2018

Bridging A Training-Practice Gap In Army Combat Medics

Tracey Michelle Lyons
University of South Carolina - Columbia

BRIDGING A TRAINING-PRACTICE GAP IN ARMY COMBAT MEDICS

By

Tracey Michelle Lyons

Bachelor of Science
University of Nebraska Medical Center, 2012

Master of Physician Assistant Studies
University of Nebraska Medical Center, 2013

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2018

Accepted by:

Toby Jenkins-Henry, Major Professor

Brian Burk, Committee Member

Suha Tamim, Committee Member

Linda Silvernail, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

DEDICATION

"Combat medics never stand taller than when they kneel to treat the wounded." I would like to dedicate this work to every combat medic I have had the honor of working alongside as a fellow medic and physician assistant.

ACKNOWLEDGEMENTS

Will complete this later, thanks!

ABSTRACT

United States Army combat medics undergo training that emphasizes tactical medicine, but are postured inside primary care clinics. The tactical skills and knowledge gained from their training is not in alignment with the demands of their functions in the clinic. This action research study investigates the skills and knowledge that medics need to have to function in the primary care setting. Semi-structured interviews were conducted to gain insight on the medics' needs. Born of their responses are themes surrounding their needs which is discussed in this research study.

Keywords: Action research, combat medic, healthcare specialist, primary care, training practice gap

TABLE OF CONTENTS

LIST OF ABBREVIATIONS AND DEFINITIONS

Action research. A participatory and cyclical form of research designed to submerge the researcher in the study to collect, analyze, and interpret data for the purpose of developing a plan of action to solve a problem of practice (Calhoun, 1993; Mertler, 2014)

Advanced Individual Training (AIT). The second phase of army initial entry training that prepares soldiers for their first assignment by preparing them within the scope of their assigned military occupational specialty (Balko, 1998).

Algorithm Directed Troop Medical Care (ADTMC). Triage and treatment protocol utilized by medics in battalion aid stations and troop medical clinics (Tibbetts, Crutchfield, & Duran-Stanton, 2018)

Armed Forces Health Longitudinal Technology Application (AHLTA). A global electronic health system that is utilized by the department of defense ("Capturing outpatient health care with AHLTA," n.d.).

Battalion Aid Station (BAS). Considered to be the first line of care at the point of injury. A physician, physician assistant, or combat medic provides care. Goal is to either return the soldier to duty or stabilize for evacuation for the next echelon of care (*Emergency War Surgery*, 2013).

Casualty Evacuation (CASEVAC). Encompasses both the evacuation of soldiers from the point of injury or wounding to a medical treatment facility (MTF) and the coordination requirements for the use of nonmedical

transportation assets to accomplish the CASEVAC mission (*ATP 4-25.13 Casualty Evacuation*, 2013)

Composite Health Care System (CHCS). Informatics system that is utilized by the department of defense which serves as a foundation for AHLTA use ("TRICARE Composite Health Care System (CHCS) at CRDAMC," n.d.).

Continuing Medical Education (CME). Medical educational activities that sustain or develop knowledge, skills and performance that medical practitioners use to provide medical services to patients.
("CME Content: Definition and examples," n.d.)

Emergency Medical Technician-Basic (EMT-B). A medical professional that responds to emergency calls to provide initial contact care to a patient and provides transportation to a medical facility.
("Job Description -Emergency Medical Technician -Basic Responsibilities," n.d.)

Medical Evacuation (MEDEVAC). This is the system that provides the vital linkage between the stages of care necessary to sustain the patient during transport (*ATP 4-25.13 Casualty Evacuation*, 2013).

Medical Protection System (MEDPROS). The Army's automated data base utilized to track soldier medical readiness and deployability (Stiltner, n.d.)

OPQRST. An acronym related to focused information about a patient with a medical concern that provides information essential to providing quality patient care. (Stoy, Lejeune, & Platt, 2004)

Primary Care. Medical treatment/evaluation provided by physicians, physician assistants and nurse practitioners that are skilled in initial contact and continuing care for patients with diagnosed and/or undiagnosed symptom, sign, or health

concern ("Primary Care," n.d.).

SAMPLE. An acronym related to brief information surrounding a patient's medical concern. (Samuels, Bock, Mauli, & Stoy, 1992)

SOAP Note. A method utilized by health care providers to document patient care which details the subjective information, objective information and assessment and plan of a patient's care (Lew & Ghassemzadeh, 2018).

CHAPTER 1

INTRODUCTION

Throughout military history and true today, combat medics have been positioned in the front lines of a battle to provide first-line care to the sick and wounded (Manring, Hawk, Calhoun, & Andersen, 2009). With the goal of increasing battle wound survivability rates, medics utilize their skills to stabilize sick and wounded patients and evacuate to them to the next echelon of care in our army health support systems (Mabry, 2003).

Combat medics attend advanced individual training (AIT) for 16 weeks in San Antonio, TX (U.S. Department of the Army, 2008) to receive training on several skills relating but not limited to hemorrhage control, airway management and fluid resuscitation (Bond, Hastings, & Kling, 2010). During deployments, a medic may also work inside a battalion aid station to provide routine care to address minor illnesses and injuries alongside physician assistants (Tibbetts et al., 2018).

In a non-deployment setting, combat medics are utilized differently (Schauer, Mabry, Varney, & Howard, 2015). The role of the medic outside combat settings become less defined. Medical Command (MEDCOM) regulation 40-50 allows medics to work outside tactical environments and inside clinics, inpatient wards and emergency rooms (Schauer et al., 2015). The duties and responsibilities of the medic working in varying settings are not clearly defined, and is left to the discretion of the hospital command (Schauer et al., 2015). For

example, a medic's responsibilities in one clinic may include merely taking vital signs and patient history. In another clinic, the medic may be expected to function as more active members of a team by administering medications or other treatments, performing phlebotomy services, collecting specimens, or assisting with invasive procedures.

The Work-Learning Environment

I work as a physician assistant and clinical officer in charge (OIC) for a Soldier Care Clinic (SCC) at Fort Huachuca, AZ. The facility provides medical care to over 4,000 active duty, reserve, and national guard members of the Army, Air Force, Navy, and Marines.

The SCC provides primary care during the hours of 7 am to 4 pm Monday-Wednesday and Friday. On Thursdays, the clinic is open for patient care from 9 am to 4 pm. On Thursdays, the clinic is closed from 7 am to 9 am for clinic administrative responsibilities. Sometimes, the medics may maximize this time to perform required military-wide or military occupational specialty (MOS) requirements.

The facility is staffed with medical service assistants (MSA) registered nurses (RN), licensed practical nurses (LPN), physicians, and physician assistants and five combat medics. All the staff members function as key members of this primary care setting through various medical or administrative functions.

The duties and responsibilities of a medic are very dynamic. Medics are expected to function as full members of the primary care team assisting with patient messages, vaccinations, specimen collection, medication administration, intravenous fluids, electrocardiograms, appointment scheduling, and other functions. Medical Command (MEDCOM) policy establishes what medics can

perform within the consideration of all the clinical environments they may function, but do not define how they should learn these skills outside their scope (U.S. Army Medical Command, 2016). While working inside the assigned scope, I demand that medics function as active learners in this setting to meet the goal of developing medics capable of working in any setting they may be directed.

A typical patient care encounter starts with the patient arriving at the clinic for a scheduled appointment. The patient is greeted by the medical service assistant who checks the patient in for the appointment. The process of checking the patient in alerts the team the patient is present for their appointment. A licensed practical nurse, registered nurse or combat medic will take the patient to a treatment room to obtain information about the patient's complaint and medical history. They access a database called the medical protection system (MEDPROS) to evaluate the patient's medical readiness for deployment. Evaluating a patient's MEDPROS profile ensures that the patient is up to date with required vaccinations and other medical requirements. If the patient requires vaccinations, vision screening, or lab testing, it is performed before the encounter with the provider. The medic annotates the actions in the patient's medical record and the MEDPROS.

After the patient screening is performed, the combat medic will report to the provider about the patient. Medics working on my team are expected to stay with the patient throughout the encounter. The purpose of the patient's presentation serves as a learning experience for the medic. The medic learns about physical exams relating to the patient's complaint, diagnosis, and management of the patient's case. If the patient requires any additional treatment or intervention, the medic will assist with meeting the patient's needs. The

medic may or may not be given reading materials to read throughout the duty day to review with me at the end of the day to assess their learning.

Problem of Practice

Medics receive their training surrounding a strong emphasis on combat-related skills (McIlvaine, 2011) but are postured inside clinics and hospitals that support military members and their beneficiaries.

Combat medics are very flexible members of the army and can be used for a multitude of purposes in clinics and other settings (Downes, 2017; Schauer et al., 2015). It should be noted that the means in which medics function vary by the clinic and the providers they are working with as a team (Downes, 2017; Schauer et al., 2015).

When I started working with the medics, I noticed that they lacked the skills and knowledge needed to work within the primary care setting. When I asked medics to perform specific functions, they mentioned they did not know how to accomplish the task. For example, one medic was unsure of how much medication they should take from a vial to administer to the patient. I had to teach them how to perform the appropriate calculation while the patient waited.

In another scenario, I needed to remove a painful mass from a patient's back. I decided to perform a sterile procedure and instructed the medic to gather the materials that I needed and posture the patient and procedure site for the procedure. When I entered the procedure room, I did not have the supplies and instruments that I requested. When I asked the medic the cause of the deficiencies, he said he did not know how to identify what I asked for and wanted to make sure he had the right instruments. The medic had never put on sterile gloves, so I had to teach during the procedure. The process of starting and

stopping the procedure to help the medic extended the patient's time in clinic significantly.

The difficulties that I experienced in the clinic with the medics prompted that I solicit feedback from other staff members in the clinic. Some stated they felt the medics were doing "fine." Another noted that the medics needed to be closely monitored to accomplish tasks. The identified problem left me with the challenge of seeking solutions to enhance the medics' capabilities while working to complete my requirements as an army healthcare provider and clinic officer in charge (OIC).

The identified Problem of Practice (PoP) for this research study is that the medics did not appear to be well prepared to work in the primary care setting. As an army physician assistant, I have deeply committed myself to the development of the medics with whom I work. Under my supervision, my mission to groom medics capable of functioning in any setting became clear. To gain an understanding of the skills and knowledge medics need in this setting, I wanted feedback from the medics about their experiences working with me in this setting. The analysis of the interview responses produced themes surrounding their needs and highlighted key areas of where I as an educator needed professional development.

Research Question

I have worked with several physician assistants in other clinical settings, many of which voiced similar concerns about the medic's ability to function in primary care. At the time, none of us knew how to address this training practice gap. This research study serves as an example as to how the medics needs may be addressed by initiating an inquiry through action research.

Malcolm Knowles suggests that adult learners should be involved in the planning and evaluation of their learning (Knowles et al., 2005). This action research projects afforded the medics a unique opportunity to express their needs by responding to the interview questions.

Physicians, physician assistants, and other interested parties throughout the army in other primary care settings may be able to identify what is required in their settings but have limited research available to solve the problem. This study will serve as an acceptable demonstration as to how they may be able to implement studies in their settings to address similar difficulties.

Conceptual and Theoretical Framework

According to Malcolm Knowles, andragogy is the art and science of adult learning. Matthew Knowles' principles of andragogy refer to the process of engaging adult learners within the structure of the learning experience (Knowles et al., 2005). Combat medics are adult learners who engage a work-learning setting. Thus, it would not be appropriate to take a pedagogical approach to this problem by teaching them what I felt they need to learn (Abela, 2009). Respecting Knowles' assumptions of adult learners and principles of andragogy (Knowles et al., 2005) reminded me that combat medics can provide information about their needs to work in the primary care setting.

Limitations and Potential Weaknesses of the Study

This action research study was performed to answer questions about a problem of practice in my clinical setting and does not account for all clinicians and their challenges working with medics in primary care environments across the army. However, this action research study provided information about the challenges associated with my teaching environment and provided critical

insights into this problem of study that may be related to other army primary care environments.

Limitations of this study also include obtaining data primarily from the perspective of the combat medic exclusive of information from physicians and other medical professionals that interact with the medics. This action research study obtained the opinions from one perspective of a primary care team and left out practical perspectives from other professionals working with the medics. The resources that I retrieved to triangulate the interview responses were dated the year 2016. Only one participant attended (AIT) during this year. Three participants attended their training in 2012, 2013 and 2014. One participant attended AIT and graduated in 2009. Being unable to determine if there were curricular changes during that period challenged the validity of my analysis regarding determining if there was a foundational knowledge present. The interview responses still identified their needs as medics working in this primary care setting and added value to this study.

