Phenomenology Of Blast-Induced Traumatic Brain Injury In Military Personnel

Roxana Enid Delgado

University of Texas at El Paso, rdelgado@siib.org

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PHENOMENOLOGY OF BLAST-INDUCED TRAUMATIC BRAIN INJURY
IN MILITARY PERSONNEL

ROXANA E. DELGADO MARTINEZ
Interdisciplinary Health Sciences

APPROVED:

Leslie Robbins, Ph.D., Chair
Bess Sirmon-Taylor, Ph.D.
Elias Provenzo-Vasquez, Ph.D.
Richard P. Petri, MD, COL US Army
Jules Simon, Ph.D.

Benjamin C. Flores, Ph.D.
Dean of the Graduate School
Dedication

This dissertation work would have not been possible without the support of family, friends and colleagues. First and foremost, I thank my Lord and Savior, the source of wisdom, my fortress and strength: to Him all the glory, honor and praise. I also thank my loving husband and the inspiration for this work, Sergeant First Class Retired, Victor L. Medina, Purple Heart recipient—the source of knowledge and the lens through which I saw the effect of traumatic brain injury on a Soldier’s life. It is you, Victor, who taught me that endurance comes with practice and passion, and that a calling cannot be successfully fulfilled without selflessness. Thank you for your sacrifices, commitment and dedication for our Freedom. I also dedicate this work to my father Jose Delgado and my mother Brunilda Martinez, my mentors and friends throughout all these years. You formed who I am; you taught me the value of living life with righteousness and integrity and to love others. Thirty years ago, you gave me the confidence that a girl needed to explore the World, to set high goals and expectations without forgetting that a dream is no more than a desire reached and materialized through efforts, faith and passion. Today, I dedicate this work to all these years of mentorship, love and support you have given me. This dissertation is the fruitful result of hard work and dedication, a calling bigger than me. Last but not least, this dedication would not be complete without recognizing our men and women in uniform: their selflessness, courage, sacrifices and commitment. For those who have fought foreign wars to preserve the Freedom we all enjoy, thank you. For those who have paid the ultimate price, you will not be forgotten, and to those paying a high price with a health that weakens with time, as I said to my husband after being wounded, “We will stand in front, behind and beside you in support and love.”

With Love,
Roxana
PHENOMENOLOGY OF BLAST-INDUCED TRAUMATIC BRAIN INJURY

IN MILITARY PERSONNEL

by

ROXANA E. DELGADO MARTINEZ, MS

DISSERTATION

Presented to the Faculty of the Graduate School of
The University of Texas at El Paso
in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

Interdisciplinary Health Sciences
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Phenomenology, as complex as it is, may cohabitate with other disciplines when embraced and supported by a philosopher. In this case, it was due to the valuable contribution of Dr. Jules Simon, a mentor in the areas of phenomenology and philosophy. Thank you for sharing the life-world of philosophy with me by providing the necessary tools for me to transcend from naïveté to a horizon of possibilities.

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To the courageous participants, thank you for opening the doors of your life-world and sharing the meaning of living with a traumatic brain injury. The essence of your experiences will contribute greatly to the scientific and medical community, as well as other Service Members like you. It was my pleasure to spent time listening to each of your stories, and I recognize the responsibility in front of me. I will always honor your sacrifices and the confidence that you have placed in me. With much dedication, I will make sure your message reaches many, knowing that it will impact their consciousness as you have impacted mine.

Warm Regards,

Roxana
Abstract

The annual incidence of traumatic brain injury (TBI) in the military population has continuously increased after a decade of wars in Iraq and Afghanistan. Brain injuries, as a result of an improvised explosive device (IED), are referred to as “blast-induced TBI.” Blast-induced TBI is the most common injury in the battlefield and recognized by the Department of Defense (DoD) as a “signature wound.” The aim of this study was to apply the principles of Husserl’s transcendental phenomenology to describe and understand the experiences of active duty Service Members (SMs) that have sustained a blast-induced TBI. Husserl’s phenomenological framework pursues the rich description of the phenomena, in this case, the meaning of a blast-induced TBI in a SM’s life. The severity of a brain injury varies from mild to severe; however, despite this classification, it does not characterize the postinjury residuals and comorbidities. This condition can potentially affect the well-being of the participant cognitively, physically and emotionally. To better describe and understand the potential impact of this injury in a SM’s life, this study applied the technique of face-to-face, individual interviews—with the purpose of gathering in-depth narrations from the participant’s own understanding of their experience. The data analysis was performed utilizing the methods for transcendental phenomenology proposed by Clark Moustakas (1994). The participants were all active duty military personnel between the ages of 18–45 years that were wounded during combat tour. Overall, the results demonstrated that sustaining a TBI was a physical, emotional, mental, social life-altering event. Living with TBI was described as frustrating and hard. However, the military Service Members practice their skills as Soldiers, and they fight with courage to get better and to become a person with a fulfilled life. This study explores and reveals new insights into the life of SMs living with blast-induced TBI.
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DISCLAIMER

“The views expressed in this document are those of the author(s) and do not reflect the official policy of William Beaumont Army Medical Center, the Department of the Army, or the United States Government”.

