role on the current or former paramedics choice to enter EMS, as well as on their tenure as a paramedic. The results of the SLESQ-M showed no effect

on choosing to enter EMS or on paramedic tenure regardless of the number of personal trauma(s) experienced or not experienced prior to entering EMS.

As Goldberg (1993, as cited in Barrick & Mount, 2005) stated, “personality matters because it predicts and explains behavior at work” (p. 359). In this study, the personality trait of warmth mattered significantly as it was the only personality trait of the six tested that had an impact on the length of tenure for paramedics. However, numerous other studies regarding the high incidence of occupational stress and burnout for paramedics exist (Moran & Britton, 1994; Regehr et al., 2002), suggesting that personality traits related to stress tolerance may play a role in paramedic tenure.

Many studies have been done to research the correlation of the emotional intensity with the stressfulness of a paramedic’s work. This study is one of the few in this area of research, if not the only research to date, that has studied the personality traits of paramedics that promote tenure, rather than studying the relationship between paramedic stress and tenure. Many researchers have indicated a significant lack of research into what actual personality traits and characteristics do appear most frequently among paramedics (Chng & Eaddy, 1999; Corneil et al., 1999; Vettor & Kosinski, 2000; Weiss et al., 1995).

Interpretation of the Findings

According to Steyer et al. (1999), personality researchers assume that human emotion, cognition and behaviors are dependent upon the characteristics of a person, the situation, and the interaction between the person and the situation. Hogan Assessment Systems (2001) asserted that personality determines if a specific person is a good fit for a

specific occupation. This dissertation study showed that warmth is the personality trait that has potential to make a difference in hiring and retaining paramedics.

While some may think that warmth is a useful personality trait for EMS personnel, the somewhat surprising result from this study suggests that high levels of warmth may have negative consequences. The results of this study suggest the more personality trait of warmth a paramedic has, the less likely they are to still be working as a paramedic five years after they became a paramedic. Conversely, those paramedics with less of the personality trait of warmth, are more likely to still be working as a paramedic after their five-year mark in EMS.

With warmth being the personality trait that contributes so greatly in this study, to determining the length of time a paramedic will remain in EMS, it is important to look at what this truly means. This does not mean that any person with a higher warmth score on the 16PF[®] scale should automatically be denied the opportunity to train and work as a paramedic. It also does not mean that those people who score lower on the warmth scale will automatically be a perfect fit for EMS. The warmth score alone should not be a cut and dry determinate when deciding if a person should be allowed to train and work as a paramedic, especially when the results from this study are based on small sample sizes for both sample groups. The results give an important idea as what to look at in further studies, but cannot give the absoluteness of a study that was performed with far more participants.

Existing research defines emotional warmth as a deep, positive feeling or emotion that relates to love, affection and psychological closeness (Abels, 2007). Emotional

warmth is the part of the human system that conceptualizes belonging and caring (Abel & Brown, 1998). This type of love, affection, and psychological closeness is not in a sexual or intimate definition. The definition is in regards to one person responding to the emotional needs of another person. The 16PF® primary scale warmth, shows how a person interacts socially and with others. Those that score high on the warmth scale tend to be considerate of the feelings of others, friendly, emotionally expressive, seek out relationships, prefer jobs that involve interacting and being helpful to others. People that score lower on the warmth scale are more inclined to be distant, detached, aloof, express little emotion, often prefer solitary mechanical, intellectual or artistic pursuits, and are cautious when seeking out personal involvements with others (IPAT, 2009).

Warmth is likely relevant to EMS workers because of the serious conditions in which they find themselves when treating patients. A short job description of what a paramedic does includes:

- responding to 911 calls and assessing the situation
- caring for the sick and injured in a prehospital setting
- administering drugs or performing lifesaving procedures
- transport the patient to a hospital if necessary
- follow the guidelines they were taught in school or the guidelines an emergency physician is giving them over a special phone line
- document the medical care the patient received and report this to the emergency department at the hospital

- clean up their ambulance after each call and stock it for the next call (Bureau of Labor Statistics, 2014 – 2015, p. 1).

This study showed the correlation between the personality trait of warmth, and how long a paramedic remains at their job in the EMS field. This study shows that those paramedics with less warmth stayed longer than five years, while those paramedics with high warmth scores did not make it to the five-year mark, and hence left EMS before their five year mark of being a paramedic. Clinical psychology includes suggestions that may help explain the variance in performance between those paramedics that are high in warmth and those that are low in warmth.

One of the ways that paramedics with *less* warmth cope with the difficult and emotional aspects of the disturbing situations they are called to work in, is to emotionally keep their distance from the people they are helping. This is done by compartmentally putting the difficult thoughts, visuals and sounds to a place in their brain that puts a distance between the paramedic and the scene they are working. Compartmentalization is taking a thought or emotion that is related to a trauma or disturbing situation and tucking it away into a ‘mental compartment’ that is then filed in the person’s mental file cabinet. The ability to compartmentalize allows first responders of all types to perform their job day after day without losing themselves in the pain and suffering of those they are assisting (Baldino, 2009, Doty, 2007, Gertz, 2014).

People use psychological compartmentalization as a coping mechanism that allows them to dissociate from their normal feelings during times of great distress or overwhelming emotions (Perin, 2012). Baldino (2009) described compartmentalization as

a way to move disturbing emotions and feelings into an area of the brain that sections them off from everyday feelings. This sectioning off can be subconscious or conscious. Compartmentalization is a defense mechanism used to remain distant from the disturbing emotions or feelings that are brought about by the call the paramedics are working on. The previously discussed results of Fannin and Dabbs (2003) can also be associated with the results of this study. Fannin and Dabbs (2003), determined that extraversion was the sole personality trait related to *joining* EMS. The results of this study indicated that the personality trait of warmth was the determining factor for tenure of paramedics. Extraversion tends to make a person go out of their way to interact and engage with other people. Those with more warmth are likely to be attracted to EMS with the belief they will be interacting with lots of people while helping them at the same time. Note that Fannin and Dabbs (2003), are discussing *joining* EMS and not *tenure* in EMS. However, their result, along with the results of this study, suggest that the successful, long term paramedic has the personality traits of extroversion in their nonprofessional lives, and yet lower warmth when they are working on a professional scene.