The work-teach-supervisory role that I have with the medics in this setting created a unique and dynamic learning environment. I developed a strong working relationship with the medics, but also acknowledge that due to my position and rank, the medics may have been motivated to participate in this study and provide answers in interviews to appease me as a researcher and their supervisor. This study assumed that medics who were interviewed responded openly and honestly. The purpose of the study was to benefit the participants' development; Therefore, I believe there was motivation to provide authentic responses about their learning experiences.

Action Research Methodology

Action research is defined as "any systematic inquiry conducted by researchers, administrators, counselors, or others with a personal stake in the teaching and learning process or environment for the intention of gathering information about how their particular schools operate, how they teach and how their students learn "(Mertler, 2004, p.3). The practice of action research allows teachers to develop a practice that leads to positive student outcomes in his or her teaching environment (Mills, 2003).

Mertler (2014) outlines the primary process of conducting action research in four steps: (1) identifying the area of focus, (2) collecting data, (3) analyzing, and interpreting the data, and (4) developing an action plan (Mills, 2001 as cited in Mertler, 2014). The general process of conducting action research is broken down into four stages: (1) planning, (2) acting, (3) developing and (4) reflecting. This whole process details a list of nine steps.

The planning stage includes four of the nine steps of action research. The researcher identifies and limits the topic of study, gathers information about the identified research problem, reflects on the problem through literature review and devises a research plan (Mertler, 2014).

The acting stage includes steps four and five action research. During the acting stage, the researcher implements the plan and collects data that is analyzed (Mertler, 2014).

During the developing stage, the researcher engages step eight and develops an action plan. This is the step where the revisions, changes, or improvements arise, and the action plan is developed (Mertler, 2014).

During the last step, the reflection phase, the researcher shares the results and reflects on the process. The researcher summarizes the results of the study, creates a strategy for sharing the results while reflecting on their experience (Mertler, 2014).

Capturing the stories and discussion of participants through interviews is considered a recognized qualitative form of collecting action research data (Dana & Yendol-Hoppey, 2014). Interviews were used to collect the data needed to conduct this action research study. According to Mertler (2014), a set of questions can be predetermined with the use of structured questionnaires. This action research study utilized a semi-structured approach allowing participants the opportunity to discuss their needs as medics serving in the primary care team. The questions were constructed to allow medics a means to express their needs for specific knowledge and skill sets they are expected to use as primary care medics in this primary care setting.

The Researcher

I am a United States Army physician assistant with 16 years of service, five of which have been as a physician assistant. The first ten years of service were served as a combat medic. I possess an Associate of Arts, Bachelor of Science, Masters in Physician Assistant Studies, and wrote this dissertation in practice (DiP) to fulfill the requirements of a Doctorate of Education with an emphasis in curriculum and instruction. As a member of the United States Armed Forces, I was fully invested in collecting and interpreting the data obtained from this study to mature as an educator and researcher.

I have been working with the group of medics I interviewed since April 2018. The medics have been working alongside me perform various patient care

functions throughout the clinic duty day. Committed to their personal and professional growth, I spent time devoted to their medical education during and between patient care encounters to discuss patient cases in detail and to bring context to their learning experiences.

Having medics as part of the primary care team established mutual respect and trust that allowed us to talk about the strong aspects and deficiencies of the primary care team openly. I believe that because I demonstrated the commitment to their personal and professional growth, the medics were motivated to assist me in making a difference in their educational experiences in the clinic.

The Participants

The soldier care clinic (SCC) is staffed with five medics with whom I work. The participants are currently serving as active duty members of the United States Army. The personnel that signed up to participate in this study are between the ages of 24 and 38 years old and are among the ranks of specialist (SPC) to staff sergeant (SSG). The length of service and professional experience within the army as a medic ranged between two and nine years. Two of the medics had no prior experience working in primary care settings. Three of the medics had worked in similar primary care settings at previous duty stations. This team comprised of four males and one female.

The Scope of Responsibilities. The medics perform a myriad of duties inside and outside the clinic that cannot be listed in full detail. This scope gives a brief but not all-inclusive view of how I interacted with medics during typical patient encounters:

The medics are responsible for the initial contact and screening which required them to obtain and record information about the patient's concern, medical history, and vital signs. When the medic finished the initial screening process, they would report to my office to back brief me on the patient's situation. The medic would function as a chaperone for the clinical encounter with the patient and take note of the patient's diagnosis and management plan so that he or she would review it with the patient before they left the clinic. I would take pauses during and in between patient encounters to discuss the patient's management with the medic. During this opportunity, the medic may or may not have been provided medical reading material to discuss with me later that day to enhance their learning.

Medics also functioned as assistants with medical procedures that I needed to perform on my patients. The medics would be asked to prepare medications, equipment, instruments, and settings for the designated procedure. During the procedures, medics may be expected to assist in various means depending on the patient's needs. For example, a medic may need to don sterile gloves and assist in controlling the bleeding of a surgical site or cut suture strings.

Ethical Considerations

It was imperative that I perform this study ethically. Bound by the principals of my military, cultural upbringing, I felt that it was essential to protect the participants as much as possible. Army regulations regarding my personal and professional conduct as an army officer kept me within the boundaries of ethical behaviors and procedures (Department of the Army, 2014).

I was first required to complete research ethics and compliance training through the collaborative institutional training initiative (CITI) website before seeking approval to conduct any research. The hospital that I am assigned to had no formal IRB procedures or ethics committee. Therefore, I gained verbal permission from my supervisor to conduct this study. Next, I gained written approval from the University of South Carolina IRB to perform this study.

Summary and Conclusion

Chapter one of this DiP introduced the reader to the identified PoP, purpose statement, research questions, literature related to the PoP, ethical considerations, and the methodological design of the study. Chapter two is a discussion of the literature associated context of the problem of practice and the research methodology. Chapter three discusses the methodological process I implemented in this study. Chapter four discusses the findings and interpretations. The discoveries, reflections, action plan and suggestions for future research studies are discussed in chapter five.

CHAPTER 2

LITERATURE REVIEW

Introduction

The purpose of a good literature review is to establish a researcher's expertise in the field of inquiry (Mertler, 2014). The literature review focuses on supporting the Dissertation in Practice (DiP) through an examination of the research surrounding the topic of combat medics working in primary care settings. This literature review also includes subjects related to continuing medical education (CME) or other training subjects in the medical field, as research on combat medics has very little publication.

I utilized an action research methodology with semi-structured interviews. To support my research method, I evaluated the literature on these methods to gain further understanding of how to implement the study and appreciate the value of these methods in future research endeavors.
An examination of qualitative and quantitative designs to address medical education needs in various arenas provided insights into how to develop a sound methodology for my study. By examining various designs and comparing them to the action research plan, I felt firm that the research design used would be the most effective way to provide detailed input from the interviewees with the limited resources available.

Theoretical frameworks for studies lent support and helped to conceptualize the study. Lastly, I evaluated the literature on the history of military training and education to understand the evolution of its practices and gain the inspiration to discuss the new approach which supports the idea that medics have the mental capacity, thus, should take part in improving the quality of their training.

Qualitative Methodologies and Tools

Qualitative research designs afford the researcher an opportunity to gain knowledge, reach an understanding and answer research questions (Mertler, 2014). Qualitative research methodologies entail the collection of information that is expressed in the form of words or pictures Fraenkel, Wallen, & Hyun (2015). Qualitative research designs often take place within natural settings of the area of study, and methods additionally emphasize the process of a problem of study (Mertler, 2014).

The education of the combat medic in this learning environment is very non-traditional compared to the typical classroom setting. I am charged with the responsibility of training medics but was given no formal advisement verbally or in writing regarding what should be taught, or how to facilitate their learning. There is no formal literature detailing the work-learning dynamic of the medic in primary care. Therefore, I needed to focus on the natural setting of this learning environment and produce ground-breaking information that will provide a framework for any future studies and spark meaningful discussions with other military clinicians responsible for educating medics in their primary care setting.

Interviews. Military service members are frequently exposed to requests to complete mandatory and non-mandatory surveys. Naturally, I formulated the idea to create and implement a survey to get information about the medics'

needs. I reflected on the past 14 years of service at that time and remembered all the survey participation requests I received via email and ignored. I recalled completing online surveys with minimal effort because although I had no interest in participating, it was required. I worried that even if the medics agreed to complete the online survey, they would lack the motivation to elaborate on their responses. To ensure that I had the opportunity to collect and analyze rich data, I decided to research other methods to collect information from the participants.

Capturing the stories and discussions of participants through interviews is considered a recognized qualitative form of collecting action research data (Dana & Yendol-Hoppey, 2014). When done correctly, interviews can yield a robust amount of qualitative data (Leedy & Ormrod, 2016) and is considered an alternative to direct observation (Mertler, 2014). Interviews can be conducted with an individual or group of people (Mertler, 2014).

Interviews are constructed in four ways: In-person, telephone, email, and mobile (Roller & Lavrakas, 2015). Rubin and Rubin (2012 as cited in Roller & Lavrakas, 2015) suggest a method that is initiated by "thematizing" (p. 50) followed by designing, interviewing, transcribing, analyzing, verifying, and reporting.

Semi-structured interviews allow the researcher to ask several basic questions that affords the opportunity for follow up questions that the researcher may or may not use depending on how the interviews unfold (Mertler, 2014). The semi-structured interview is conversational, and the researcher refers to an interview guide to ensure that the relevant questions are covered and modifies

the questions for each interview as warranted by the potential responses or circumstances from the interviewee (Roller & Lavrakas, 2015).

Initial thoughts about conducting an interview were to ask the participants questions and record the answers, moving onto the next question until complete. Performing a structured interview in this study would not have provided much elaboration about their challenges thus limiting the depth of the information that that was collected.

Haphazardly creating an interview script and conducting the interviews without a comprehensive step-by-step approach would have reduced the quality of the interviews. The Roller & Lavrakas (2015) literature kept a focus on the process of constructing, implementing, and analyzing the results of the interviews which helped me produce very robust information that helped answer the research question with as much depth possible.

Action Research Methodology

Action research is a systematic inquiry designed with the purpose of learning about the learning environment and how educators teach (Mills, 2007). Qualitative research methodologies entail the collection of information that is expressed in the form of words or pictures Fraenkel, Wallen, & Hyun (2015). This research study involves action research through qualitative data collection to gain insight into what skills and knowledge medics need to function in primary care environments.

Action research is mainly designed to immerse the teacher in the environment as an active participant and provides means to obtain information about small settings and few participants (Mertler, 2015).

My duties and responsibilities as a healthcare provider, clinic officer in charge (OIC), and facilitator of learning would not allow me to separate myself from the learning environment, thus making a strong appeal to action research. By following a research model that included my participation in the study, I was provided a possible frame of reference to obtain wholesome information about the problem of practice and offered an opportunity for personal and professional growth as a leader and junior educator through the reflection phase of this study (Mertler 2014).

Planning. Mertler (2014) described the first step in any form of action research to be the planning phase. In the planning phase, the researcher must identify and limit their topic, gather information regarding the research question, review information related to their research question, and develop a research plan (Mertler, 2014). During this phase, the topic for research was supported by the challenges that medics were facing when functioning in a primary care environment. A literature review was conducted concerning the topic of medic training. During the literature review, it was identified that training practice gaps do exist in healthcare training in many settings outside the military. Due to the problem of inconsistency in current training not having been identified formally, the literature on the topic of training combat medics is minimal. Although awareness of this gap was identified through working interactions with the group of combat medics, the relevancy of my awareness is not researched or documented and provided motivation to focus on the subject.

Developing a Research Plan. Action research methodologies guide the research process but do not designate the specific tools and concepts to complete the study (Mertler, 2014). Action researchers can employ many formats

when considering how to design their qualitative studies (Miff, 2013). In this action research study, a single population of medics was the cohort solicited for participation. To implement this study, a qualitative research design through one-on-one interviews was developed.