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Study Proposal

Aims of the Study

The Department of Defense’s Military Health System estimates that over 121,000 Soldiers have sustained a TBI since January 2000 (DeFraites, 2011). The aim of the proposed study is to describe and understand the experiences of military personnel after sustaining a blast-induced traumatic brain injury (TBI). What is the essence of the experience of sustaining a blast-induced traumatic brain injury? What is the meaning of the injury in their life? The Office of The Surgeon General (OTSG) of the Army established that TBIs are a priority for the Army (Casey & McHugh, 2011). Patients with TBI may experience what has been described as a “new normal.” The lingering effects of TBI can last for months to years, potentially impacting the day-to-day life of the Service Members (SMs). While the OTSG has made every effort to improve the mechanisms of diagnosis and care of SMs with TBI, this study utilizing qualitative inquiry may provide detailed information that can contribute in the improvement and development of new assessment tools and programs.

Altered consciousness after exposure to blast overpressure, though itself temporary, may be associated with persistent and sometimes debilitating symptoms. These can include headaches, dizziness, nausea and vomiting, difficulty in concentrating, difficulty in executive function, impulse control problems, anxiety, depression and changes in personality (Plurad, 2011). Concurrent injuries to the auditory system as a result of acute blast trauma and resultant TBI accounted for one-quarter of all injuries among Marines during Operation Iraqi Freedom. Through 2004, TBI was the most common single injury type. All these symptoms—and other
conditions like posttraumatic stress disorder (PTSD), stuttering, auditory processing disorder and hearing loss—can all be present as the result of the explosion and all associated factors during the event.

Blast-induced traumatic brain injury (TBI) in military personnel may affect the readiness and performance of the SM. Many times this also can translate to the career development, achievements and status in the military service. TBI may result in cognitive, physical and psychological impairments and also may affect the financial status and social interaction, sometimes yielding to loneliness and isolation. TBI is highly associated with suicide and other psychological comorbidities (Simpson & Tate, 2007; Wasserman et al., 2008). Re-experiencing symptoms of PTSD were significantly associated with an increased capability for suicide, a perceived burdensomeness, and a thwarted sense of belongingness in Soldiers who had a diagnosis of mild TBI secondary to a blast (Bryan & Anestis, 2011).

The complexity of TBI presents differently in each individual, with the result of variability of symptoms, comorbidities and prognosis. Understanding the lived experiences of SMs after sustaining the injury may provide insights into their perception of self and what the injury represents in their life, career and social interaction. The outcomes of this study may provide information that can help the scientific community understand the essence and meaning of being a SM living with TBI.

**Research strategy**

**BACKGROUND AND SIGNIFICANCE**

Over 73% of all US military casualties in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) are caused by explosive weaponry (Heltemes, Dougherty, MacGregor,
The exposure to these explosive devices may cause what has become one of the signature injuries of war, blast-induced traumatic brain injury (TBI). Blast-induced TBI is caused by a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain as the result of a blast produced by an explosion (Faul, Xu, Marlena, & Coronado, 2010). The severity of the injury can range from mild to severe, depending mainly on the alteration or loss of consciousness and/or posttraumatic amnesia. Injuries caused by improvised explosive devices (IEDs) result from blast wave-induced changes in atmospheric pressure (primary blast injury), objects from the blasts penetrating individuals (secondary blast injury), individuals being propelled from the blast (tertiary blast injury) and severe blast-related trauma resulting from significant blood loss (quaternary) (DVBIC, 2013). Little is known about the physiological and emotional effects of blast-induced TBI in a SM. Moreover, it is not clear how the progression of the lingering effects of the injury may impact the life of the SM in the military community. The significance of this proposed study lies in the understanding of the life of a SM after a TBI and the conceptualization of the “new normal” for them.

The annual incidence of TBI in the military has almost tripled in the past 10 years. As of the second quarter of 2011, approximately 220,430 SMs were suffering from a mild TBI (mTBI)—resulting in the most prevalent (77%) severity of SM (DVBIC, 2013). Currently, the military is facing challenges in the identification, diagnosis and treatment of TBI due to the complexity of the condition and the mechanism of the causality. Providers can be instrumental in the detection of mTBI and PTSD in returning combat soldiers. Accurate assessment and diagnosis is important during the acute stages as well as three months after the injury. The long-term effects of TBI are referred to as “postconcussive symptoms.” Many times, these symptoms remain unreported until after the redeployment. This delay presents a challenge for diagnosis and, consequently, a possible delay in treatment (Drake et al., 2010). These delay in diagnosis may alter the understanding of the condition and the perspective of the SM themselves if a sudden change in performance and productivity is experienced. Because of the element of
routine in a SM’s daily life during deployment, it is most often when this routine ends (that is, during the reintegration into society) that the SM may notice the symptoms of TBI.