The task of forming and working on relationships is often a simple task for the extravert. Friedman and Schustack (2003), Hogan (1983), Hogan and Sinclair (1997), along with Rust (1999), state that humans live most of their lives in a social setting while working on relationships with other people. The task of forming and working on relationships is often a simple task for the extravert (Hogan; Hogan & Sinclair; Friedman & Schustack; and Rust). This finding may add a piece to the understanding of the numbers of people who join EMS but do not make it to the five year mark. Their

extraversion and warmth draws them to a job of public service. Those same personality traits of extraversion and warmth eventually open them up to too much exposure of human suffering and tragedy, which they are then not able to deal with, and thus leave EMS before their five-year mark.

In a somewhat different vein, Rust (1999) contends conscientiousness, from the 'Big Five' personality traits appears to be the best trait as a predictor of performance on the job. Rust (1999) goes one-step further when stating that the combination of high agreeableness, high conscientiousness and low neuroticism indicate a good potential for a positive work performance in most jobs. Although Rust's (1999) studies may be accurate and appropriate for numerous types of professions, high agreeableness could act as a detriment to paramedic tenure, as indicated in Qualification Training for the 16PF[®] Questionnaire, which states that those people who test high on the warmth scale, "could be over-accommodating" (June, 2010, p. 93). The current study suggests that the high agreeableness measured as warmth, is not associated with long tenure in EMS.

There are numerous studies that have been done on the overall personality traits that make for a successful paramedic. In these studies, the term *successful paramedic* is the term used to describe a paramedic that passed all their licensure exams and is enjoying working as a paramedic. However, these numerous studies do not test for length of time the paramedic has been working, or when they quit. Most of these studies are testing how stress relates to the paramedic. In spite of all the researchers sharing their results and attempting to determine what makes for a long term, successful paramedic, Mitchell (1983) continues to insist that a rescue personality must exist in all successful

first responders. The definition of this rescue personality is a personality that consists of high levels of empathy, dedication and performance (Mitchell, 1983). Gist and Woodall (1998), as well as Wagner (2005) strongly challenge Mitchell's rescue personality theory as well as declare it not scientific and lacking in any evidence. Because Mitchell will not produce the study or results of his study, (Wagner), it is not possible to compare it to the outcome of this current study, other than to say it goes against what the results of this study show regarding warmth.

Mitchell's rescue personality, is inconsistent with the results of this study. According to Mitchell's (1983) definition of his rescue personality, empathy is one of the necessary personality traits a paramedic needs, to have a rescue personality. According to Russell and Karol (2002), the 16PF[®] Manual Authors, "Empathy is the capacity to identify with another individual's situation or feelings" (p. 112). Russell and Karol further state that in the 16PF[®] Questionnaire, "Empathy is predicted by the 16PF[®] factors of warmth (A+), emotional stability (C+), liveliness (F+), social boldness (H+), low vigilance (L-), openness to change (Q1+), and low tension (Q4-)" (p. 113). This indicates that on the 16PF[®] questionnaire, a person who scores on the higher end of warmth, has higher amounts of warmth in their personality traits and scores higher on empathy.

Limitations of the Study

The greatest limitations of this study were the small number of participants, the disparity between the numbers of current and former paramedic participants, and the disproportionate number of females in the less than five years of experience category, Fortunately, when the 16PF[®] was revised, there was a section that was revised to test both

males and females together. The small number of participants in the study, as well as the number disparity of participants between the two groups, increased the chance of sample means with large standard errors. Further limitations were that subjects were required to have done their EMS work in the United States and not allowing any former or current paramedics from the state of Nevada to participate. The exclusion of volunteer paramedics as well as firefighter/paramedic combinations produced yet another limitation. However, when compared to the general population of current and former paramedics, the percentages were comparable (EMS Workforce for the 21st Century: A National Assessment, 2008).

Potential biases may have existed due to use of the Internet as one form of recruitment; use of EMS agencies for recruitment; and finally the topic of study itself. Use of the Internet, limited the participants to those who are comfortable with the Internet and browsed the Internet to sites that had the recruitment request on them. The use of EMS agencies for recruitment had potential to create a bias regarding who participated and who did not. If the EMS agency allowed the EMS employee to participate during paid work hours, this may have increased the number of participants recruited this way. If the employees were told to participate on their time off, this had potential to lower the number of employees that were willing to participate. Finally, the topic of personality traits of former and current paramedics may have encouraged some and discouraged others from participating. Former paramedics may have felt they left EMS for a reason and had no intention of helping with anything that had to do with EMS.

Recommendations

The findings of the study will be available to various schools and agencies that provide EMS training. I would like to see a follow-up study in which various EMS teaching facilities administer the 16PF[®] assessment at the beginning of each new EMT-intermediate and EMT-paramedic class they teach, and then correlate the results with performance and longevity measures. This potential study could provide a large number of participants to test and follow over the years to see if the results of this study are translatable to the paramedic profession as a whole. This follow-up study would afford the opportunity to replicate this dissertation with a much larger number of participants. Recommendations for future research would be for a researcher to access the National Registry of paramedics and to send out the research invitations personally, rather than depend on the various agencies to do so. The most obvious recommendation is to have an equal number of former and current paramedics, as well as a much larger sample size. A larger study could also address gender issues.

The results of my study suggest that EMS agencies may improve paramedic tenure by selecting and hiring paramedics with less warmth. However, I recommend additional research in order to explore if there is a quadratic relationship between warmth and paramedic tenure. According to Bargh and Shalev (2011), "A 'warm' individual is considered to be pro-social, cooperative, generous, and trusting, whereas 'cold' individuals are viewed as self-centered, competitive, and untrustworthy" (p. 1). The definition given by Bargh and Shalev is not what I mean by selecting paramedics with less warmth. By selecting paramedics with better empathic skills and less sympathy

skills, it appears possible that tenure will increase. Paramedics with sympathy skills relate too much with their patient and take in too much vicarious traumatization. Paramedics with greater empathy skills are able to understand the patient's plight without taking it on and internalizing it. Further research on sympathy and empathy will help determine the processes that are relevant to the warmth trait as it applies to paramedics.