Designing the Interview Protocol. Semi-structured interviews allow the researcher to ask several basic questions that affords the opportunity for follow up questions that the researcher may or may not use depending on how the interviews are going (Mertler, 2014). The semi-structured interview is conversational, and the researcher refers to an interview guide to ensure that the relevant questions are covered and modifies the questions for each interview as warranted by the potential responses or circumstances from the interviewee (Roller & Lavrakas, 2015).

A well-constructed interview guide will lead to rich information that allows the researcher to get answers about the subject of study (Roller & Lavrakas, 2015). In-depth interviewing is "central to qualitative research in that it provides what all qualitative inquiry seeks: that is, a deep understanding of what people are doing and thinking, and why" (p.50). Creswell & Poth (2018) shaped the steps I utilized to construct and implement my interview protocol. Mertler (2014) advised that lines of questioning should be focused on solving the problem. I first determined the research questions that will be answered by the participants. The questions were constructed first to obtain important demographic information questions (See Appendix B). Finally, semi-structured lines of questioning were developed to obtain information about the duties and responsibilities surrounding their functions in the clinic.

A short pilot study is an excellent way to determine the feasibility of a study (Leedy & Ormrod, 2016). Interview questions were refined and validated by piloting the interview protocol with two fellow physician assistants working outside the area of study via email. For the first round of refinement, they provided feedback on the completeness of the interview protocol, recommended removal of redundant and nonrelevant questions, and provided recommendations for additional questions that would help me gain further insight on my topic of study. After recommended revisions were reflected upon, revisions were made before asking the physician assistants to pilot the interview script again. It was determined the interview protocol to be ready for implementation once no recommendations for revisions were received.

Ethical Considerations. The compliance of ethical standards is the responsibility of the researcher (Mertler, 2014). It is not possible to anticipate all ethical challenges that may be encountered, because action research is continually evolving during a study (Coghlan & Shani, 2005) There are, however, fundamental ethical principles that action researchers can recognize as necessary guidelines.

Unique ethical challenges were faced compared to traditional research methods because I wore dual hats as the consultant and the researcher (Morton, 1998). The action researcher is responsible for conducting and interpreting their research (Mertler, 2014). For this reason, the action-researcher may have a strong desire for their results to be favorable to the point where their results may be biased (2014). Researchers need always to be aware of the connection between the relationship the teacher has with their students and conflicts of interest that

may occur with acquiring and maintaining the consent of the participants (Owen, 2006). Students may feel they may be retaliated against should they choose not to participate (2006).

I am a commissioned officer, and all the participants are enlisted. The action researcher is senior in rank and grade to all the combat medics. Due to military customs, courtesies, and regulations, medics are to obey lawful orders from commissioned officers. A sense of duty and loyalty to their leader may have driven their willingness to support the study. I would never order any participant to engage in this interview, but still, there were serious concerns regarding a perception of abuse of power to conduct this study. Medics may feel the need to please their superior by participating in the study, fearing adverse outcomes if they did not participate. The facility in which I worked had no IRB protocol or ethics committee, so I sought guidance from a mentor in research who advised I see approval from the university IRB. The IRB evaluated the study proposal to ensure the study conducted was ethical and gave written approval of the research protocol.

Sample. Researchers should take careful considerations about whom they wish to engage for interviews (Saldaña, 2016). Action research requires me to focus my study inside the learning environment, so it was easy to direct my attention on the medics I worked alongside.

Acting. In the second phase of action research, the researcher collects and analyzes the data (Mertler, 2014). At this point of this phase of the research study, qualitative data was obtained to uncover the skills and knowledge necessary for medics to function in primary care settings. Themes were

formulated through in vivo coding and theme analysis enveloping the knowledge and skills medics needed to have to work in the primary care setting.

Data Collection. The study employed the use of qualitative research design. Qualitative data is information put into words and not statistics (Mertler, 2014). In this action research study, qualitative data was collected from one-on-one interviews utilizing semi-structured questions (Mertler,2014) Semi-structured questions provided additional insights into the training needs of the medics (2014). Data collection took place utilizing a semi-structured interview protocol (See Appendix B). The responses from the interview questions facilitated exploration of the research question: What knowledge and skills base is necessary for combat medics to function in the primary care environment?

Data Analysis. Much literature was read to determine which methods would work as a junior researcher. Various methods were compared to determine which would best reflect the voice of the combat medics. Saldaña (2016) made several recommendations which guided decisions on how to analyze the data.

Researchers commonly default to descriptive coding to analyze interview transcripts (Saldaña, 2016). Descriptive coding was initially considered, but I realized doing so would not offer insightful meaning about the medic's perspectives surrounding their needs.

In vivo coding is very much applicable to action research, and is especially appropriate for researchers new to qualitative coding (Saldaña, 2016). Most importantly, in vivo coding works very well for "studies that prioritize and honor the participant's voice" (p. 106). With in vivo coding, a label is assigned to a selection of information, particularly interviews. For this interview, the phrases

selected during this process described a practice or application that was related to the research question. Coding verbatim responses with In vivo coding allowed me to continuously reflect on the participants' responses during and after the analysis was complete.

Researchers may develop their coding methods or hybrid to suit the needs of a study (Saldaña, 2016). The thematic analysis allows the opportunity to index the codes into themes (Saldaña, 2016), which promotes better organization and improved presentations of the findings without representing the responses of the medics.

The trustworthiness of a qualitative study is often used through triangulation by comparing multiple sources to give credence to the findings (Leedy & Omrod, 2016) and confidence to the researcher. To substantiate the validity of this study, a simplified triangulation matrix (Mills, 2007) was designed detailing the various responses and compared them to the two manuals that medics receive in advanced individual training (See Appendix C). The goal of triangulation was not only to establish credence, but to confirm foundational understanding from the medics' previous experiences in AIT. The statements I triangulated with the textbooks mostly supported the notion there was a foundational understanding from the medic's knowledge that could be built. The statements that were not triangulated highlighted there was no foundational knowledge and required further attention when considering how I could devise an intervention to meet the medics' needs. This rule did not always apply to my study and will be discussed in chapter four. Why I did not devise intervention plans is discussed in chapter five.

Developing. This stage of action research focused primarily on making use of the data analysis, interpreting the results, and formulating a plan of action for the future (Mertler, 2014). In the development phase, I made considerations as to how the data obtained would impact future research designed to bridge the training to practice gaps in combat medics in the primary care environment. Action research is cyclical (Mertler, 2014). I began to formulate an action plan but had to change it due to new mission requirements. The development of my action plan will be discussed in chapter five.

Reflecting. The reflection phase is an appropriate period for personal and professional reflection (Mertler, 2014). Sein, Henfridsson, Rossi, & Lindgren (2011) believe that "The stage recognizes that the research process involves more than simply solving a problem. Conscious reflection on the problem framing, the theories are chosen, and the emerging ensemble is critical to ensuring that contributions to knowledge are identified" (p. 44). In the reflection period, the action researcher can make reflections on the journey that the researcher and the students have taken. By making use of the reflection phase, I was able to appreciate where to move forward in teaching (Mertler, 2014).

The reflection phase is an appropriate period for personal and professional reflection (Mertler, 2014). Sein, Henfridsson, Rossi, & Lindgren (2011) believe that "The stage recognizes that the research process involves more than simply solving a problem. "Conscious reflection on the problem framing, the theories chosen, and the emerging ensemble are critical to ensure that contributions to knowledge are identified" (p. 44). In the reflection period, the action researcher can make reflections on the journey that the researcher and the students have taken.

One way a teacher-researcher can engage in a reflective practice is by writing (Dana & Yendol-Hoppey, 2014). The act of writing allowed for the opportunity to clarify the meaning of my experience and to allow an opportunity to learn more about the students and their learning (2014). This DiP is a is a product of the reflection phase.

Research Designs Supporting the Study

Quantitative Studies. Quantitative research methodologies are designed to collect and analyze numerical data and use a deductive approach to rationale when attempting to gain knowledge inspired from research questions (Mertler, 2014). Working from a "top-down" approach, I thought of an area of study and narrowed it down to a more exact area of concentration (Mertler, 2014, p. 8). Although the premise of this action research study was to obtain qualitative data, I conducted a review of quantitative studies for comparing the value of each design as it corresponded to action research. Quantitative research studies have been evaluated to inspire current and future research studies.

The Hoang et al., (2016) study was comprised of didactic and hands-on learning. A pretest was performed before the training along with a post-training-test immediately thereafter, and five months after completion. The result of the Hoang et al. study was that patients received a disposition faster, and errors in patient care improved from pre to post-test. I acknowledged a decrease in patient care efficiency at the point of sustainment testing and found this study not very useful for the current action research study because there is no use of a pre- and post-test measures, which was the quantitative focus of the Hoang et al. study. In the current research study, the examiner desired to obtain knowledge on the thoughts and perceptions of combat medics on what is required for them to

function efficiently in a primary care setting rather than measurements of the effectiveness of a program. The study did, however, provide useful information to the teacher-researcher's future endeavors that will be used to create and implement a new training component for the medics. It is at that point that the quantitative design review will be useful for determining the effectiveness of the new training model.

Dîrzu, Hagău, Boţ, Fărcaş, & Copotoiu (2016) conducted a quantitative descriptive study determining the effectiveness of other medical personnel providing training on cardiopulmonary resuscitation (CPR) to a group of high school students. The objective of the study was to determine if personnel other than credentialed CPR instructors, could be useful in implementing an already established curriculum. The researchers compiled data supporting the concept of utilizing other medical personnel as alternate trainers for CPR. The study by Dirzu et al. mildly supports the current action research study in that the data obtained is descriptive. The study does reflect the thoughts and perceptions of the students involved in the study regarding their experience during the training. After the teacher-researcher analyzed the data from the proposed study, the examiner decided that it is possible that the Dîrzu et al., (2016) study results could be used to triangulate the proposed study findings or future studies developed from this action research project

Qualitative Studies. I accumulated a literature review of qualitative research designs that served as base knowledge and support of the current study and inspired future research. The reviewed literature provided me with ideas of methods that can be used to evaluate the effectiveness of the training that will be implemented from the data obtained in this study. The literature additionally

supports my beliefs that continuing medical education (CME) is still relevant in skill and knowledge sustainment.

Marinopoulos et al., (2007) evaluated 136 research articles and nine meta-analysis case studies. They were able to determine that the CME is useful in helping medical practitioners acquire and maintain their knowledge, skills, and behaviors in clinical settings. While the current study does not support the action research method of my study, this study proves beneficial in that it justifies my aspirations to ultimately implement sustainment training in limited primary care for army combat medics.

The literature review performed by Rogers, Elstein, & Bordage (2001) on continuing medical education (CME) for surgical techniques caught my attention because it solidified my thoughts in regards to implementing skills and knowledge development and sustainment through CME. Their research study revealed that surgical technicians did not have adequate opportunities for skills sustainment, therefore, were unable to stay abreast of rapid changes in surgical technology. The (Rogers et al., 2001) literature review illustrated the importance of CME, namely that it was critical to the continued development skills and knowledge, and the sustainment of foundational education. This review on the importance of CME translated to my desires to keep medics adaptable and ready to function in any environment through continued training.

Lasater (2007) in her qualitative study, sought to discover the experiences and perspectives of students who were involved in a high-fidelity simulations nursing training program. There were two sets of 12 nurses. Each set took a turn using the high-fidelity simulators while the other group of 12 nurses observed and took notes. The roles were then reversed; the group who had been observers

became the group using the simulators. After both groups had completed the exercises, they were pulled into focus groups for discussion.

During the 90-minute focus group session, the researcher gathered retrospective feelings and opinions on their sentiments and experiences with high-fidelity training. Case studies often use focus groups to gather additional supportive data to enhance the findings. I was inspired by the research study in that it demonstrated how the students were able to have discussions with the researcher to gain perceptions of the effectiveness of the training directly from those who had the experience of the high-fidelity training. I will consider it for a future case study at my new duty station to gain the thoughts and perceptions about what the medics at that location feel they need to function in their primary care setting.

Goodyear-Smith, Whitehorn, & McCormick (2009) utilized interviews of a population of general medical practitioners to discover their experiences and preferences regarding continuing medical education (CME). Twenty-four health care practitioners were interviewed by telephone and were paid for their time during the 30-minute interview. The tape-recorded interviews were semi-structured and open-ended with a topic guide. The topics during the interview included discussion of CME needs, format, and content preferences. The data were analyzed using an inductive approach; categories within the interviews were broken down into important themes until a consensus regarding attitudes about CME were reached. A careful review of the Goodyear-Smith et al., (2009) study was very influential in deciding on methodological practices used in the current study.