More severe forms of TBI are more likely to provide significant symptoms that will facilitate the diagnosis of the condition. The screening and diagnosis of mTBI is more challenging, and this is one of the reasons that the Department of Defense designed metrics to screen SMs immediately after the event and later. These metrics by phase and time are the following (DVBIC, 2013; Jaffee et al., 2009; Terrio et al., 2009).

The associated comorbidities and the recurrence of brain injury can exacerbate the symptoms and lingering effects (Graham-Ashley, 2013). The complexity of TBI presents differently in each individual, resulting in various symptoms, comorbidities and prognosis. The challenge posed by the heterogeneity of this condition presents the opportunity for intellectual distillation. That is, the identification of higher-level details in the symptomatology of the condition is needed to recognize the unique characteristics of TBI in these patients. The delay in diagnosis also will represent a delay in treatment, potentially yielding to the misinterpretation of the symptoms by the SM and the medical provider.

The initial assessment of TBI requires an interview by a medical provider. It may be possible that, through the application of phenomenological inquiry, the information gathered will present itself in a more fruitful manner to accurately represent the condition. Suicide is one of the major associated outcomes of individuals that have sustained a TBI (Simpson & Tate, 2007; Wasserman, et al., 2008). SMs that have sustained a blast-induced TBI were exposed to a potential traumatic event, increasing the possibility of associated behavioral health issues. In addition, a TBI sustained as the result of a blast exhibits comorbidities and secondary trauma not typically experienced in other causes of TBI, like sports injuries or car accidents. The majority of mTBIs acquired during combat in current wars are closed brain injuries, exhibiting no physical signs (Okie, 2005; Warden, 2006). Similarly, the scientific community has limited understanding of the perception of TBI survivors and the potential impact that the TBI has on their lives.
Perception as the representation of TBI to the patient, from their position in a society where the condition is mostly absent.

Identification of TBI challenges diagnosis and accurate representation of the condition. The identification and diagnosis of TBI in the Armed Forces can be challenged by the geographical location of where the attack took place, the operational tempo (OPTEMPO) or mission and the report of symptoms. The nonapparent symptoms represent a challenge in the identification and diagnosis due to the lack of immediate care in cases where the injury was not visible. The symptoms of mTBI can be detected hours or days after the injury, and SMs are less likely to report these symptoms in a timely manner.

**INNOVATION**

The proposed study will provide information that will improve the understanding of the meaning of TBI in military personnel. “Meaning” is constituted as the relationship of the individual to their condition. In this case, the meaning pertains to the SMs’ relationship to their TBI and their position assumed in society, reflected by the use of significant language when describing their lives with TBI; it is the attribution and descriptive characteristics of TBI as apperceived by the participant, based on their self-representation of the condition. Applying transcendental phenomenology as the method of inquiry will establish a new methodological approach in understanding the phenomenon of TBI in Service Members. The population under study is unique in terms of culture and lifestyle and may not be representative of the general population, as civilian studies may not be applicable to military. The outcomes of this proposed study will be valuable to increase awareness based on the insights and perspective of the participants. Applying Husserlian style phenomenological analysis will provide the noematic description focused in what is directly given as narrated by the participants. The suspension or absence of the investigator’s biases and presuppositions (or epoché) during the analysis provides
a unique opportunity to identify key elements in the constitution of TBI in the participant’s life. The outcome of this process allows the medical community to increase and incorporate specific knowledge derived from the subjectivity or the first-person point of view; in this case, the accounts of the participants lived experiences with TBI. This increased knowledge may yield better assessments and diagnostic strategies when obtaining information for the construction of the medical framework of the condition. The data analysis, utilizing Husserl’s principles of phenomenology, may be a foundation for further exploration of concepts not only applicable to military personnel but to other unique populations.

**Approach**

**STUDY DESIGN**

The purpose of the proposed study is to describe and understand the experiences of military personnel after sustaining a blast-induced traumatic brain injury (TBI). This study will apply the method of inquiry of transcendental phenomenology; more specifically, it will make use of the philosophical framework established in the early twentieth century by Edmund Husserl (Zahavi, 2003). The goal of this study is to answer the question: “What is the meaning of a blast-induced traumatic brain injury in a Service Member’s life?” Identifying and describing “meaning” will be achieved by the subjectivity of the participant’s own experience, gathered during interviews. The contribution of characterizing TBI in the medical sciences may not only expand the possibility of enhancing diagnostic tools but also of building a path of scientific transcendence. Without question, the narrations and description of the participant’s lived experience will result in an objective outcome by which the interviewer’s suspension of presuppositions and biases allows the genuine presentation of the participant’s self-perception. These objective outcomes are accomplished by the intersubjective nature of the interview, setting
aside the interviewer’s natural attitude of the phenomena—referred to as bracketing or “epoché.” Moreover, practicing epoché or bracketing is a Husserlian method by which the interviewer will become more receptive and open to what is being said; in this case, the experience of TBI in a SM’s life. The objectivity and outcomes of this study are anticipated by the execution of the analysis process without an intervention of interpretation and theories, but by respecting the participant’s representation of what is constituted as a self-perception of the experience—giving opportunity for the “meaning” to emerge.