Implications for Social Change

With further research, the results of this study have potential to make a significant positive impact on the prehospital health care provided to the citizens of this nation. By further studying warmth and improving the selection and retention of the paramedics in the prehospital emergency health care system, there is a greater chance there will be sufficient numbers of emergency medical technicians and paramedics to serve the public during normal times as well as times of natural and man-made disasters. Improving the tenure of paramedics will also help with the anticipated 23%–33% surge (U.S. Bureau of Labor Statistics, 2008; Powers, 2007) in required paramedics needed to serve the country as the baby boomer generation is coming into their senior years. It also will ensure the Homeland Security Presidential Directive 21, will be satisfied (DHS, 2007). The Homeland Security Presidential Directive 21: Public Health and Medical Preparedness is as follows:

It is the policy of the United States to plan and enable provision for the public health and medical needs of the American people in the case of a catastrophic health event through continual and timely flow of information during such an event and rapid public health and medical response that marshals all available

national capabilities and capacities in a rapid and coordinated manner. (DHS, 2007)

This study promotes positive social change by providing valuable information to Emergency Medical Response Agencies regarding what personality traits are most likely to promote long term employment by those they interview. As Dick (2008) stated, Emergency Medical Service (EMS) leaders across the United States “are blatantly wasting the public’s training dollars, hiring folks who are smart enough to survive paramedic school, but who have no desire to be caregivers” (p.72). According to Powers (2007), paramedics are leaving EMS at record rates, and yet prior to this study, other research of personality traits conducive for tenure in the EMS profession appear blatantly absent.

The results of this study have potential to enhance the recruitment and retention of those that choose to enter the field of emergency medical services. By employing personnel that are a good fit with the EMS profession, the attrition rate should decrease and the level of tenure should increase. Level of care should also increase, due to the increase of experience gained annually by those that continue to enjoy their chosen profession and continue to learn throughout their career. This increased knowledge and satisfaction with their career choice would logically benefit the public that these paramedics serve.

For numerous years, the belief was that personality was a poor and ineffective predictor of work outcomes and work performance (Barrick and Mount, 2005). Barrick and Mount used research, based on a construct-oriented approach to demonstrate that

personality does in fact predict job performance across a wide variety of outcomes that organizations value. Based upon the findings of this current study, I recommend further studies be done regarding the personality trait of warmth as being the trait that improves paramedic tenure. Although the results of this study are promising, far more studies need to take place before making an absolute statement that a lower level of personal warmth is the answer to paramedic retainment.

When the 16PF[®] 5th Edition was created, the standardized mean differences between male and female scores for warmth, sensitivity, and apprehension were determined to have effect sizes greater than $d = 0.50$. Overall, females scored as having more warmth, sensitivity and apprehension than males. Due to these differences, IPAT, the creator of the 16PF[®] 5th Edition, produced gender-specific norms to be utilized when necessary for these three factor scales. Likewise, IPAT also created a combined gender set of norms for use when testing situations that require a combined gender basis of comparison. I used the combined gender norms for this study.

Another area of the new 16PF[®] 5th Edition that was checked carefully was for effect sizes and norms between the various races and nationalities. The personality factor of reasoning was the only personality trait that required further analysis. I did not have reasoning in my study, so will not discuss the outcome of that analysis. Based upon the findings of this study that indicate less warmth is the personality factor that increases paramedic tenure, I would encourage EMS agencies to investigate carefully before hiring paramedics who have a higher 16PF[®] Sten score on the warmth factor.

The United States Department of Labor Employment and Training Administration (1999) produced *Testing and Assessment: An Employer's Guide to Good Practices*. This guide affirms the right to use personality assessments when gathering information about individuals in order to make an employment or career-related decision about the employee or applicant(s). By using an employment test when interviewing an applicant, this study shows there is an increased chance of selecting the applicant that is most likely going to fit with the job and stay with the job. The document synthesizes, "Employment tests can be used to gather accurate information about job-relevant characteristics... This score can be used to predict how well that applicant is likely to perform in a job..." (U.S. Department of Labor, 1999, p. 3).

Conclusion

According to Steyer et al. (1999), the perspectives of personality are what make people distinctively themselves. Steyer et al. also believe the study of personality assumes the premise that human behaviors, emotions, and cognitions are dependent upon the person, the interaction between the person and their environment, and the situation. Personality traits determine if a specific occupation is a good fit for a specific person (Hogan Assessment Systems, 2001). Based on the results of this study, the lower the scores on the 16PF® personality warmth factor, the greater the probability that a paramedic or potential paramedic will remain in EMS longer than five years.

Although the results from this study are promising, much more research and exploration in this area needs to take place. The results from this one study are not

enough to warrant EMS agencies spending their limited funds to test all potential paramedic employees.

It is prudent to remember this study contained a small sample size of only 24 current paramedics and seven former paramedics. With this study demonstrating a connection between warmth and paramedic tenure, it would be a worthwhile research project to also study the connection between personality traits and actual occupational membership. IPAT (2016) has also encouraged other researchers to not only test for a connection between 16PF[®] personality traits, but to also assess the personality characteristics of successful job incumbents.

The link between vocational interest and personality traits, as measured by the 16PF[®] questionnaire, appears to be strong. What remains elusive, however, is the connection between personality traits and actual occupational membership. To establish such a connection, future research studies need to assess the personality characteristics of successful job incumbents. (16PF[®] Fifth Edition Questionnaire Manual, (2009), IPAT, p. 216)

If utilized and supported by future researchers, the results of this study have great potential to enhance the recruitment and retainment of those who choose to enter the field of emergency medical services. By employing personnel that have the personality traits that are a good fit with the EMS profession, the attrition rate will decrease and the level of care will increase due to the increase in gained experience by those paramedics that enjoy their chosen profession.

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Appendix A: Recruitment Posting for Current and Former Paramedics

CURRENT AND FORMER PARAMEDICS NEEDED

FOR DISSERTATION STUDY

I am a PhD student working on my dissertation. My dissertation is working with Paramedics. I have worked extensively with first responders for 18 years. You are welcome to go to my website and read more about my EMS experience at <http://www.bevpaschaltherapy.com>

I am looking for Paramedics, both Currently Licensed and working in EMS and Former Paramedics who are no longer working in EMS, Fire or Trauma. My dissertation is based on determining some of the personality traits of Current and Former Paramedics. All participants must be currently or formerly employed in the United States. Unfortunately, I cannot use any EMT-1's or EMT-2's.