The process of coding the participants was defined in detail and has shed light on the importance of using a coding and thematic analysis process that can add richness to the data interpretation. Tape recordings of the interviews and the conversion of the audio to word document were very interesting. The Goodyear et al., (2009) study provided additional inspiration on how to conduct this study since all the interviews were performed telephonically and through video conferences. The questions and techniques used by Goodyear-Smith et al. provided insight to the action-researcher as to how to phrase and organize questioning for the interview to pull complete information. The Goodyear-Smith et al. (2004) study provided insight into how structured or unstructured the questions should be. It became apparent that a semi-structured approach would be more efficient because specific data can be obtained from direct questions, and more insightful data can be obtained by adding a series of open-ended questions.

Abbott & De Lorenzo (2004) compared the effectiveness of a self-directed model to traditionally based teaching methods in combat medics. The researchers were able to accomplish this research study by taking students and instructors currently enrolled and instructing in the United States Army combat medic school and applying the 10-week experimental program that emphasized the adult-learning model. The instructors who were subjects in the study were given instructions as to how to implement the training in this study cohort. The cohort was then given a survey to complete at the end of the survey to determine feelings of their confidence in performing the skills taught in the course. The researchers were able to identify that the adult-learning model provided a marginal improvement in evaluation scores in comparison to the traditional

teaching method. The unique learning environment of a primary care setting can hardly be contrasted to a classroom setting. However, the use of the adult learning model in the training program did demonstrate some improvement in the medics' evaluation scores. While the difference in the scores was marginal, it leads me to question as to whether the adult learning concepts applied to the environment in which the participants function would provide additive benefits to their learning experiences.

I accumulated the literature review to serve as a base knowledge to support my study and future studies. The reviewed literature supported the chosen method to collect qualitative information about this problem with semi-structured interviews and supported my identified need to provide continued medical training to medics that will allow them to be relevant and prepared to work in clinical environments.

Theoretical Framework

Studies supported by conceptual frameworks and theoretical perspectives are known to be more rigorous than studies that are not. This dissertation in practice is inspired by Malcolm Knowles' (2005) theory of adult learners and principles of andragogy.

Malcolm Knowles (2005) identified key differences between andragogy and what is commonly known as pedagogy. Pedagogy is the concept of teaching children (Abela, 2009), and he believed there were key differences in teaching children versus adults by the way they learn. By reflecting on those key differences, he formulated five assumptions about adult learners that educators should make (2005):

(1) Self Concept: Adults have reached a mature developmental stage and are secure in their identities. As a result, they can take part in directing their learning (2005). The medics are aware of their responsibilities as soldiers and combat medics. Their experiences as combat medics will allow them to provide key feedback surrounding their needs working in this clinical setting.

(2) Past Learning Experiences: Adults have life experiences they can contextualize their learning from (2005). The medics have very different experiential backgrounds. They have been able to apply what they have learned inside and outside this clinic to meet daily mission requirements and contextualize the learning experiences in clinic.

(3) Readiness to Learn: Adults are motivated by education because they understand its value. Therefore, they are focused on learning (2005). The medics understand that mission failure may produce negative results. The medics seek training from each other or other staff if they do not know how to accomplish their assigned task.

(4) Practical Reasons to Learn: Adults want problem-centered approaches to their learning experiences. Many adults will enter continuing education for practical reasons (2005). The medics voiced scenarios where they needed to redevelop their skills and confidence to perform specific medical functions, and sought developmental opportunities in the clinic.

(5) Driven by Internal Motivation: Children are motivated by external negative consequences to learn. Adults are motivated by their desires.

Matthew Knowles (2005) felt that based on these assumptions, educators should consider the following when teaching adults:

(1) Adults should have a say in their learning because they are self-directed (2005). The medics were afforded the opportunity to speak on their needs through the semi-structured interviews. The results of their responses developed themes wish supported the skills and knowledge needed for the medic to function in this clinical setting.

(2) Because adults have so much experience to draw from, their focus should be on what they have already learned previously (2005). My goal as an educator is to scaffold their knowledge based on what I assumed they had learned. This study uncovered misunderstandings regarding their foundational knowledge gained from AIT. This study highlighted important areas which the medics did and did not have foundational knowledge.

(3) Adults are looking for practical learning. Therefore, learning content should be focused on topics surrounding their work or personal life (2005). The goal of this action research study is to ultimately interventions surrounding their functions inside the clinic.

(4) Learning should be focused on solving problems (2005). The medics highlighted difficulties performing various functions. Interventions can be developed to mitigate their challenges working inside the clinic.

Historical Context: Military Training

Retrospective to the 1700s, and right today as well, military operations and everyday actions and behaviors have been grounded in the concepts of rules, discipline, and compliance with orders (Cornell-d'Ecert, 2012). The military structure, equipment, training, and warfighting doctrines are always undergoing a process of adaptation to the ever-changing global environment (Vautravers, 2010).

Key leaders in the military have been trained to see the perspectives of others, analyze situations, evaluate circumstances, and make decisions while lower-ranking soldiers simply followed guidance. However, since the enemy has become increasingly adaptive, the military is beginning to recognize that soldiers need to be able to do more than follow orders. They need to be able to perform critical thinking and operate in non-traditional manners (Casey, 2009). In 2007, the United States Marine Corps hosted a conference that focused on determining ways to improve education and training offered to soldiers that would prepare them for the evolving battlefield (Salmoni, 2008). Through many presentations, an overarching theme evolved, namely, that it was necessary to address soldier training that would allow them to adapt to the current operational trends.

For the most part, U.S. military training has been primarily centered on listening to the instructor (Cornell-d'Ecert, 2012) and has been focused on tasks evaluated by measurements conditions, and standards. Although the military is grounded in rich tradition and old perspectives, A presentation by Braddock and Chatham (2003) supports the idea that to be successful in the changing war environment, all service members "must think" (p. 6).

My upbringing in the military contrasts differently from the much-younger medics that I interacted with daily. My development in the army in the early 2000s taught me that my power to think critically was in the hands of my leaders. Plainly speaking, I was not allowed to make decisions without asking first. Sixteen years later, it appears that this is no longer the military culture. The Braddock & Chatham (2003) publication reminded me that the newer generation of soldier needed to feel empowered to perform their duties.

My frame of reference to train medics is based on my prior experience as a soldier and medic for my first ten years of service. Appreciating the evolution of military training made me realize that I was still stuck on traditional views and realized that if I wanted to make medics adaptable to their clinical settings, I must produce a flexible frame of mind about military education and training methods. For example, I realized that I should not center the education around myself as the teacher by telling medics what they need to learn, but take up a non-traditional method of making education centered around the medics by asking them what they needed to learn.

Summary

In this chapter, I evaluated literature that helped to define and ground many aspects of the action study. Many resources were evaluated to gather an understanding of action research. An examination of methodologies and theoretical frameworks helped to define the intervention plan to be used in the current study and inspired future research. The historical flow of how military thinking influences the day-to-day operations and training of its soldiers was highlighted, and it has validated my view on providing army medics with a voice to develop the content of understanding their challenges in primary care.

Conclusion

Chapter two provided the reader with a literature review supporting the methodology, the theoretical framework, and the historical context of the study. Chapter three contains a discussion on the methodological process implemented in this study. Chapter four details the findings and interpretations of the data obtained. Lastly, a summary of the significant points and suggestions for future research conclude chapter five.

CHAPTER 3

METHODOLOGY

Introduction

Action research is a part of a process that is designed that to meet the needs, circumstances, and opportunities to bridge training to practice gaps (Kemmis, 2010; Winter, 1998). Action research can be appreciated as a medium to discuss experiences and learn from them (Ulvik, 2014). In this action research study, I learned from combat medics about their perceptions on what skills and knowledge is needed for them to perform in primary care settings to bridge the training to practice gap through semi-structured interviews. I triangulated the interview responses to the combat medic textbooks. The interview responses were analyzed, and the themes surrounding the responses were developed to answer the research question.

The purpose of this chapter is to discuss the fine details pertaining to the research methodology employed to address this study's research question. The setting and participants are described. The method in which I coded the responses from the interviews and verified the validity through data triangulation is explained. This chapter also includes information about my role as the researcher and ethical considerations of the study.

Research Design

Planning. I identified a problem of practice and reviewed information related to the research question. I also evaluated literature to inspire and an action research methodology with qualitative data as invaluable tools. I had to learn how to design and implement an interview script that would provide as much information as possible surrounding the needs of the combat medics. I had data. Mertler's (2014) literature also provided me with insight on the value of reflection in this process.

Acting. The counseling before the interview of participants was documented on a Department of the Army (DA) form 4856 detailing the medic's rights and responsibilities along with my obligations and responsibilities to the students. I took all the necessary measures to maintain the privacy of the participants by omitting the names from all the data collected and instead used codes. Each participant was assigned a code ranging from P1-P5. To facilitate the setting of the study, it was required that participants trust the researcher so they would open up about their thoughts and feelings regarding a particular topic Glesne & Peshkin (2006). As the researcher, I committed to guidelines of research ethics, the confines of military customs and courtesies, according to army equal opportunity (EO) policies, and enforced a zero-tolerance environment for Sexual Harassment Assault/Response Prevention (SHARP) policy violations (Army regulation 600-20: Army command policy, 2014). I always ensured that the research was honest and beneficial to the participants (Mertler, 2014).

Participants were directed to select a date and time block for the interview utilizing an online scheduling website called Doodle (See Figure 3.1). The

participants were able to establish interview times within the data collection period that best suited their needs. Registration information included email addresses and phone numbers needed for the interview. This information was concealed, so it was not be viewed by other participants. As the researcher, I was the only individual authorized access to the participants' personal information during the registration period.

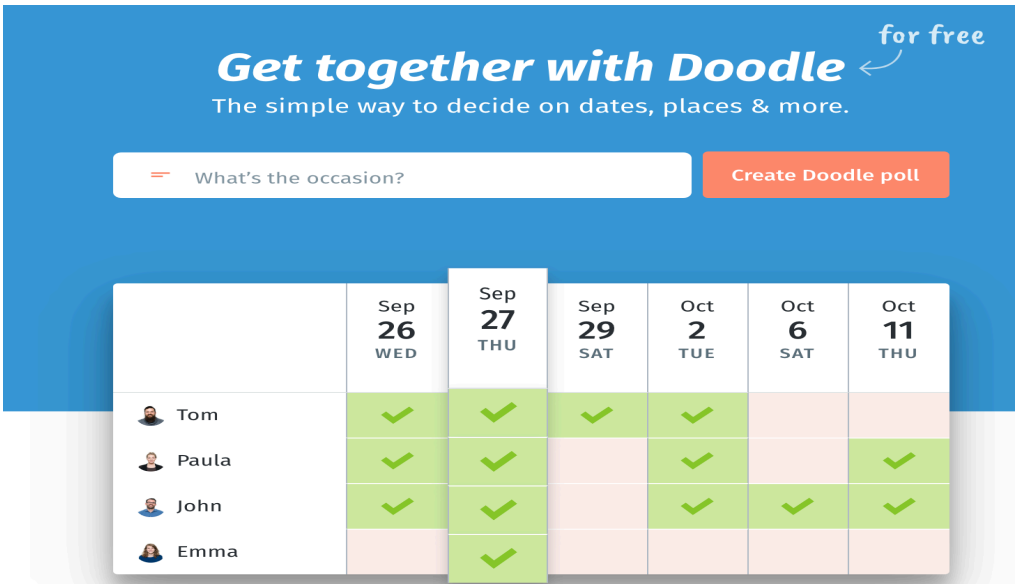

Figure 3.1

Registration website screenshot

Data Collection. It is essential to utilize a space conducive to an uninterrupted interview free of background noise and distractions (Creswell & Poth, 2018) I set my interview area inside my office and kept the door closed as not to be disturbed.

I utilized voice recording software on an iPhone that I did not have service, and initiated the phone call on a phone that had cellular services. I maintained notes of the participant's responses on the designed interview

protocol. During the assigned interview time, I initiated the phone call or video teleconference using the contact information and preference listed in the doodle registration form. Once the participant was on the phone, I allowed them an opportunity to seek a quiet and uninterrupted space for no more than twenty minutes.