SAMPLE

The participants or key informants for this proposed study will be carefully selected from a military installation. Criterion purposeful sampling will be utilized to be able to identify active duty SMs with mild or moderate TBI that were sustained in combat. “Criterion sampling” is the selection of participants based on criteria that are common among them, with the goal of collecting rich data of particular phenomena (Creswell, 2007). The participants will be male and female active duty Service Members (SMs), 18-45 years of age, diagnosed with mild or moderate TBI within the past three years—self-reported as being caused by an explosion while in a combat zone. The presence of severe posttraumatic stress disorder (PTSD) could be seen as a barrier for data collection and analysis of the information. Severe PTSD may interfere with the quality of the interview and introduces a risk for the participant while narrating some of the events. Individuals with severe PTSD are more likely to relive the event in which he or she was wounded in combat, representing a higher risk for an adverse event during the data collection phase (Weiss, 1994). For these reasons, individuals with severe PTSD will be excluded from participation in the study.

Individuals interested in participating in the study need to be willing to discuss their stories and experiences after sustaining TBI. Participants’ sharing study information has been
reported in the literature and is referred to “snow ball” sampling. Potential participants interested
in the study may contact the investigators for further information. To ensure the individual meets
the inclusion criteria, a preliminary questionnaire will be administered to assess the status of
eligibility. This questionnaire will occur before the consent phase. This eligibility questionnaire
will not request or contain any Protected Health Information (PHI) or any other personal
information that may identify the individual. The proposed sample size will be of no more than
15 participants. In qualitative research, the sample size is not determined by power analysis but
by saturation. “Saturation” refers to the repetition of discovered information and confirmation of
previously collected data (Morse & Field, 1995). It is expected that saturation will be reached
with approximately 12 participants, based on the saturation reported in the literature in other
studies (Creswell, 2007; Giorgi, 1985; Mason, 2010).

**DATA COLLECTION**

Data collection will be achieved with face-to-face individual interviews. Individual, face-
to-face interviews are more appropriate for a phenomenological approach since the personal
experiences of participants is necessary to establish their individual experiences and analyze
them as a whole (Creswell, 2007; Moustakas, 1994). As suggested by Weiss et. al. (1994), the
setting of these interviews was considered based on the participant of interest and the type of
study. Hence, the interviews will take place in a private office, in a medical clinic specialized in
Integrative Pain Management Clinic (IPMC). Every effort will be made to maintain an office
environment that is free of strong smells, noises, a moderate room temperature, a comfortable
and spacious seating area, comfortable lighting (not too dark, not too bright) and a sense of
privacy. Appropriate lighting in the interview setting is important as individuals with TBI are
prone to headaches and may be sensitive to light. Also, smells and noises may be disruptive
during the interview as some TBI patients have developed sensitivities to various environments (Cernak & Noble-Haeusslein, 2010).

The individual interviews will be semi-structured, using open-ended questions, and audio recorded. The audio recording will be achieved utilizing two voice digital recorders with superior sound, convenient file management and a long recording time. Two recorders are convenient in minimizing data collection error, in case one of the recorders malfunctions. The day and time of the interviews will be at the convenience of the participant, Monday through Friday, between 0800 and 1500. The interview location and the time of each interview will be planned accordingly for security measures, liability and restrictions of the site. The in-depth interviews will be achieved in one session or various sessions, taking into consideration the health condition of the participants and will not exceed two hours in a single session. The potential of multiple sessions of interviews was determined to be more convenient because TBI is associated with fatigue, lack of concentration and cognitive impairments. Interviews that are too long could affect the content and reliability of the information (Helmick, 2010).

Factors that may directly affect the interview length and content were explored, with the goal of conducting a more successful data collection. Some of these factors included medical conditions, workload, emotional state and physical demand prior to the interview, among others. Despite other methods of data collection in qualitative research (observations, documents, audiovisual, etc), interviews will remain the only method that is used for this study. The first two interviews will serve as pilots to assess the content and flow. These factors were taken into account when determining the sample size. Performing a pilot test will provide the opportunity to modify and add probes based on new information deemed valuable for the aim of this study (Carlsson, Paterson, Scott-Findlay, Ehnfors, & Ehrenberg, 2007).
DATA ANALYSIS

The first step of the data analysis and the data preparation is the transcription of audiorecorded interviews. The transcripts will be completed based on transcription protocol that is designed to minimize the chances of obtaining incompatible transcript “products” and to reduce the likelihood that data analysis will be compromised or delayed (McLellan, MacQueen, & Neidig, 2003). As part of the transcription protocol, the recording will be edited to exclude any identifier that could compromise the confidentiality of the participant, and then it will be transcribed verbatim in its entirety. In military personnel, some language may be unique to them, including acronyms and other forms of verbal expression. To ensure that all transcripts are generated systematically, it will be required that transcripts include elisions, mispronunciations, slang, grammatical errors and nonverbal sounds. Rigor in qualitative research is associated with openness, scrupulous adherence to a philosophical perspective, thoroughness in collecting data and consideration of all the data management.