If you or any of your family members have ever received mental health treatment from me, I am not able to include you in the study.

However, please think of any of your current or past peers that do qualify.

What will be required of you is to contact me via email at bpaschal@waldenu.edu and state in the subject line if you are a Current Paramedic or Former Paramedic. I will then send an email that issues you a personal number and password, as well as a link to get started. All participants will be given a number and password to keep everything confidential.

I will ask you to fill out two (2) questionnaires and a multiple-choice assessment. You will complete all of these on your computer. All information is kept confidential and not known by any agencies or employers. The researcher will know the names of the participants only in order to assign passwords and passcodes. The researcher will not know what results go with what participant.

I would like to thank you ahead of time for your willingness to participate and help me with this study. I believe the results will help the EMS field significantly. If you wish to read more about me and find out whom you will be working with, you can go to my website and read my credentials and my experience in EMS.

Respectfully,

Beverly J. Paschal, MA, MFT

Beverly J. Paschal, MA, MFT (775) 827-0404

bpaschal@waldenu.edu

Appendix B: Email to Vice Presidents of EMS Operations

Beverly J. Paschal., M.A.
Licensed Marriage and Family Therapist
Board Certified in Crisis Response
Phone ~ (775) 827-0404 ~ FAX

To: Vice President of Operations

Re: Paramedic Participation in a Dissertation regarding:

***“Personality Traits That Promote Positive Selection
When Interviewing Paramedics for Potential Employment”***

I am a PhD student working on my dissertation. My dissertation is attempting to determine if there are certain personality traits that are present in Paramedics that promote positive employment and tenure. I am looking for Current *and* Former Paramedics who did their EMS work in the United States for *more* than five (5) years or *less* than five (5) years. The largest obstacle I am facing with this project is obtaining Former Paramedics with less than five (5) years of active Paramedic service, to participate in the project. EMT-I's and FF-P will not work for this research.

If you are interested and willing to help with this project, I will be very grateful and more than willing to share the results with you and your organization. What I kindly need from you is: (1) to post the following letter on your employee board; (2) send a companywide email of the following letter; and/or (3) place a copy of the letter

in the mailboxes of *all* company employees. The reason for including all employees (both field and office) is the need for current employees to spread the word and possibly get more participation from Former Paramedics.

With Many Thanks and Respectfully,

Beverly J. Paschal, MA, MFT

Beverly J. Paschal, MA, MFT

Appendix C: Email to State Emergency Managers

Beverly J. Paschal, MA

Licensed Marriage and Family Therapist

To: State Emergency Manager

Re: **Former paramedic** Participation in a Dissertation entitled:

***“Personality Traits That Promote Positive Selection When
Interviewing Paramedics for Potential Employment”***

I am a PhD student working on my dissertation. For the past 18 years, I have specialized in working with First Responders, especially EMS. I work with critical incidents, as well as MCI's.

I am asking your help in locating **Former Paramedics who worked in the United States for less than five (5) years.** I am asking for your help in the following two ways:

- 1) Please think about the Former Paramedics you personally know of that once they started working as a **Paramedic**, decided it wasn't what they wanted, and quit EMS and moved into another field or profession that is not Fire or Trauma related. Most seasoned EMS professionals know a handful of these people. When you think of these people, please email the attached letter to them.
- 2) Please look in your licensure files for Paramedics that did **NOT renew their state license**. If they are Paramedics that obtained their original license

less than five (5) years prior to not renewing their license, then they are potential participants. When you find these potential participants, please email a copy of the attached letter to them, or mail it to them; whichever works best for you.

With Many Thanks and Respectfully,

Beverly J. Paschal, MA, MFT

Beverly J. Paschal, MA, MFT

bpaschal@waldenu.edu <http://www.bevpaschaltherapy.com>

Appendix D: Email to Former Paramedics

**FORMER PARAMEDICS NEEDED
FOR DISSERTATION STUDY**

I am a PhD student who is working on my dissertation. For the past 18 years, I have specialized in working with First Responders, especially EMS. I work with critical incidents, as well as Mass Casualty Incidents.

I am looking for **Former Paramedics who are no longer working in EMS, Fire or Trauma. To be eligible to be included in the study:** You need to have done your EMS work in the United States; moreover, I cannot use any EMT-I's, EMT-2's, or FF/Paramedics. My dissertation is based on determining some of the personality traits of Current and Former Paramedics.

What will be required of you is to contact me at: bpaschal@waldenu.edu and state in the subject line if you are a Current or Former Paramedic. I will then send you an email that issues you a personal number and password, as well as a link to get started. All participants will be given a number and password to keep everything confidential.

You will be asked to fill out 2 very short questionnaires and one multiple choice assessment. All are done on your computer and will take approximately 1.5 hours. I realize this sounds like a lot of time, but you can start and stop and start where you left off at any time.

All information is confidential and not known by any agencies or employers. If for any reason, after you have become a participant you decide to drop out, you may do so without any negative consequences by anyone or any agency. If at any time during this research you feel you need to seek immediate Mental Health Treatment, please phone your local Crises Call Center and they can direct you to that help.

If you or any of your family members have received mental health treatment from me through my private practice, then I am not able to utilize you as a participant. You can however still pass this letter on to your peers.

I would like to thank you ahead of time for your willingness to participate and help me with this study. If you wish to read more about me and find out who you will be working with, you can go to my website and read my credentials.

Respectfully,

Beverly J. Paschal, MA, MFT

Beverly J. Paschal, MA, MFT

bpaschal@waldenu.edu <http://www.bevpaschaltherapy.com>

Appendix E: Email to Research Participants

From: Beverly Paschal bpaschal@waldenu.edu

To: John Doe John_Doe@XXXX.com

Subject: Research Information

Date: January 11, 2013

EMS Research Dissertation Project

Thank you for your willingness to participate in this Research Project. From this point forward, you will use your **Assigned Number** and **Assigned Password** when signing into all surveys and the assessment tool.