Each participant was advised that a recording would commence with the reading of counseling specifics. Although the medics had already reviewed and signed the counseling (see appendix A), I read it aloud to the participant as an additional measure to ensure that the expectations and responsibilities of the researcher and participant were clear. The interview and recording began once the participant stated they had no additional questions and wished to proceed with the study.

At the beginning of each interview, personal demographics were requested, followed by semi-structured questions (See Appendix B). Then, semi-structured interview questions questioning allowed me to obtain the participants' perspectives on their experiences as medics working in limited primary care environments (See Appendix B). The line of questioning allowed them to discuss the difficulties they faced adjusting to this environment and afforded the participants the opportunity to discuss what they needed to know to meet due to different requirements of their practices in the clinic (See Appendix B):

Once I completed my lines of questioning, I asked the participant if they had anything else they wanted to say to contribute to the topic of discussion. Once the medic stated they had no additional remarks, I thanked them for their time and ended the call.

Data Analysis. Inductive analysis was used to reduce the amount of information collected and to organize the data into meaningful patterns and themes to construct a clear presentation of the findings (Johnson, 2008). A system of categorization called coding (Parsons & Brown, 2002) was used to group information into similar types of information to gather categories of narrative information that then provided answers to the research question.

I utilized SpeechMatics software to produce transcriptions of the of each interview. All the individual audio files were listened to in entirety twice to gain a true understanding of each participant's experiences and correct any transcription errors. The transcripts were then saved as Microsoft Word documents. Each document was then read in its entirety to seek any additional informational value and correct any other transcription errors not previously discovered.

Once I ensure there were no transcription errors, I listened to the interviews again as I read each interview in the Microsoft Word document. During this round of listening, I highlighted in yellow the statements surrounding the specific skills and knowledge the medics discussed as their needs to work in the primary care setting. I pasted the short phrases from the participant's feedback and coded their need on the matrix (see Appendix D). As anticipated, I found medics were very enthusiastic and discussed their needs in much detail. As a result, I ended up with many phrases and felt the need to group their needs as much as I can to contextualize their needs without losing its meaning. I decided to analyze the phrases into themes that surrounded their needs (see Appendix D).

I used the triangulation matrix to validate or invalidate the medics responses regarding the previous training they received. When I reviewed the responses and compared them to the resources available, their responses were either confirmed or invalidated. The validated responses confirmed their prior learning experiences, therefore confirming there was a background knowledge from which I could scaffold their learning experiences. The invalidated responses still had value in this study. Namely, it pointed to areas the medics no prior learning experiences in AIT before working in the clinic. The result of the triangulation process is that it pointed to the themes developed that needed the most emphasis in the medics continued training and learning experiences.

The in vivo-theme analysis I implemented allowed me to appreciate the main features or categories from the data (Parsons & Brown, 2002). In doing so, I was able to connect the data to the original research question (Mertler, 2014) and gain insight that I was not aware reflecting upon the categories and describing data regarding its applicability to the research question. Finally, interpretations of clear data (Mertler, 2014) were made. This was accomplished through the analysis of relationships, contradictions, similarities, and other relationships that the data had with the research question (Parsons & Brown, 2002).

Developing. This stage of action research focused primarily on making use of the data analysis, interpreting the results, and formulating a plan of action for the future (Mertler, 2014). In the development phase, I made considerations as to how the data obtained would impact future research designed to bridge the training to practice gaps in combat medics in my primary care environment. Action research is cyclical (Mertler, 2014). An action plan was formulated for future endeavors in the current primary care setting, but I received instructions

to move to another military installation. I changed my action plan to address the sudden change of my duty location. The development of the action plan will be discussed in chapter five.

Reflecting. The act of writing allowed for the opportunity to clarify the meaning of my experience and to allow an opportunity to learn more about the students and their learning (2014). By making use of the reflection phase, I took this period of reflection to acknowledge my professional growth in this experience as action research is something I had never done before as an educator. The reflections of my experience are discussed in chapters four and five.

Summary

The overall purpose of this action research study was to initiate an inquiry in a field of study that is not very well researched. The research question guiding this study is as follows: What knowledge and skill sets are required for combat medics to function in a primary care environment? This research question was explored by using Mertler's (2014) action research method entailing the planning, action, developing, and reflecting phases. Phase one of the study consisted of evaluating a problem of practice and developing a research plan. Phase two included the collection and analysis of the data. Phase three involved the creation of an action plan based on what was learned from the data. Phase four entails a discussion of findings which will be discussed in the next chapter.

Conclusion

Chapter one introduced the problem of practice and the research question. Chapter two detailed a literature review surrounding the topic of medical training and

action research methodology. This chapter discussed in detail the steps taken to conduct this study. Chapter four will discuss the findings and interpretations of the data obtained from the study. Chapter five will include discussion of an action plan, the implication of findings and recommendations

.

CHAPTER 4

FINDINGS AND INTERPRETATION OF THE RESULTS

Introduction

This chapter will discuss the findings and interpretations of the interview questions. The interview responses were coded, and themes were developed to summarize the needs of the medics. The themes are listed and individually discussed in this chapter. The themes are supported by verbatim responses from the participants elaborating on their challenges associated with the developed themes. Interpretations of the findings are discussed in this chapter.

Findings and Interpretations

Adults have their own experiences to contextualize their learning (Knowles et al., 2015). The skills and knowledge base the medics needed to function in this primary care setting were previously developed from experiences inside and outside this clinic. The medics either knew how to accomplish specific tasks because they had training, or just found their way to make their knowledge deficiencies work by asking assistance from other medics, nurses or licensed practical nurses in the clinic. Data analysis of the interview responses led to the development of nine major themes surrounding the skills and knowledge base they needed to work in this primary care setting. The nine major themes developed uncovered skills and knowledge that medics felt they

needed to function in the primary care setting. These themes are listed in order of frequency and importance (See Figure 4.1):

- Computer Applications
- Common Illness/Injury
- Clinical Triage and Reporting
- Fluid Resuscitation
- Invasive Procedures
- Medical Documentation
- Immunization/Medication Administration
- Using Medical Equipment
- Laboratory Functions

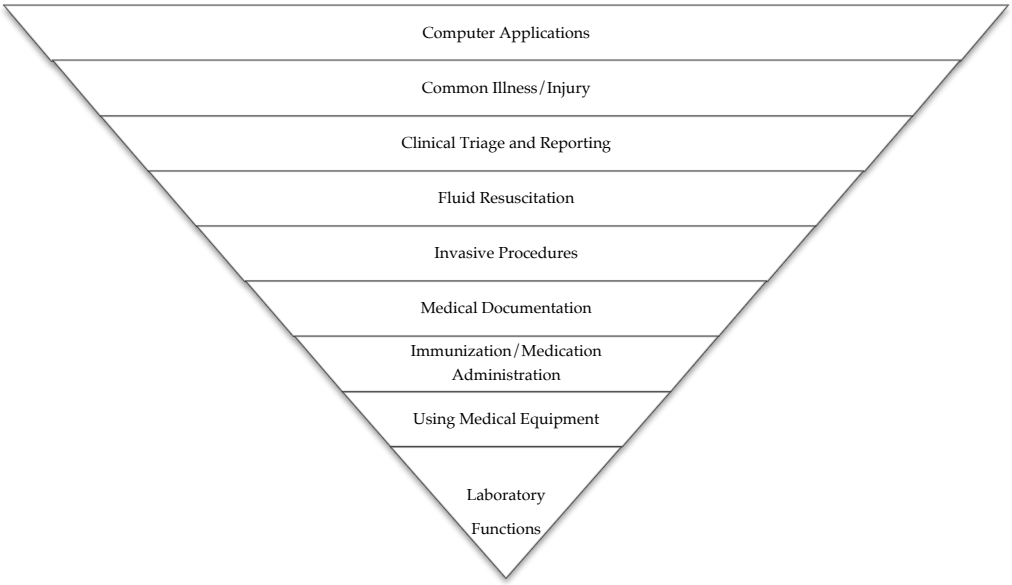

Figure 4.1

Major themes listed in order of frequency and importance

Computer Applications. The need to understand how to utilize computer applications was discovered in each interview. Medics working in primary care environments utilize AHLTA systems to annotate care encounters, which record vital signs, physical examination findings, diagnosis, interventions, and care management plans. CHCS is utilized primarily to schedule appointments for patients but can be used to submit orders for additional evaluation with laboratory and radiology services within a clinic or hospital. RelayHealth is a website that is designed for patients to communicate electronically with the primary care team. The purpose of this website includes but is not limited to: addressing medical questions, requesting medication refills, requesting lab results or appointments.

P5 had been serving in the army for nine years as a medic and had experiences working in combat and clinical settings. P5 described his time thus far in the clinic as "very easy" compared to the other demands that he had at his previous duty stations. P5 didn't like the primary care setting, saying, "this is easy and all…its better than getting shot at, but I'd rather be back on the line than dealing with the politics of this place."

P5 was the only participant that had knowledge and experience with ALHTA and CHCS by working in other environments. P5 stated that he received formal training at a previous duty station about the use of AHLTA and CHCS. He elaborated, "yeah, so when I in-processed, I had to get mandatory training at the If we didn't have the class, we couldn't touch patients, period." He stated, "I had seen all that stuff before…I had no issues with it here. But I have to help them all the time with it. P5 recalled, "I remember one medic was really

slow with AHLTA…wasn't taught at all what to do… we all had to stop and help her…All of us fell behind patient care while trying to help this guy…"

P5's experience with the computer applications heavily contrasted that of the other medics. P1 had been in service for two years and had no prior experiences outside the clinic. P1 had a different take on learning how to use computer applications. He started the discussion about ALHTA with "oh my God, ma'am… it was so frustrating". He said, "I got thrown into it" … "I got a quick course from my battle buddy about how to put stuff in, but that was it. I had to keep going back and ask everybody about how to do stuff…I was super slow and I didn't like it because the patient would get annoyed. It made things super stressful."

P2 has been serving for five years as a medic. His prior experience in the military before coming this primary care setting was with a unit that did not deploy. At that unit, he worked inside a battalion aid station. He elaborated, "I was bored there, I like that I'm busy". He particularly discussed his difficulties with using RelayHealth. He said, "ma'am before I started working with you, I never touched it, I never had to… then I got on your team you needed me to copy and paste lab results from AHLTA to send to the patients so you could tell them their results...I didn't know how to do it. I just had to ask the nurse so I could get it done".

Adult learners are purpose driven and therefore accept learning opportunities centered around their work or home lives (Knowles et al. 2015). To meet the demand of using RelayHealth, P2 sought instruction from the nursing staff so he could meet my demands. He stated, "When you told me to do RelayHealth, my first thought when you left was 'where's the nurse?'"

P2's experiences also highlighted a key point about this primary care setting, mainly that every provider in the clinic had different expectations of the medics. P2 also highlighted a reoccurring theme in several interview responses, which called to the fact that the training the medics are receiving before participating in patient care is not comprehensive if at all existent.

Medics function in primary care often as initial contact with the patient and set the tone for their care. The typical medical appointment is scheduled for twenty minutes, therefore, the process of "learning as you go" increased wait times, decreased productivity, stressed members of the primary care team and may have reduced patient satisfaction. Evaluating their experience made me realize that the work-learning setting is not only very stressful at times, but not very effective or efficient.

The evaluation of the combat medic text book (Center for Pre-hospital Medicine, 2016) details no formal training about the AHLTA or CHCS system, yet they are expected to learn as they go in the primary care clinic. This identified training gap points to a need for formal training for future medics. All the medics currently have experiential knowledge surrounding this demand, but may benefit from additional training to enhance their efficiency. The interview responses also call for formal training for medics without prior experience with computer applications and websites before they placed in this primary care environment.

Common Illness/Injury. In a civilian setting, emergency medical technicians-basic (EMT-B) would not be expected to provide diagnosis and management of simple cases (Samuels, 1992). Combat medics are certified EMTs-B but are often expected to identify and manage simple patient concerns

sometimes without having direct contact with a primary care provider (U.S. Army Medical Command, 2006).

Medics reported encounters with a lot of minor illnesses and musculoskeletal injuries during their time working, but felt ill-equipped how to identify the problem and help manage the patient's care.

P4 has been serving for four years, and has not worked in any other setting than the clinics at Fort Huachuca. He said, …" we haven't learned much until you got here...I know I'm going to see something interesting when I hear you call 'medic'…before you came we just screened people and stuff, didn't really learn anything."