The protocol that will be followed for the data analysis is based on transcendental phenomenology or phenomenology of essences (Speziale & Carpenter, 2007a). The steps for analysis will include an in-depth description of the principal investigator’s experience with the phenomena. It is important that the investigator describe their own experience of the phenomena because this will help in setting aside biases or what Husserl calls a phase of “bracketing.” Also, as Husserl suggests in his philosophical foundations, a detailed description of the interviews will be provided, including a thorough narration that does not provide any idea and notion of meaning on part of the investigator. The description is not the interpretation of the stories but the description of the stories.

The data will be examined to identify common themes and extract significant statements in order to compile a set of themes based on the research question, leading to the creation of “meaning units” and textual description. To achieve this, the transcriptions will be read several times, and significant statements will be extracted for closer evaluation. The statements that are
similar in meaning will be grouped together, forming “meaning units.” Reflecting on the transcripts, the investigator will provide a textural description, which is a description of the participant’s experience with the phenomenon and includes verbatim examples. A more reflective description is the “structural description,” in which the investigator will describe how the experience happened. Finally, the synthesis of the textural and structural description will provide the composite for the “essence” of the experience.

**Rigor and Trustworthiness**

The reliability and validity of the study will consist of the various elements in the selection of individuals, data collection and analysis. Purposeful sampling will be used to select the individual for participation based on the particular knowledge of the phenomenon for the purpose of sharing that knowledge (Creswell, 2007). Criterion purposeful sampling has been reported as being the method of selection appropriate for phenomenology. In criterion purposeful sampling, the participant is selected based on specific criteria of interest, which is necessary to obtain the richness of the experience.

To ensure validity of interviews, some qualitative investigators use the technique of “member validation” or “member check,” in which the respondent is given a copy of the observations or interview to provide feedback (Sandelowski, 2008). The participants of interest in this study are SMs with TBI, meaning that they may present with various levels of cognitive issues, like memory and concentration problems. This could represent a risk in the integrity of the data due to the issue of memory, and this is the main reason that member check will not be used in this study. The information provided by the participants will be taken as it is given during the interview. The execution of the study will be recorded in the form of a log to include the chronology of research activities, including field work, data collection, transcriptions and analysis (i.e. coding and theme development). This detailed data management of research activities is referred to as an “audit trail,” providing rigor in the trustworthiness of the data and
execution of the study. Qualitative investigators are more likely to address validity throughout the data collection and analysis processes (Maxwell, 1992). In the methods section, the investigator detailed the various methods applied to the study that will ensure trustworthiness of the data collection and analysis, including the selection of individuals.

Protection of Human Subjects

HUMAN SUBJECTS INVOLVEMENT, CHARACTERISTICS AND DESIGN

The use of human participants in this study is necessary to be able to collect the data. The population of interest is male and female active duty SMs, 18-45 years of age, with a diagnosis of mild or moderate TBI. The individuals eligible for the study will be in good health, as defined by the World Health Organization (WHO, 2006). “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 2006). However, mild to severe cognitive impairments like concentration, memory and comprehension are associated with mild and moderate TBI; therefore, only those who presented with mild to moderate cognitive impairment but classified as highly functional will be deemed eligible to participate in the study. The demographics questionnaire also will be a good indicator of the level of understanding and capability to answer questions. Those who are unable to complete the demographics questionnaire will be excluded from the study.

The data collection is based on individual interviews in order to gather a rich description of the experience of Service Members (SMs) with blast-induced traumatic brain injury (TBI). These interviews will be semi-structured with open-ended questions. Interviews will be based on a detailed protocol, designed to ensure that key questions are addressed without exercising
excessive control over the respondent. Often, such questions generate rich personal narratives. Answers to such questions indicate the areas that are most important to respondents. Once a respondent completes an initial “grand tour” question, he or she will be asked “probes.” Standard probes, such as verification questions, will be used. These questions will provide more details about the topic being discussed and will generate lists of items. The principal investigator will follow well-established phenomenological procedures for conducting semi-structured interviews.

In order to achieve the purpose of this study, the participants need to be selected based on a specific set of characteristics. This type of sample selection in qualitative research is referred to as “purposeful sampling” (Creswell, 2007). Those who enrolled in the study will participate in an interview that can be achieved in one or more sessions at the participant’s convenience.