Please keep this email, as it has your assigned number and assigned password on it, as well as the links to both surveys and the assessment tool.

You need to start with the surveys first. So...please go FIRST to:

<https://www.surveymonkey.com/s/DissertationEMT-P-Consent-Socio-Survey> then <https://www.surveymonkey.com/s/SLESQ>

and finish up with: <https://www.netassess.ipat.com/>

Assigned Number: _____ Assigned Password: _____

If at any time during participating in this research, you feel you need to drop out, please simply inform the researcher at bpaschal@waldenu.edu. If at any time you feel that you are in need of immediate mental health treatment, please look up your local Crises Call Center for help and/or guidance.

Thank you for your help,

Beverly J. Paschal, MA, MFT

Beverly Paschal, MA, MFT

Researcher

Appendix F: Informed Consent Form

INFORMED CONSENT

Please read the following information before you begin the questionnaire.

CONSENT FORM

You are invited to take part in a research study that is looking at the personality traits of Current Paramedics that have worked in the field of EMS for 5 or more years, as well as Former Paramedics that left EMS prior to 5 years. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Beverly Paschal, who is a doctoral student at Walden University. You may already know the researcher as a Marriage and Family Therapist that provides mental health services both in her private office, as well as to your agency during critical incidents, but this study is separate from that role. If you or any of your family members have ever received mental health treatment from Beverly Paschal before, then you are not able to participate in this study.

Background Information

The purpose of this study is to determine if there is a difference in personality traits between those people that remain as working Paramedics for 5 or more years and those people that quit being a Paramedic before 5 years and move on to another occupation that is not EMS, Fire or Trauma related.

Procedures

If you agree to be in this study:

- You will be asked to use your Internet connection to log into a survey site and fill out 2 short surveys (a total time of about 30 minutes for the combined questionnaires), as well as take a computerized assessment that will take about 45 minutes.
- Your total time to participate will be about 1.5 hours. You can do this all in one session or you can start, stop, and then start again at another time if you prefer. If at any time during your participation you decide to drop out, you may do so with no negative consequences and with no pressure from the researcher, your peers or any agency.

Here are some sample questions:

- State if you are a Current Paramedic or a Former Paramedic?
- Number of continuous years working as a Paramedic?

- Have you ever had a life-threatening illness?

- Were you ever in a life-threatening accident?

- “I’d rather dress:

- a. Neatly and quietly;

- b.?

- c. In an eye-catching, stylish way.

5. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever physically forced you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

No_____ Yes_____ If yes, at what age? _____

If yes, how many times? 1_____, 2-4_____, 5-10_____,

more than 10_____

If repeated, over what period? 6 mo. or less_____, 7 mo. - 2 yrs._____,

more than 2 yrs. but less than 5 yrs._____, 5 yrs. or more_____.

Who did this? (Specify stranger, parent, etc.)

Has anyone else ever done this to you? No_____ Yes_____

Voluntary Nature of the Study

This study is voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one at your agency or in your association will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind during or after the study. You may stop at any time.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as fatigue or becoming upset. Being in this study would not pose risk to your safety or well-being.

There may also be a risk that by taking these surveys and assessments, that you become upset with the memories of what took place previously in your life. If this should happen, please look up the crises call center in your state or seek mental health counseling to deal with these feelings. If a crime was committed against you, and it is revealed in the assessments or surveys, the researcher is a mandated reporter and is legally bound to report this. What is reportable are the following:

* Child Abuse

* Intent to harm Yourself

* Elder Abuse

* Intent to Harm Another

Also please know that if a crime was committed against you, every state in the United States has available to the victim, money for counseling. If this is applicable to you, you can contact the Victims of Crime Office in your State or County for help.

The potential benefit of being in this study is that you are contributing to a scientific examination of personality traits that may help promote positive selection when interviewing Paramedics for potential employment, which is a field that has not been studied or explored yet.

Privacy

Any information you provide will be kept anonymous and confidential. I will not use your personal information for any purposes outside of this research project. I will not include your name or anything else that could identify you in the study reports. I will keep the data secure by not attaching your name to your answers and by keeping the study data only in the computer of the researcher. I will keep the data for a period of at least 7 years, as required by the university.

Contacts and Questions

You may ask any questions you have now. If you have questions later, you may contact the researcher via email at: bpaschal@waldenu.edu

or via phone at (775) 827-0404. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 1-800-925-3368, extension 1210. Walden University's approval number for this study is 02-12-13-0013695 and it expires on February 11, 2014.

Please print or save this consent form for your records.

You must enter both your User Name Code and your Password in order to get to the questionnaires.

Consent Password and Passcode

User

Name

Code:



User

Password

Code:

Thank you for your help with this research project. If you have friends that qualify for either category, please let them know about how to participate.

Cordially,

Beverly J. Paschal, MA, MFT

Appendix G: Sociodemographic Survey

Survey #1 Sociodemographic Survey

Directions:

Please complete the following questions. Some of the questions require yes or no; a selection of true or false; a selection of which answer; or a fill in the blank. After you complete this Survey, you can continue on to Survey #2 by clicking on the "Continue to Survey 2" button on the bottom. Remember to first click "Done" from Survey #1 before you continue to Survey #2. You may stop, exit, and then re-enter to complete at any time, PROVIDING YOU CLICK THE "NEXT" BUTTON OR THE "DONE" BUTTON BEFORE YOU EXIT.

Thank you for your time in helping with this project.