Many of the medics discussed having not received education on common illness and injuries. For example, P3 discussed his frustration behind not being able to differentiate common illnesses we saw in clinic: "…ma'am honestly, I just still don't get the difference between a cold, allergies, or sinusitis…" P1 talked about what he learned in AIT and how it translated to his experiences in clinic: "I mean, it was there (in the books) but they kept telling us we're going to learn at our units. They always told us our PA would teach us what we needed to know…". I reviewed the textbook (Center for Pre-hospital Medicine, 2016) to determine if there is education on common illnesses and injuries detailed. There was a considerable amount of literature focused on common illnesses and injuries. Because of P1's feedback, I felt the textbooks did not serve as an adequate confirmation of the medics' foundational knowledge on injuries and illnesses.

The feedback of the medics illustrated that the medics working in the primary care setting were being expected to understand things outside the basic

scope of their assigned knowledge. For example, one of the medics discussed a case where a patient had a sore throat and it was expected of him to be able to articulate why strep pharyngitis was not likely. He articulated, "ma'am, remember that one time you asked me about the patient's centor score? Yeah, I was lost."

The interview responses made me understand that somehow in my 16 years of military service I had forgotten about the boundaries associated with the scope of the medics' knowledge and had been unnecessarily frustrated with my interactions with the medics thus far. I expected the medics to think like a clinician and function as extensions of my knowledge to make them better prepared to work in any setting, but failed to arm them with the knowledge to meet my expectations. I realized the work-learning setting had some severe limitations, and I needed to consider formal blocks of training to help better the medics to meet these expectations.

Clinical Triage/Reporting. Medics are expected to obtain data about the patient's current state called vital signs. The data includes the patient's blood pressure, pulse, the rate of breathing and if applicable, the severity of their pain on a scale of 1-10. The medics discussed how they felt very comfortable with this skillset. P3 described a typical interaction with a patient: "I mean…. I take the patient in the room, ask them to take off their top and I get their vital signs. I ask them questions and stuff and put it in the computer…"

Review of the textbooks (Center for Pre-hospital Medicine, 2016) for combat medics did demonstrate that obtaining vital signs were covered in detail. The medics were able to draw from their experiences in AIT to apply them to their current working demands efficiently.

One way to prioritize patients that come to the clinic without scheduled appointments is by using the algorithm-directed troop medical care (ADTMC) manual (U.S. Army Medical Command, 2006). One medic stated he did not know how to use the manual, which provides a step-by-step direction on how direct a myriad of medical concerns. For example, if the patient came into a clinic with knee pain, the medic would be able to open the manual to locate the symptom and follow the algorithm to prioritize or even manage the patient by providing activity limitation recommendations and prescribing necessary medications.

During the interviews with the medics, I discovered that they avoided using the manual. When I asked why the five medics expressed varying reasons illustrating a lack of instruction about the manual. P2 said, "honestly, I saw that big book and didn't bother...I didn't have time with the patient in the room to figure out how to use it, so I just decided to triage them on how bad I felt they needed to get seen". P1 stated, "it's just time-consuming to figure out how to go through it."

Medics were drawing on their prior knowledge and experience accomplish the task of triaging patients but were ineffective at times. When patients are not adequately prioritized, they are scheduled appointment times with a provider. The provider discovers that a medic could have managed the patient. Consequently, patients that do not need to be evaluated by a provider use valuable appointment times that patients with more pressing needs could have used. Decisions based on a medic's personal reference may be decreasing access to patient care.

The decision to implement formal training about how to use the ATDMC manual is supported by Knowles' (2015) principle of andragogy, which states that learning should center around the problem. Formally instructing the medics on the use of ADTMC would be an invaluable tool to the primary care team that would boost the efficiency of primary care operations and maximizes use of available appointments in the clinic.

The medics felt ill-prepared to back-brief medical providers in the clinic on a patient encounter. When I reviewed their textbook (CITE), I noticed that there was no training in medical reporting in the primary care module.

I expect the medics are to report the patient concern, and history of the concern in detail using the acronym OPQRST (Stoy et al., 2004). OPQRST relates to:

- Onset. What the patient was doing when the symptoms started. It may be related what activity prompted the pain or if it was a sudden or gradual aspect of an ongoing medical problem.
- Provocation/Palliation. What made the symptoms better or worse?
- Quality. Description of the pain or other symptoms
- Radiation (if applicable). If pain or other symptoms radiate to other parts of the patient's body
- Severity (if applicable. How severe the pain or described discomfort is on a scale of 1-10.
- Time. How long the patient had been experiencing the symptoms that led to their visit to the clinic. (Stoy et al., 2004).

Medics are also expected to understand the appropriateness of a SAMPLE report. SAMPLE (Stoy et al., 2004) provides key answers from the patient that enhances their medical assessment in the clinic. The SAMPLE report provides:

- Signs/symptoms. What the patient states they are feeling and the physical presentation of the patient in the clinic.
- Allergies. Any medications or environmental factors that the patient may have a harmful reaction to if exposed.
- Medications. Any medications the patient is taking to manage their symptom or other medical conditions. This also includes any medications prescribed or not prescribed, and supplements purchased over the counter.
- Past Illnesses. Any medical conditions that the patient is receiving care for currently, or any medical events in the past that is related to their current presentation
- Last Oral Intake. The last time the patient ate, or if applicable the patient's last menstrual cycle.
- Events. What events led to the current illness or injury (Stoy et al., 2004)

P1 discussed his challenges in medical reporting: "I really suck at it…one time the doc got so frustrated with me they stopped asking me for a report and would just go to the treatment room once I was done screening".

A reliable medical report will give the clinician key input that helps guide the diagnosis and management of the patient's care and enhances the safety of the decisions made when managing a patient's care. Proper reporting also allows a provider to assimilate possible diagnosis before having contact with the patient, thus making the visit more efficient.

Medics in the primary care setting are essential members of the primary care team, and function as an essential quality control measure to ensure the safety of the patient. When the patient's feedback, medical records and report from the medic do not match, this signals the provider to reevaluate the patient more closely and deconflict any information before making any decisions. Understanding how to obtain a SAMPLE report is critical to the safety of patients. For example, P4 recalled a time when a provider prescribed a medication a patient was allergic to "…the doc had placed an order for Septra, but when I saw the order, I reminded him that the patient had the allergy, and they were able to order a different medicine."

Although a provider is likely to talk to a patient and ask the patient the same questions, the medics did previously, ensuring the patient's answers and medical records match prevents a provider from making any decisions that might cause an adverse outcome such as illness or death. The severity of this potential consequence affirmed the need to implement formal training on patient reporting.

Fluid Resuscitation. Combat medics are expected to be able to gain intravenous access to a patient and administer fluids, such as normal saline, primarily for hydration purposes in a primary care setting. Intravenous access can also be used to administer medications, especially when the patient is unable to take them orally. The medics felt prepared to perform this skill in primary care settings. P5 reported, "We did IVs a lot in AIT… a lot of times under simulated stressful situations... it was a no-brainer in clinic". P4 stated that it was "…one of my favorite things to do as a medic."

Adult learners are internally motivated and practical learners (Knowles et al., 2015), therefore seek learning experiences surrounding their working environment. P2 felt that although she did learn the skill in AIT, her lack of exposure in other primary care settings over time made her seek sustainment training by practicing on her peers during downtime. She said, "I didn't realize it was a perishable skill." The feedback from the interviews revealed that although medics are comfortable with this skill set, I should not take their readiness for granted by not occasionally affording training opportunities to keep their skills current.

Invasive Procedures. Medics are expected to assist with minor invasive procedures in a primary care setting. These procedures include but are not limited to toenail removals, joint injections, incision and draining, laceration repair, and excisions.

Medics reported not knowing how to prepare sterile settings and mentioned they could not identify common instruments used during procedures. For example, P4 stated, "…the doc told me to get a 10 blade and I came back with an 11. He had to teach me how to identify the right blade. I had no idea that 10 blades are used for cutting skin, and 11 blades to punch…" P1 discussed the time he contaminated a sterile field "I didn't know I couldn't drop gaze from the drawer into the procedure tray… we had to lay out a new field while the patient was on the bed…"

The review of the textbooks (Center for Pre-hospital Medicine, 2016) did detail education on sterile and aseptic techniques, but I did not find an application of the knowledge with hands-on training. I also could not find any education about commonly used surgical instruments. The triangulation of the

medic's feedback with the textbook revealed to me that sustainment training regarding sterile procedures is needed, and formal training about common instruments used for standard medical procedures in the primary care setting would prove beneficial.

P2 discussed his experiences working with me to assist with well woman exam. A well woman examination includes a visual and manual evaluation of female reproductive organs. The well-woman exam also includes a collection of samples that evaluate the organs for harmful cellular changes or infections. P2 is a male who has been serving for five years. Before working with me in the clinic, he was never expected to assist with a well-woman examination. "The female medic or nurse had to deal with that…" P2 recalls his experiences assisting with a well-woman exam: "The nurse gave me a crash course on how to set things up…when you had me in the room, I had a hard time remembering which swab went in what tube…then that one time you needed a small speculum instead of medium, I didn't know what color they are…you had to tell me what to grab…it was stressful, but I got through it…" When I reviewed the limited primary care manual (Center for Pre-hospital Medicine, 2016), I discovered that medics do not receive instruction on how to perform as assistants with invasive procedures.

Discussions surrounding their needs to assist with invasive procedures highlighted a significant point: The expectations of the medics varied by the provider they were working with and were ill-prepared to meet my demands. Because of this, the medics need additional training to become more interactive members of my primary care team. I also realized that sex should not be a discriminating factor for which skills and experiences a medic should participate.

Medical Documentation. The medics discussed the need to write subjective objective assessment plan (SOAP) notes in primary care settings when ALTHA systems were not working during patient care. The SOAP note is written to document a patient's medical encounter. The premise of the SOAP note is to detail (1) Subjective information: The patient's concern is detailed along with information about the onset, provocation, quality, radiation, severity, and time of symptoms. (2) Objective information: The outward appearance the medic sees. This may even include a simple physical exam if applicable. (3) Assessment: The diagnosis related to the patient's subjective and objective information and (4) Plan: The management of the patient's care, which includes but not limited to splinting, activity limitation recommendations and medications.

The medics all confirmed receiving formal education on SOAP notes. Some even reported having hands-on training that allowed them to practice writing them, but their experiences varied. P3 reported that writing SOAP notes was "drilled into us a bit, and we practiced writing a lot of notes." P1 stated their learning experience about a SOAP note was by a PowerPoint presentation. P2 stated he "had a class some point in AIT and we only wrote one SOAP note."

In the clinic, medical documentation is done primarily through the ALHLTA systems. Occasionally, it will fail, and the team must default to performing patient care by documenting care on a standard form (SF) 600. Although the medics had received some formal education on this requirement, it was hardly done, and medics expressed frustrations about needing to use the forms. P1 elaborated "When AHLTA is down, we have to make SOAP notes…. You kept making me rewrite the SOAP note because I was doing it wrong…"

Medics have relied on technology available to meet the functional requirements of the clinic, therefore appear to have lost appreciation of how to document medical documentation by hand. Medics should be able to meet this requirement with and without technology available. The interview responses point to a need to implement training that will allow medics to appreciate how to accomplish this task manually.

Immunization/Medication Administration. Medics are expected to immunize patients in primary care settings. Medics are also expected to administer medications orally, intramuscularly, or through intravenous access with supervision. The course textbooks confirmed that medics receive hands-on training on intramuscular, subcutaneous, and subdermal injections by practicing on one another. P4 stated he remembered this skill because "anxiety of sticking each other made us remember...we didn't want to mess our battle buddies up."

Some of the medics reported that they needed sustainment training on this skill not because they lost the ability, but because they lacked the confidence to perform the skill in a clinical setting. P2 reported, "the real-world applicability was at first really scary." P1 stated, "I had to go back and ask my battle buddy on the side if I was doing everything right…At first, I needed to have someone with me to do the shots, but I'm good now".

The interview responses surrounding this theme revealed that high-stress training was particularly useful in helping the medics retain the confidence and knowledge to administer injections. If reasonable, the use of training with and on one-another may be a useful method to maintain skill knowledge and confidence.