**CONSENT PROCESS**

Individuals interested in taking part of the study and meeting the eligibility criteria will be given a detailed explanation of the study. Because of cognitive problems associated with TBI (e.g., memory issues, judgment and concentration), the individuals interested in the study will be given a study information sheet containing the study title, information and point of contact (refer to Appendix A). Also, the investigator will provide a blank copy of the consent form for the individual to read at home. This strategy will be utilized because the population of interest is SMs with brain injury, which requires time for them to read and understand the consent form. We want to afford them the time and space to bring back any questions and/or concerns regarding their participation. The investigator will encourage the individual to take the study information sheet and consent form and discuss it with a person that they trust, and contact the investigator to schedule an appointment to consent to participate in the study.

When the individual schedules the follow-up appointment with the investigator, he or she will complete the consent form after the investigator answers any and all questions the
participant has. After the study is explained in its entirety by the investigator, the participant will be requested to sign the informed consent document (ICD), required as consent for participation. Once the consent form is completed onsite (prior to the interview), the investigator will proceed with the administration of the demographics questionnaire and the interview. The consent process will be conducted in person by the investigator, and no other military personnel will be present in order to avoid any implications associated with coercion.

**Sources of Materials**

Data collection in this study will consist of the narrated experiences of SMs with TBI. The main data material will be the audio recorded interviews. These recordings will exclude identifiers and the investigators will protect the privacy and confidentiality of the participant by editing any portion of the recording that contains an identifier. The recordings will be identified with a unique code specific to each participant. Other material of information will include transcripts and field notes. Field notes are a secondary data storage method in qualitative research. To maintain an accurate account of a study, field notes by the investigator are crucial in qualitative research (Roulston, 2010). The investigators in this study will be disciplined to record each interview as comprehensively as possible but without judgmental evaluation. Example questions will include, “What happened and what was involved?” “Who was involved?” “Where did the activities occur?” “Why did an incident take place and how did it actually happen?” The method followed in this study will be based on Moustakas (1994). Three types of field notes will be written:

1. Observational notes: “what happened?” notes deemed important enough to the investigator (i.e., “Was the interview interrupted by a phone call to the interviewee and for how long?”)
2. Philosophical notes: attempts to derive meaning as the investigator thinks or reflects on experiences (e.g., Husserl describes some of the philosophical components of the use of words “time” and “self”).

3. Methodological notes: reminders, instructions or critiques to oneself on the process (e.g., delete information on recording of participant #003 indicating the date and time specific when it was recorded).

Only the principal investigator will have access to the information of the identity and the unique code for the participants.

All the material containing study information will be kept in a secure location, encrypted and password protected. All the electronic material pertaining to the research will be password protected and secured with encryption. The de-identified personal information will be collected using a survey. This survey will have a unique identifier code listed on the page of the demographics information; however, the name and contact information will be collected on the first page. This first page will then be reformatted to an electronic form that only the investigator will have access to; the hard copy of this form will be destroyed.

**POTENTIAL RISKS**

It is anticipated that this study be classified as no greater than minimal risk. Some of the associated risks with this study may be breaches in privacy and confidentiality; however, these potential risks are unanticipated and unlikely to occur.

**Risks to participants**

Potential risks to participants are anticipated to be no greater than minimal. There are some potential risks that may be associated with the interviews that could trigger discomfort,
such as any question or topic that may be perceived as sensitive (e.g., related to health symptoms, combat exposure and/or relationships). The other potential risk is a breach of a participant’s privacy and data confidentiality. The use of name, e-mail and phone number will be strictly utilized for scheduling purposes. The name with contact information will be kept in a separate file, so the file linking the name and study ID will not contain the contact information. The link between the unique identifier and the name will be deleted after the data collection is completed for each participant. This information will not be used for the purpose of accessing medical or health information. All the information in this study will be obtained by self-report and not by accessing medical records. During the interview, the interviewer will request that participants abstain from mentioning specific information (e.g., names of his or her Command, spouses) and/or any other information that may identify them during the interview. In the case that the participant mentions such information, the interviewer will make a note of the recording time when the information was provided for editing purposes. This information will be deleted from the recording prior to be transcribed.

Personal identifiers or any information that can be linked or associated with any of the participants will not be disclosed. “Rank” will be collected as a categorical variable and will be treated as such during the analysis and dissemination. The findings of the study will be reported as aggregate information; this variable will be reported in a form of a category as part of the description of the sample of participants. The stratification of the ranks is based on the job tasks and positions. The categories in which “rank” will be reported (as part of aggregate data) will be the following:

1. PVT-SPC/CPL
2. SGT-SSG
3. SFC-CSM
4. CW1-5
5. 2LT-CPT
6. MAJ and above

These methods of privacy and confidentiality will ensure the protection of the information of the participants. The investigators also are aware of the rules and regulation regarding military research and the specific requirements for dissemination of information. The investigator will send all material intended for dissemination to the appropriate committees, i.e., the Institutional Review Board, Public Affairs Office and Readiness Office for Operational Security clearance.