Beverly Paschal

Socio-Demographic Survey**1. What is your gender?**

- Female
- Male

2. Which category below includes your age?

- 18-20
- 21-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51-55
- 56-60
- 61-65
- Over 65

3. Marital Status

- Living at home with parent(s)
- Never married and not Co-habiting
- Married
- Separated and not Co-habiting
- Divorced and not Co-habiting
- Widowed and not Co-habiting
- Co-habiting
- Other (please specify)

4. Number of Children:

- 0
- 1
- 2
- 3
- 4
- 5
- 6 or more

5. What is the highest level of education you have completed?

- GED
- Graduated from high school
- 1 year of college
- 2 years of college
- 3 years of college

- Graduated from college
- Some graduate school
- Completed graduate school

6. PARAMEDIC Status

CURRENT Paramedic
Number
of Years _____

Former paramedic
Number
of Years _____

7. What State(s) you currently work in or formally worked in when a working PARAMEDIC?

- Alabama
- Alaska
- American Samoa
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia (DC)
- Florida
- Georgia
- Guam
- Hawaii
- Idaho

- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Northern Marianas Islands
- Ohio
- Oklahoma
- Oregon
- Pennsylvania

- Puerto Rico
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Virgin Islands
- Washington
- West Virginia
- Wisconsin
- Wyoming

8. How many years have you worked as a Paramedic OR how many years did you work as a Paramedic?

- 1-4 Years
- 5-10 Years
- 11-15 Years
- 16-20 Years
- 21 Years or more

9. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, or some other race?

- White
- Black or African-American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or other Pacific Islander
- From multiple races

Other (please specify)

Appendix H: Permission to Revise SLESQ

5/24/12

to me,
david.kriska

Hi Beverly,

You certainly have permission to use the SLESQ, as that was our intent by including the actual measure as an appendix in the first published article that appeared in *Journal of Traumatic Stress (JTS)* reporting psychometric and preliminary findings. I would assume it should be sufficient to provide the JTS article (that I sent to you earlier as a pdf attachment) to the IRB with this email.

If you need anything further, please let me know (or have IRB, your Chair, etc. contact me). Good luck with your dissertation!

Take care,

Carole Baroody Corcoran, Ph.D.

Truth burns up error. -Sojourner Truth
She who tells the truth is not well liked. -Bambara proverb

Appendix I: Stressful Life Events Screening Questionnaire – Revised

**STRESSFUL LIFE EVENTS SCREENING QUESTIONNAIRE –
REVISED**

The items listed below refer to events that may have taken place at any point in your entire life, including early childhood. If an event or ongoing situation occurred more than once, please record all pertinent information about additional events on the last page of this questionnaire. If questions referring to witnessing death occurred during your employment as a Paramedic, please do not count that.

1. Have you ever had a life-threatening illness? No ___ Yes ___

If yes, at what age? _____

Duration of Illness _____

Describe specific illness _____

2. Were you ever in a life-threatening accident? No ___ Yes ___

If yes, at what age? _____ Describe accident _____

Did anyone die? ____ Who? (Relationship to you) _____

What physical injuries did you receive? _____

Were you hospitalized overnight? No ____ Yes _____

3. Was physical force or a weapon ever used against you in a robbery or mugging? No ____ Yes ____ If yes, at what age? _____

How many perpetrators? _____

Describe physical force (e.g., restrained, shoved) or weapon used against you. _____

Did anyone die? No ____ Yes ____ Who? _____

What injuries did you receive? _____

Was your life in danger? _____

4. Has an immediate family member, romantic partner, or very close friend died because of accident, homicide, or suicide?

No ____ Yes ____ If yes, how old were you? _____

How did this person die? _____

Relationship to person lost? _____

In the year before this person died, how often did you see/have contact with him/her? _____

Have you had a miscarriage? N/A _____ No _____ Yes _____

If yes, at what age? _____

5. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever physically forced you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

No _____ Yes _____ If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10_____

If repeated, over what period? 6 mo. or less _____,

7 mos.-2 yrs. _____, more than 2 yrs. but less than 5 yrs. _____,

5 yrs. or more _____.

Who did this? (Specify stranger, parent, etc.) _____

Has anyone else ever done this to you? No_____ Yes_____

6. Other than experiences mentioned in earlier questions, has anyone ever-touched private parts of your body, made you touch their body, or tried to make you to have sex against your wishes?

No _____ Yes _____

If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10 _____

If repeated, over what period? 6 mo. or less _____, 7 mos.-2 yrs._____, more than 2 yrs. but less than 5 yrs._____, 5 yrs. or more _____.

Who did this? (Specify sibling, date, etc.) _____

What age was this person? _____

Has anyone else ever done this to you? No _____ Yes _____

7. When you were a child, did a parent, caregiver or other person ever slap you repeatedly, beat you, or otherwise attack or harm you? No _____ Yes _____ If yes, at what age _____

If yes, how many times? 1 __, 2-4 __, 5-10 __, more than 10 ____

If repeated, over what period? 6 mo. or less _____, 7 mos.- 2 yrs. __,

More than 2 yrs. but less than 5 yrs. _____ 5 yrs. or more _____.

Describe force used against you (e.g., fist, belt) _____

Were you ever injured? _____ If yes, describe _____

Who did this? (Relationship to you) _____

Has anyone else ever done this to you? No _____ Yes _____

8. As an adult, have you ever been kicked, beaten, slapped around or otherwise physically harmed by a romantic partner, date, family member, stranger, or someone else? No _____ Yes _____

If yes, at what age? _____ If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10 _____.

If repeated, over what period? 6 months or less _____, 7 months - 2 yrs. _____, more than 2 yrs. but less than 5 yrs. _____, 5 yrs. or more _____.

Describe force used against you (e.g., fist, belt) _____

Were you ever injured? _____ If yes, describe _____

Who did this? (Relationship to you) _____

If sibling, what age was he/she _____ Has anyone else ever done this to you? No _____ Yes _____

9. Has a parent, romantic partner, or family member repeatedly ridiculed you, put you down, ignored you, or told you were no good? No _____ Yes _____

If yes, at what age? _____

If yes, how many times? 1 _____, 2-4 _____, 5-10 _____, more than 10 _____

If repeated, over what period? 6 mo. or less _____,
7 mos.- 2 yrs. _____, more than 2 yrs. but less than 5 yrs. _____
5 yrs. or more _____.

Who did this? (Relationship to you) _____

If sibling, what age was he/she _____

Has anyone else ever done this to you? No _____ Yes _____

10. Other than the experiences already covered, has anyone ever
threatened you with a weapon like a knife or gun? No ____ Yes ____

If yes, at what age? _____

If yes, how many times? 1 _____ , 2-4 _____ , 5-10 _____,
more than 10 _____

If repeated, over what period? 6 mo. or less _____ ,
7 mos.- 2 yrs. _____, more than 2 yrs. but less than 5 yrs. _____,
5 yrs. or more _____.