Using Medical Equipment. Medics must use various pieces of medical equipment working in primary care settings. Review of the medics' textbooks do not cover any formal training surrounding the various pieces of equipment they may use. The medics that arrived directly to the unit from advanced individual training discussed they needed guidance from other medics on how to use the equipment. Medics with prior experience discussed using equipment in similar environments and were able to use unfamiliar equipment intuitively.

Most participants specifically mentioned they perform, but initially did not know how to perform electrocardiogram (EKG) tracing. P3 mentioned, "I was told to do an EKG on a patient, and I had no idea…when I told the provider I didn't know how he told me to find someone to help me." To perform an EKG, the patient's chest must be exposed be postured for the procedure, and connected to the equipment. Ten chords called "leads" are attached to the patient in an orderly fashion before the user performs the tracing. If the tracing is not performed properly, the tracing will be inaccurate. P1 said, "when I first started, I kept going back to the patient to recheck my leads because I was being told the reading was off…remember that one time you went in and had to fix the leads for me? I was a little embarrassed."

Learning on the job may be helpful in some cases, but learning to perform EKG tracing can be time-consuming. Amid patient care, teaching medics how to perform EKG tracing pulls others from their responsibilities and extends the patient encounter in the clinic. Formal training on using medical equipment in my primary care environment may prove redundant at this point, but patients would benefit from formal training outside patient care encounters.

Laboratory Functions. Civilian hospitals are staffed with phlebotomists to draw blood from patients to be analyzed. In this current primary care setting, blood and other human specimens are collected in the clinic by medics.

The medics were already trained on obtaining intravenous access and blood draw, but expressed complications related to processing samples: "The lab was always calling saying that we put the blood in the wrong colored tube, but they would never take the time to come over and teach us how they need it done." P4 elaborated, "…I didn't know a wet prep had to get to the hospital in an hour…I had to ask someone what a formalin cup was…" P3 said, "yes ma'am, I've learned when you would most likely want a throat culture…sometimes I get one just in case so its ready if you need it."

Specimens collected improperly, or not processed within a specific time will result in a rejected specimen. Laboratories will contact the clinic and request recollection. The primary care team must contact the patient and request they come back for the recollection. When laboratory analysis is delayed, a patient's diagnosis or medical management is delayed.

Summary

The participants of this study discussed the skills and knowledge they needed to perform in the primary care setting. The evidence from the interviews highlighted nine major themes surrounding what medics needed to work in the primary care setting. The data collection process and analysis of the interviews illuminated a shortfall of the work-learning environment and my short-comings as an educator.

Conclusion

This action research study relied on the perspectives and experiences of a group of participants who had diverse military experiences as combat medics as working the primary care setting. In summary, these willing participants shared many common themes and actions needed to bridge the training to practice gap. Chapter four detailed the findings and interpretation of the data obtained. Chapter five provides a discussion, recommendations, and suggestions for future research.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS, AND IMPLICATIONS

Introduction

This chapter functions as a summary of the findings of the DiP. This chapter also includes discussion about the focus, overview, and summary of the study. Major discussion points, implications of the findings, and suggestions for other research are presented. In addition, recommendations are for future research will be presented.

Discussion of Major Points of the Study

Analysis of the data revealed the training to practice to gap is not as severe as I had initially perceived. The medics that have been working in the primary care setting have been able to draw the knowledge from their experiences in AIT, experiences in other environments, or while working in the clinic. If they did not receive education on what was required, they relied on fellow medics, nurses or other staff to help them meet this need. It also seems that the reliance on others presented a false appearance of their competencies, thus hiding that the medics truly needed further training so they could be productive members of the team.

I relied on the combat medic textbook to evaluate as to whether the medic received foundational knowledge necessary to work in the clinic. The interview responses revealed their textbook did not always serve as an adequate reference

from which they drew their knowledge. I appreciated that although medics received training in specific areas, it was very brief and little time was spent to make them competent in that demand. For example, combat medics are expected to write SOAP notes, but little time was devoted to the practice. Thus, I should not take advantage of their prior training and dedicate just as much time keeping them current on things they have already learned or experienced. Investigating exactly what and how they received instruction may be necessary to develop a fair assessment of their competencies. By doing so, I will be able to formulate reasonable expectations and formal training for medics when they report to the clinic to work as members of the primary care team.

There were some skills and knowledge that was not instructed in advanced individual training, namely the use of computer applications and identifying instruments used during common invasive procedures performed in the clinic. Provided medics are more likely to function in a primary care environment than deploy to combat (McIlvaine, 2011), it may be useful to discuss how medics are functioning in these settings with the training curriculum designers to determine if more time can be spent on the development of their skills and knowledge.

I was unaware that the medics are separated from work and learning experiences due to their sex. Before working with me in the clinic, male medics were not used to assist with sensitive procedures involving females. I would postulate this is done for patient comfort and clinic liability, but the provider staff is made mostly of men. Meaning that although a male would perform the well-woman exam on a patient that accepted a male provider, female medics

were pulled from other teams to help perform this exam. The United States Army has shifted to accepting women in combat arms jobs (Kazman, de la Motte, Bramhall, Purvis, & Deuster, 2015); therefore, it is necessary to allow male medics to learn how to interact with female patients even with sensitive matters.

The findings of these interviews highlighted that medics are expected to perform outside the scope of their knowledge and skills. MEDCOM policy 40-50 (U.S. Army Medical Command, 2016) supports allowing the medic to function beyond the scope of their education, but are not adequately trained to function as such. The result of this policy is that medics have been thrown into this primary care setting with little understanding of their requirements. While doing so may physically fill a needed position, the interview responses illustrate that this action has consistently led to decreased productivity and efficiency of care in the clinic. The focus on fulfilling the daily mission has clouded the view of an appropriate development of the medics working in the primary care setting. The responses of this interview have made me realize that more formal training is required, especially for medics that are new to patient care in this setting.

Medics are invaluable assets to the primary care team. Through these interviews, I realize how much these medical professionals are taken for granted. Medics are expected to be highly adaptable, relying on their leaders to groom them to meet any standard for which is set. Medics can be adaptable if appropriately armed with the tools to succeed. I realize as an educator and leader that conducting this study has armed me with the appropriate tools to help the medics succeed.

My goal as an educator was to extend my knowledge to medics as a clinician so that I could make them able to perform as extensions of other physician assistants in other settings. The interview responses allowed me to realize that my energy should devoted to ensuring they have a strong foundation to meet the functional demands in the clinic first.

Most importantly, the interview responses made me realize that the work-learning environment was highly ineffective. The medics associated their stress with their learning experiences in the clinic. To adequately solve problems related to their working environment, I should heavily consider implementing formal training Thursday mornings when the clinic is closed.

Implications of the Findings

The data collected confirmed my need to implement formal training in this setting and provided a fresh perspective about the difficulties I faced with medics working in the clinic. Deconflicting my expectations with the medics training reality permitted my attitude about the problem of practice to shift from frustration to shared understanding.

The themes produced from the interviews provided a better understanding as to what the medics needed to work in the primary care setting. The responses highlighted a call to ensure that medics are adequately trained to perform these duties before working in the primary care team. Re-creation of competency checklists may be necessary to ensure that the skills and knowledge the medics need to work in this setting is being evaluated before they can work as members of the primary care team.

This study has encouraged me to continue action research in the next clinical setting which I will function at the next duty position in California. The medics deserve to have a leader that will take the time necessary to ensure there is an understanding of their capabilities and how we can work as a team to develop them to be better medics.

The Action Plan

The development of an action plan is part of Mertler's (2014) cyclical process. Action plans can be individually or team-oriented in nature. Individual action plans suit researchers who may be satisfying graduate level requirements, and fit seasoned educators who use action research as an ongoing reflection about their teaching practices (Mertler, 2014).

Action research involves the researcher as the active participant of the learning environment (Mertler, 2014). I was recently informed that I would be leaving Fort Huachuca, Arizona and moving to Fort Irwin, California in January 2019. By being removed from the current learning environment averts me from performing any additional action research cycles related to my current clinic. Thus, I moved my focus from a team action plan and settled individual action plan for this study. Though I was disappointed with needing to shift to an individual action plan, Mertler (2014) reminded me that the work I produced was still valuable.

Mertler (2014) stated, "As a community of professional educators, it is critical that we move beyond the expectation that writing a research report is something done only by academics at colleges and universities" (p. 253). I also

intend to seek publication that will allow educators of varying fields and backgrounds to gain insight on the army's unique adult education challenges.

Suggestions for Future Research

Action research provides a very small but useful view of a research question but is not intended to represent a larger population. Therefore, this dissertation should not be considered all-inclusive in solving or evaluating this problem of practice in all military primary care settings.

Based on the outcome of this action research study, I have the following recommendations:

- Consider implementing this action research study in my new teaching environment. In doing so, I will be able to address the needs of a new group of medics and perform multiple cycles of action research on the subject which will allow me to formulate and evaluate interventions.
- Consider formal research to determine what is and what is not instructed in AIT to develop a fair expectation of the medic's performance.

Conclusion

This study granted provided an opportunity to obtain a different perspective on a training to practice gap in combat medics working in limited primary care. Other researchers and curriculum developers can perform this study. It is hoped that the study performed will provide additional inspiration to all military leaders to not be afraid to take a closer look at the problems we face, and formulate solutions through research.

REFERENCES

Abbott, C. A., & De Lorenzo, R. (2004). Effectiveness of an adult-learning, self-directed model compared with traditional lecture-based teaching methods in out-of-hospital training. *Academic Emergency Medicine*, *11*(1), 33–37. https://doi.org/10.1197/S1069-6563(03)00582-7

Abela, J. (2009). Adult learning theories and medical education: A review. *Malta Medical Journal*, *21*(1), 11–18. Retrieved from http://www.scopus.com/inward/record.url?eid=2-s2.0-70350117962&partnerID=40&md5=ad1e406672e29bd1454ba361165f8535%5Cnhttps://www.researchgate.net/profile/Jurgen_Abela/publication/281060971_Adult_learning_theories_and_medical_education_A_review/links/56001cff

U.S. Army Medical Command. (2015). *Algorithm-directed troop medical care: A guide for patient screening*.

Department of the Army. (2008) *Army MOS Smartbook*. Retrieved from http://usacac.army.mil/cac2/retention/MOSBook.pdf

Department of the Army. (2014)*: Army command policy* (AR 600-20).

Department of the Army. (2013). *Casualty Evacuation* (ATP 4-25.13).

Balko, S. (1998). *The Evolution of Advanced Individual Training in the US Army Signal Corps*. Carlisle Barracks. Retrieved from http://www.dtic.mil/dtic/tr/fulltext/u2/a345614.pdf

Bond, C., Hastings, P. R., & Kling, J. (Eds.). (2010). *68W Advanced Field Craft: Combat Medic Skills*. Sudbury, MA: Jones and Bartlett.

Braddock, J., & Chatham, R. E. (2003). *Defense Science Board Task Force on Training for Future Conflicts*. Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology and Logistics.

Calhoun, E. (1993). Action research: Three approaches. *Educational Leadership*, *51*(October 1993), 62–65. Retrieved from http://www.stcoll.edu.jm/Education/PDF%5CReflective Practicum%5Caction_research_three.pdf

Capturing outpatient health care with AHLTA. (n.d.). Retrieved September 22, 2018, from https://health.mil/Military-Health-Topics/Technology/Military-Electronic-Health-Record/Garrison/Capturing-Outpatient-Documentation

Casey, G. (2009). The army of the 21st century. *Army*, *59*(10), 25–40.

Center for Pre Hospital Medicine (2016). *68W10 Limited primary Care Student Handouts.*

CME Content: Definition and examples. (n.d.). Retrieved October 6, 2016, from http://www.accme.org/printpdf/requirements/accreditation-requirements-cme-providers/policies-and-definitions/cme-content-definition-and-examples

Coghlan, D., & Shani, A. B. (2005). Roles, politics, and ethics in action research design. *Systemic Practice and Action Research*, *18*(6), 533–546. https://doi.org/10.1007/s11213-005-9465-3

.

Cornell-d'Ecert, B. (2012). Beyond Training; New ideas for military forces operating beyond war. In *New Directions for Adult and Continuing Education*. https://doi.org/10.1002/ace

Creswell, J., & Poth, C. (2018). *Qualitative Inquiry & Research Design: Choosing Among Five Appropaches* (4th ed.). Thousand Oaks, CA: Sage Publications.