Benefits to participants

The participants will not receive direct benefit as part of their participation in this study. The potential benefits of this study include the opportunity to contribute to the understanding of lived experiences of Service Members with traumatic brain injury. Direct compensation and benefit for participation are not allowed. The information and results of this study may significantly contribute to scientific knowledge in the area of TBI in military personnel. The purpose of qualitative studies is not to be generalizable but transferrable. Transferability refers to the likelihood that the study findings have meaning to others in similar situations (Speziale & Carpenter, 2007a). In other words, how likely is it that the findings of this study may be able to provide insights about the life of military personnel after sustaining a TBI?

Precautions to mitigate risks

The interviews will take place in a private office at a military treatment facility (MTF). Taking into consideration the nature of traumatic brain injury (TBI), every effort will be made to maintain an office environment that is: free of strong smells and noises, a moderate room
temperature, includes a comfortable and spacious seating area, provides comfortable lighting (not too dark, not too bright) and maintains a sense of privacy. Appropriate lighting in the interview setting is important, as individuals with TBI can be sensitive to light. Also, smells and noises can be disruptive during the interview, especially in TBI patients as they may have developed sensitivities to various environments (Cernak & Noble-Haeusslein, 2010). The interview will be conducted by the principal investigator of the study, a trained qualitative investigator with vast experience in qualitative studies in military settings and in military personnel. This study does not intend to include sensitive information; however, there may be times when the participant may narrate an experience that may affect the state of his or her wellbeing. If the participant exhibits signs of discomfort, it will be addressed and the participant will be offered the opportunity to consult with a medical provider. In the case that a participant feels uncomfortable and/or upset, he or she will be instructed to stop and they will be immediately referred to the appropriate medical provider. The IPMC has an onsite licensed clinical psychologist and a psychology technician. They both are available to all patients on a walk-in basis and also are available to receive referrals from this study. In the case that the SM expresses any suicide ideation, he or she will be referred to the Emergency Room in addition to being referred to the licensed clinical psychologist. The principal investigator has been trained in human participants’ protections and has experience conducting interview activities. In addition, the site principal and associate investigators will be available to address situations that may arise as a result of participation in this study.

The other potential risk is a breach of a participant’s privacy and data confidentiality. Privacy and confidentiality will be strictly maintained throughout the study. The team will keep all identifying information confidential and will not be shared with people outside the investigators. The 7-item demographic questionnaire will not include personal identifiers. The interviews will be conducted individually, and no personal information identification or PHI will be connected to this data. All data will be kept locked, and no citation will be made using
identifying information. Confidentiality of electronic data will be maintained during collection through the use of personal identification numbers (not linked to personal identifiers), such as the encryption of data, and will be password protected.

Extensive procedures and precautions will be used to minimize the risk of accidental disclosure of personal information, such as using a secure system for electronic data (encryption and password protected), shredding paper questionnaires after being transferred to an electronic file and using unique identification numbers on all data collection forms and audio files. The transcripts will be edited to delete any information that could identify the participant. We would prefer to have no link between any personal identification information and the study data; however, if the participant completes the interview in more than one session, then it will be difficult to monitor the participant’s number. The document containing the link between the name and the participant’s number will be kept as an e-file and password protected, and only the investigators will have access to this information (for scheduling purposes). The name with contact information will be kept in a separate file, so the file linking the name and study ID will not contain the contact information. The link between the unique identifier and the name will be deleted after the data collection is completed for each participant.

**Inclusion of Women and Minorities**

Women as well as minorities are eligible to participate in the study. Gender, race and ethnicity are not criteria for exclusion in this study. The purposeful sample will be based on the diagnosis of TBI. This study is characterized as being phenomenological, and it is not a clinical trial; thus, the number of participants will be significantly lower than a clinical trial. The lower number of participants provided is a factor that introduces challenges in the determination of the ratio.
Lived Experiences of Service Members That Sustained A Blast-Induced Traumatic Brain Injury: A Phenomenology

Abstract

Blast-induced traumatic brain injury (TBI) in military personnel may have long-lasting physical, emotional and sociocultural effects. The experiences of living with TBI as a military Service Member wounded during combat operations is not well understood. In this article, we intend to describe the lived experiences of sustaining a TBI and the impact of the injury. The method of inquiry that we selected was transcendental phenomenology, applying Edmund Husserl’s principles for the data analysis. The participants were all active duty military personnel, between the ages of 18-45 years old, that were wounded during combat. The findings demonstrated that sustaining a TBI was a physical, emotional, mental and social life-altering event. Living with TBI was described as frustrating and hard. However, the military Service Members practice their skills as Soldiers, and they fight with courage to get better and to become an individual with a fulfilled life. This study explores and reveals new insights into the life of a SM living with blast-induced TBI.