Describe nature of threat _____

Who did this? (Relationship to you) _____

Has anyone else ever done this to you? No _____ Yes _____

11. Have you ever been present when another person was killed?

Seriously injured? Sexually or physically assaulted?

No ____ Yes ____ If yes, at what age? _____

Please describe what you witnessed _____

Was your own life in danger? _____

12. Have you ever been in any other situation where you were seriously injured or your life was in danger (e.g., involved in military combat or living in a war zone)? No_____ Yes_____

If yes, at what age? _____ Please describe. _____

13. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

No_____ Yes_____ If yes, at what age? _____

Please describe. _____

Appendix J: Permission to Use 16PF Assessment



NetAssessSM Access Agreement

Between **INSTITUTE FOR PERSONALITY AND ABILITY TESTING, INC.**, hereinafter referred to as **IPAT**, addressed at P. O. Box 1188, Champaign, IL 61824-1188, and the party hereinafter referred to as **CLIENT**, that party being identified by the information given below.

058083
Beverly J Paschal
3320 Joy Lake Road
Reno, NV 89511

Terms and Conditions of NetAssess Access

1. **Usage Restrictions.** CLIENT agrees not to attempt to or encourage attempts to use the IPAT Internet administration, scoring, and reporting system in any unauthorized, unethical, or illegal manner. CLIENT agrees not to score IPAT assessments and/or generate IPAT-based reports on unauthorized software or platforms.
2. **Indemnity, Hold Harmless, and Warranty by CLIENT.** CLIENT warrants that all application information as provided herein is true and correct. CLIENT agrees to hold IPAT harmless from any claims or suits brought against CLIENT by any third parties. CLIENT shall indemnify IPAT for any claims, demands, judgments, reasonable attorneys' fees, costs and expenses arising from, or alleged to have arisen out of the use of the materials scored by IPAT for CLIENT pursuant to this Agreement.
3. **Confidential Information.** CLIENT agrees that the test score reports obtained from IPAT and delivered by IPAT to CLIENT via electronic mail contain confidential information. CLIENT agrees to use all reasonable measures to protect the confidentiality of said score reports.
4. **Disclaimer of Warranties and Limitation of Liability.** IPAT makes no warranty representations, expressed or implied, of the accuracy, performance, or fitness for any particular purpose of the information or materials provided to CLIENT by IPAT. In no event will IPAT be liable to CLIENT for any special, consequential, or exemplary damages. Further, IPAT will not be liable for failure to perform its obligations if such failure is due to causes beyond IPAT's reasonable control. CLIENT acknowledges that the Internet experiences periods of interrupted service which may affect NetAssess service.
5. **Termination.** This Agreement may be terminated by either party at any time upon provision of thirty (30) days' prior written notice.
6. **General Provisions.**
 - (a) This Agreement shall be construed according to the laws of the State of Illinois of

the United States of America.

- (b) This Agreement may not be assigned by either party without prior written consent of the other, except IPAT may assign its rights and obligations in connection with the sale or merger of the business to which this Agreement pertains.
- (c) Report credits expire 12 months from date of issue.
- (d) Any notices required by this Agreement shall be sent to the parties at the address set forth above and shall be deemed delivered when received.
- (e) CLIENT represents that the person signing this Agreement on CLIENT's behalf has the full authority to execute such contracts and agreements for CLIENT.

CLIENT

IPAT

Beverly J. Paschal
Signature

Signature

Beverly J. Paschal
Name (print or type)

Name (print or type)

June 14, 2012
Date

Date

Now that you are probably tired and finished with the first 2 surveys, you can either take a break, and do the remaining assessment later, or you can highlight and copy the Internet address below, which will take you to the last assessment <https://www.netassess.ipat.com> If you need a rest, you can close this out and enter the next assessment later. The Internet link for the last assessment is on your original email. Thank you for finishing these first two assessments



Thank you for your help! Bev Paschal

Curriculum Vitae

Beverly J. Paschal., M.A.**Licensed Marriage and Family Therapist
Board Certified in Emergency Crisis Response**

- 02-2016 Completed Dissertation:
"16PF[®] Traits as Predictors of Emergency Medical Service
Worker Tenure"
- 2002-Present Candidate for DOCTORATE OF PHILOSOPHY,
CLINICAL PSYCHOLOGY and
INDUSTRIAL – ORGANIZATIONAL
PSYCHOLOGY
Walden University, Minneapolis
Expected Graduation Date: November 2014
- 1991-1994 MASTER OF ARTS, COUNSELING AND
EDUCATIONAL PSYCHOLOGY –
Marriage and Family Therapy
University of Nevada – Reno, Reno, Nevada
Degree: December 1993
- 1979-1981 BACHELOR OF SCIENCE –
BEHAVIORAL SCIENCE
University of La Verne, La Verne, California
Degree: December 1981

1972-1975 ASSOCIATE DEGREE and CERTIFICATE IN
DENTAL HYGIENE
Pasadena City College, Pasadena, California
Degree: June 1975

LICENSES: Marriage and Family Therapist, #0705, State of
Nevada, 1996

QUALIFICATIONS

I am Trained and Certified in 'Interdisciplinary Collaborative Divorce and Mediation'. I am Trained and Certified in the Mitchell Model of Critical Incident Stress Management. I have worked significantly for many years with Acute Traumatic and Posttraumatic Stress in First Responders.

I have extensive education, training and hours of working with Law Enforcement, Fire Fighters, Paramedics (EMS), Aeromedical Personnel, and the Medical Examiner.

I have maintained a Private Marriage and Family Therapy Practice in Reno, Nevada for 20+ years. I have a Dual Ph.D. in Clinical Psychology, as well as Industrial & Organizational Psychology. I graduated with my Ph.D. in February 2016.