Dana, N. F., & Yendol-Hoppey, D. (2014). *The Reflective Educator's Guide to Classroom Research*. Thousand Oaks, CA: Corwin.

Department of the Army Medical Command. (2016). *Clinical Baseline Competencies for Enlisted Medical Personnel Performing Direct Patient Care at the Military Treatment Facility* (MEDCOM Regulation 40-50).

Dîrzu, D. S., Hagău, N., Boţ, T., Fărcaş, L., & Copotoiu, S. M. (2016). The effectiveness of using medical students for training high school students in cardiopulmonary resuscitation. *Acta Medica Marisiensis*, *62*(2), 202–204. https://doi.org/10.1515/amma-2016-0005

Downes, L. (2017). The medicanic defeat strategy: How small changes can make a huge impact. *Infantry*, (March), 18–20.

Office of the Surgeon General. (2013). *Emergency War Surgery*. Fort Sam Houston, TX

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2015). *How to Design and Evaluate Research in Education*. New York, NY: McGraw-Hill.

Glesne, C., & Peshkin, A. (2006). *Becoming Qualitative Researchers: An Introduction*. (3rd ed.). New York, NY: Longman.

Goodyear-Smith, F., Whitehorn, M., & McCormick, R. (2009). Experiences and preferences of general practitioners regarding contining medical education:

A qualitative study. *The New Zeland Medical Journal*, *122*(1297), 25–37.

Hoang, T. N., Kang, J., Siriratsivawong, K., LaPorta, A., Heck, A., Ferraro, J., … Walsh, J. (2016). Hyper-realistic, team-centered fleet surgical team training provides sustained improvements in performance. *Journal of Surgical Education*, *73*(4), 668–674. https://doi.org/10.1016/j.jsurg.2016.03.004

Job Description -Emergency Medical Technician -Basic Responsibilities. (n.d.).

Johnson, A. P. (2008). *A Short Guide to Action Research* (3rd ed.). Boston, MA.

Kazman, J. B., de la Motte, S., Bramhall, E. M. S., Purvis, D. L., & Deuster, P. A. (2015). Physical ftness and injury reporting among active duty and national guard/reserve women: Associations with risk and lifestyle factors. *U.S. Army Medical Department Journal*, (June), 39–47.

Kemmis, S. (2010). What is to be done? The place of action research. *Educational Action Research*, *18*(4), 417–427. https://doi.org/10.1080/09650792.2010.524745

Knowles, M. S., Elwood, H. I., & Swanson, R. A. . (2005). *The Adult Learner* (6th ed.). Burlington, MA: Elsevier.

Lasater, K. (2007). Hgh-fidelity simulation and the development of clinical judgement: Students' experiences. *Journal of Nursing Education*, *46*(6), 269–276.

Leedy, P., & Ormrod, J. (2016). *Practical research: Planning and Design* (11th ed.). New York, NY.

Lew, V., & Ghassemzadeh, S. (2018). *SOAP Notes*. *StatPearls*. StatPearls Publishing. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/29489268

Mabry, R. (2003). US military revamps combat medic training and care. *The*

Lancet, *361*(February 2003), 494–496.

Manring, M. M., Hawk, A., Calhoun, J. H., & Andersen, R. C. (2009). Treatment of war wounds: A historical review. *Clinical Orthopaedics and Related Research*, *467*(8), 2168–91. https://doi.org/10.1007/s11999-009-0738-5

Marinopoulos, S. S., Dorman, T., Ratanawongsa, N., Wilson, L. M., Ashar, B. H., & Magaziner, J. L. (2007). Effectiveness of continuing medical education. *Evid Rep Technol Assess*, *149*(October 2016), 1–29.

McIlvaine, R. (2011). Soldiers to begin with nine-month deployments. Retrieved from https://www.army.mil/article/63073/169530

McNiff, J. (2013). *Action Research: Principles and Practice* (Third). New York, NY: Routledge.

Mertler, C. A. (2014). *Action research: Improving schools and empowering educators* (Fourth). Thousand Oaks: Sage Publications.

Morton, A. (1998). Ethics in action research. *Trust for Educational Leadership*, *28*(1), 10. https://doi.org/10.1023/A:1022430231458

Owen, M. (2006). Conflict and convergence: The ethics review of action research. *Journal of Academic Ethics*, *4*(1–4), 61–75. https://doi.org/10.1007/s10805-006-9021-5

Rogers, D., Elstein, A., & Bordage, G. (2001). Improving continuing medical education for surgical techniques: Applying the lessons learned in the first decade of minimal access surgery. *Annals of Surgery*, *233*(2), 159–166. https://doi.org/10.1097/00000658-200102000-00003

Roller, M. R., & Lavrakas, P. J. (2015). *Applied Qualitative Research Design*. New York, NY: The Guilford Press.

Saldaña, J. (2016). *The Coding Manual for Qualitative Researchers* (3rd ed.).

Thousand Oaks, CA.

Salmoni, B. A. (2008). Joint conference sponsored by marine corps training and education command and the united states naval academy. In *Pedagogy for the Long War: Teaching Irregular Warfare*. Quantico, VA: Marine Corps University.

Samuels, D. J. (1992). Emergency medical technician-basic, national standard curriculum. *Trauma*. https://doi.org/10.1037/e592372009-001

Samuels, D. J., Bock, H., Mauli, K., & Stoy, W. (1992). *Emergency Medical Technician-Basic: National Standard Curriculum*. https://doi.org/10.1037/e592372009-001

Schauer, S. G., Mabry, R., Varney, S. M., & Howard, J. T. (2015). Emergency department patients support the use of combat medics in their clinical care. *Journal of Special Operations Medicine*, *15*(Summer (2)), 74–78.

Sein, M. K., Henfridsson, O., Rossi, M., & Lindgren, R. (2011). Action design research. *MIS Quarterly*, *35*(1), 37–56. https://doi.org/10.1080/0268396022000017725

Stiltner, J. (n.d.). Why is MEDPROS important? Retrieved September 22, 2018, from https://www.army.mil/article/76221/why_is_medpros_important

Stoy, W., Lejeune, D., & Platt, T. (2004). *Mosby's EMT Basic Textbook* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.

Tibbetts, B., Crutchfield, C., & Duran-Stanton, A. (2018). Role of the battalion physician assistant. In *US Army Physician Assistant Handbook* (pp. 173–221). Fort Sam Houston, TX: the Borden Institute.

TRICARE Composite Health Care System (CHCS) at CRDAMC. (n.d.). Retrieved September 22, 2018, from

http://www.crdamc.amedd.army.mil/TRICARE/chcs.aspx

Ulvik, M. (2014). Student-teachers doing action research in their practicum: Why and how? *Educational Action Research*, *22*(4), 518–533. https://doi.org/10.1080/09650792.2014.918901

Vautravers, A. (2010). Military operations in urban areas. *International Review of the Red Cross*, *92*(878), 437–452. https://doi.org/10.1017/S1816383110000366

Winter, R. (1998). Finding a voice – thinking with others: a conception of action research. *Educational Action Research*, *6*(February 2015), 53–68. https://doi.org/10.1080/09650799800200052

APPENDIX A: CONSENT/COUNSELING FORM

DEVELOPMENTAL COUNSELING FORM
For use of this form, see ATP 6-22.1; the proponent agency is TRADOC.

DATA REQUIRED BY THE PRIVACY ACT OF 1974

AUTHORITY:	5 USC 301, Departmental Regulations; 10 USC 3013, Secretary of the Army.
PRINCIPAL PURPOSE:	To assist leaders in conducting and recording counseling data pertaining to subordinates.
ROUTINE USES:	The DoD Blanket Routine Uses set forth at the beginning of the Army's compilation of systems or records notices also apply to this system.
DISCLOSURE:	Disclosure is voluntary.

PART I - ADMINISTRATIVE DATA

Name *(Last, First, MI)*	Rank/Grade	Date of Counseling

Organization	Name and Title of Counselor
MEDDAC FORT HUACHUCA, AZ	CPT Tracey Lyons-White, Physician Assistant

PART II - BACKGROUND INFORMATION

Purpose of Counseling: *(Leader states the reason for the counseling, e.g. Performance/Professional or Event-Oriented counseling, and includes the leader's facts and observations prior to the counseling.)*

EVENT ORIENTED COUNSELING
VOLUNTARY PARTICIPATION IN RESEARCH

PART III - SUMMARY OF COUNSELING
Complete this section during or immediately subsequent to counseling.

Key Points of Discussion:

The purpose of this interview is to help military educators gain greater insight in the training to practice gap in combat medics working in limited primary care environments. Your participation will give educators insights into the challenges you faced coming from advanced individual training to working in a troop medical clinic (TMC) or battalion aid station (BAS). You have been asked to participate in this study because you are a 68W combat medic who has worked in or is currently working in a primary care environment, or have terminated service as a combat medic less than two years ago and have worked in a primary care environment. This interview is entirely voluntary and confidential; therefore, you do not have to answer any questions and you may withdraw your responses at any time. For confidentiality purposes, you will not be identified as a participant anywhere within the study. Data collected from this research will be encrypted and stored at place of residence on a computer. This interview will be recorded and is not anticipated to take no more than twenty minutes. If you have any questions or concerns about this study, please contact CPT Tracey Lyons-White at tracey.m.lyonswhite.mil@mail.mil. Should you wish to withdraw your responses at a later time, you are free to contact the researcher in person or by email at the address listed above. By signing this counseling, you are agreeing that you have agreed to participate in this study freely without any coercion from myself or any members within the chain of command. During this study, the participant and the researcher will still adhere to the warrior ethos and follow proper customs and courtesies.

Plan of Action *(Outlines actions that the subordinate will do after the counseling session to reach the agreed upon goal(s). The actions must be specific enough to modify or maintain the subordinate's behavior and include a specified time line for implementation and assessment (Part IV below)*

SM will sign this counseling with the understanding that his participation in this study is voluntary and may withdraw participation at any time before or after the study.

SM will contact the researcher should they have any questions or concerns.

SM will adhere to the customs and courtesies and all military policies during the course of this interview.

Session Closing: *(The leader summarizes the key points of the session and checks if the subordinate understands the plan of action. The subordinate agrees/disagrees and provides remarks if appropriate.)*

Individual counseled: ☐ I agree ☐ disagree with the information above.
Individual counseled remarks:

Signature of Individual Counseled: [redacted] Date: _____

Leader Responsibilities: *(Leader's responsibilities in implementing the plan of action.)*

Researcher will ensure that participant information is protected at all times.
Researcher will acknowledge the SMs request to withdraw participation or refuse to answer questions during the interview.
Researcher will also adhere to customs and courtesies, and all military policies during the course of this interview.

Signature of Counselor: [redacted] Date: _____

PART IV - ASSESSMENT OF THE PLAN OF ACTION

Assessment: *(Did the plan of action achieve the desired results? This section is completed by both the leader and the individual counseled and provides useful information for follow-up counseling.)*

Counselor: [redacted] Individual Counseled: [redacted] Date of Assessment: _____

Note: Both the counselor and the individual counseled should retain a record of the counseling.

APPENDIX B: INTERVIEW PROTOCOL

Demographics

1. How old are you?
2. What is your rank?
3. When did you attend AIT?
4. How long have you been in service as a combat medic?
5. Have you served under any other MOS? If so, when did you serve as a medic?

Semi-Structured Questions

1. Tell me about your typical day working in the clinic.
2. While working here, what skill/knowledge did you learn, but needed re-training?
3. What skill knowledge did you not learn in AIT, but was critical to your performance?
4. What skill knowledge did you feel was the most important while working?
5. How were you able to translate what you learned in AIT to the following?
    a. Performing a manual blood pressure
    b. Identifying abnormal vital signs
    c. Computer applications (CHCS, ALHTA, MEDPROS)
    d. Use of ADTMC

e. Performing injections

f. Phlebotomy

g. Identifying common illnesses

h. Identifying common injuries

i. Sterile technique

j. Identifying surgical instruments

k. Basic pharmacology

l. Administering intravenous fluid

APPENDIX C: TRIANGULATION MATRIX

MEDIC #_____

INTERVIEW QUESTION	INTERVIEW RESPONSES	DATA SOURCE

APPENDIX D: IN VIVO-THEME ANALYSIS MAXTRIX

MEDIC #_____

PHRASE	CODE	THEME