AFFILIATIONS

- American Academy of Experts in Traumatic Stress (#012483)
- Certified Forensic Counselor Endorsement (#C19902)
- National Certified Counselor (NCC #37746)
- Board Certified in Emergency Crisis Response
- Association of Traumatic Stress Specialists Member (#3522)
- Diplomat- The American Psychotherapy Association (#1210)
- Certified Cognitive Behavioral Therapist – National Board of
Cognitive Behavioral Therapist (#C19902)
- Certified - Collaborative Divorce Mediation- State of NV
- Certified in Mediation and Conflict Resolution
- National Certification: Critical Incident Stress Management
- Mental Health Crisis Response Provider for:
 - Regional Emergency Medical Services Authority (REMSA),
 - Regional Ambulance Services, Inc. (RASI),
 - Sierra Emergency Medical Services Alliance (SEMSA)
 - Care Flight Aeromedical

- Sierra Nevada Critical Incident Stress Management Network
- Carson City Fire Department, Carson City, Nevada
- Washoe County Sheriff's Office, Reno, Nevada
- Sierra Truckee Meadows Fire Department, Washoe County, Nevada
- California Sheriff's Departments for Tri-Counties, California
- Northern Nevada Federal Bureau of Investigation
- Provide Individual Therapy for Victims of Violent Crimes
- Behavioral Crises Call Network – Provide Critical Incident Mental Health Services to the community for Bank Robberies, Suicides, and other critical incidents for local casinos, banks and businesses.
- Mental Health Provider for First Responders involved in Critical Incidents and Mass Casualty Incidents in Northern Nevada and Northern California
- Bureau of Land Management Stage One Wildfires

EXPERIENCE**2006 – 2008 State of Nevada Department of Child and Family Services**

I completed my 2,000-hour Pre-Doctoral internship with the State of Nevada, Department of Child and Family Services. I spent 25 hours each week at Children's Behavioral Services (Early Childhood) and Adolescent Residential Treatment Center.

During this time, I facilitated and co-facilitated early childhood groups for the following: Posttraumatic Stress, Early Childhood, Social Skills Group, and Early Childhood Development. I also facilitated and co-facilitated adolescent groups for the following: Skill Streaming, Anger Management, Social Skills, and Posttraumatic Stress.

I served as Case Manager, Individual and Family Therapist for adolescent inpatients and their families, as well as early childhood (3-7 yrs.) clients and their families. I performed assessments and evaluations for diagnosis, treatment planning and case presentation for adolescents and early childhood clients. I was responsible for planning and conducting individual, family, and group psychotherapy sessions.

2005-2006 State of Nevada Department of Corrections: Doctoral Practicum Site

I worked 750 hours with the Department of Corrections. I spent two-thirds of my time working at Northern Nevada Correctional Center for Men and one-third of my time working at Silver Springs Correctional Camp for Women. During this time, I facilitated and co-facilitated groups for the following: Posttraumatic Stress Disorder; Adult Sex Offenders; Pedophiles; Substance Abuse; Eating Disorders; Anxiety and Stress; Child Abuse That Resulted in Severe Bodily Harm or Death; and Felony DUI Resulting in Death.

I taught the following 12-week classes: Substance Abuse I & III; Anger Management; Life Skills; and Street Readiness. I Performed: Inmate Intakes; LSI-R assessments; WAIS-I; and MMPI-2 Assessments with the inmate populations.

1996 - Marriage and Family Therapy- Private Practice
Private Psychotherapy Practice specializing in Posttraumatic Stress, Acute Traumatic Stress, Anxiety Disorders, Personality Disorders, and Dissociative Identity Disorder. I also treat non-trauma patients in my private practice. I do critical incident response work with several of the First Response Agencies in Northern Nevada and Northern California, as well as the Sierra Nevada Critical Incident Response Team. I do Independent Critical Incident work with The Behavioral

Health Management Network, as well as The Crisis Care Network. I work with the Bureau of Land Management during Stage One Wildfires that involve a fatality or critical incident. I am the Mental Health Provider for the Regional Emergency Medical Services Authority (*REMSA*), Regional Ambulance Services, Inc. (*RASI*), Sierra Emergency Medical Services Alliance (*SEMSA*), Care Flight- EAP Provider and Crisis Response Mental Health

1994 – 1995 State of Nevada Marriage & Family Therapist Intern

Evaluated; diagnosed; determined treatment plans; and presented case management plans for patients in various inpatient and outpatient counseling environments. I provided individual, family and group therapy for patients in numerous inpatient and outpatient counseling clinics. I provided private practice psychotherapy.

1994 – 1995 Marriage and Family Therapist Intern at West Hills Psychiatric Hospital

I served as Case Manager, Individual Therapist and Family Therapist for inpatients. Evaluated for diagnosis; treatment planning and case presentation for adults; adolescents; and pediatrics. Planned and conducted individual; family; and group psychotherapy sessions. Determined discharge plans and post- incident interventions.

1991 – 1994 Graduate Student- Student Intern: Master's Program**University of Nevada – Reno**

I evaluated; diagnosed; determined treatment plans; and presented case management plans for patients in the outpatient counseling clinic. I also provided individual, family and group therapy for patients in the outpatient-counseling clinic.

1973 – 1994 Licensed Registered Dental Hygienist**PRESENTATIONS**

- Sixth International World Congress- International Critical Incident Stress Foundation
- Suicide-By-Cop: P.O.S.T. - Peace Officer's Standards & Training Academy Critical Incident Stress Management: Washoe County Sheriff's Office
- Stress Management for Law Enforcement Personnel: Washoe County Sheriff's Office
- Critical Incident Stress Management for Emergency Responders:
 - State of Nevada Highway Patrol Academy
 - Washoe County Law Enforcement Academy
 - Washoe County Sheriff's Office
 - Washoe County Fire Fighter's Academy
 - Northern California Loss Prevention for Nine

Counties of Sheriff's Departments

- Critical Incident Stress for Search and Rescue Personnel:
 - L.A.S.T. Conference (National Search and Rescue)
 - Washoe County Sheriff Search and Rescue Academy
 - Douglas County Search and Rescue Unit
 - Nevada Department of Emergency Management
- Suicide in the Physician's Family: Northern Nevada Physician's Association
- Suicide in Today's Youth: Northern Nevada Dental Hygienist's Association

COMMENDATIONS

- Sheriff's Star – April 1999
- Letter of Commendation from Washoe County Sheriff's Office – June 2002
- Letter of Commendation from CAMES Accreditation Committee through REMSA – 2004 & 2008
- Psi Chi Honor Society