Key Words: Military; traumatic brain injury; combat wounded; self-perception; phenomenology; Edmund Husserl.
Background

During the past decade, the United States (US) Armed Forces have been engaged in two military conflicts: Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Throughout OIF and OEF, explosive devices have become more powerful, their detonation systems more creative, and their effects more devastating. According to the Department of Defense “Personnel & Procurement Statistics,” over 73% of all US military casualties in OIF and OEF are caused by explosive weaponry (Defense Manpower Data Center, 2008). Injuries caused by improvised explosive devices (IEDs) result from blast wave-induced changes in atmospheric pressure (primary blast injury), objects from the blasts penetrating individuals (secondary blast injury), individuals being propelled from the blast (tertiary blast injury) and significant blood loss (quaternary) (DVBIC, 2013). The exposure to these explosive devices may cause what has become one of the signature wounds of war, blast-induced traumatic brain injury (TBI). Blast-induced TBI is caused by a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain as a result of the blast produced by an explosion (Faul, et al., 2010). The severity of the injury can range from mild to severe depending mainly on the alteration or loss of consciousness and the posttraumatic amnesia. In the military, the annual incidence of TBI has almost tripled in the past 10 years. The number of SMs with TBI as of the second quarter of 2013 was 280,734, making mild (mTBI) the most prevalent (82%) of SM injuries (DVBIC, 2013) characterized mainly by a closed head injury (Okie, 2005; Warden, 2006). The Army is the service branch with the highest prevalence of brain injuries in the military (58%) and the highest annual incidence, with 63 per 100 cases of TBI in the Department of Defense (DoD). Currently, the military is facing challenges in the identification, diagnosis and treatment of TBI due to the complexity of the condition and the mechanism of the causality. Several factors are responsible for the heterogeneity of symptoms and effects of TBI in military personnel. Also, the lack of understanding from the medical community, due to the complex mechanism of the injury, posed
a challenge for military leaders. Today, various treatment facilities are available to better identify and treat this signature wound of war.

Brain injury associated comorbidities and history of previous exposures can exacerbate the symptoms and lingering effects (Graham-Ashley, 2013). The complexity of TBI presents differently in each individual, creating heterogeneous symptoms, comorbidities and prognoses. The delay in diagnosis leads to a delay in treatment, potentially yielding to the misinterpretation of the symptoms by the SMs and medical providers. Suicide is one of the major outcomes associated with individuals that have sustained a TBI (Simpson & Tate, 2007; Wasserman, et al., 2008). SMs having sustained a blast-induced TBI were exposed to a traumatic event, potentially increasing the presence of associated behavioral health issues. In addition, a TBI sustained as the result of a blast exhibits comorbidities and secondary trauma not typically experienced in other causes of TBI, e.g., sports injuries or car accidents. Challenges associated with identifying TBI impede the diagnosis and accurate representation of the condition. The identification and diagnosis of TBI in the Armed Forces can face challenges by the geographical location where the event took place, the operational tempo (OPTEMPO) or mission and report of symptoms. The nonapparent symptoms may delay the identification and diagnosis due to the lack of immediate care in cases where the injury was not visible. The symptoms of mild TBI can be detected hours or days after the injury, and SMs are less likely to report these symptoms in a timely manner. The long-term effects of TBI, referred to as “postconcussive symptoms,” may exacerbate with time and produce a debilitating effect in the individual. Many times, these symptoms remain unreported until after the redeployment. This delay presents a challenge for diagnosis and, consequently, a possible delay in treatment (Drake, et al., 2010).

This article is based on work accomplished for a dissertation, the purpose of which was to provide a qualitative method to more accurately describe and better understand the experiences of military personnel after sustaining a blast-induced traumatic brain injury (TBI). We provide a perspective of the “life world” experiences of military personnel with TBI, using the
philosophical principles of Edmund Husserl. What we mean by “life world” is the tangible, everyday world as experienced by the participant in their natural attitude, taking into consideration the participant’s past experiences (i.e., the traumatic event that led to the TBI) and the influence of that experience in their present and future state of affairs. It is a world of intentional acts and one that is constantly transcending in response to the activities and habitualities. We applied the inquiry of transcendental phenomenology to explain the mechanism of the experience of living with TBI as an active duty Service Member. In an effort to describe the meaning and essence of the condition, I explored the perception of “self” and the accounts of the variation in the SMs’ physical, emotional and sociocultural responses to their “new life” versus their life before the TBI. Being a member of the military means being in a position with unique demands and responsibilities, part of an “elite group,” something that could be experienced it is now transcending to a new “state of affairs.” In this article, we describe the voices of those affected by the trauma and provide an insider’s phenomenological perspective on the process through which a person with a TBI develops awareness of their difficulties.

Methods

Study Design

The study applied a transcendental phenomenology inquiry to describe the lived experiences of the “life world” of the participants that sustained a blast-induced TBI during deployment. Philosopher Edmund Husserl (1859-1938), father of transcendental phenomenology, established a set of paradigms focusing on phenomenology as a method. The analysis of the narratives in this study applied the principles of transcendental phenomenology, with the addition of some aspects of Maurice Merleau-Ponty’s phenomenology of perception.
ETHICAL CONSIDERATIONS

In human participant research, military personnel are recognized by the DoD as a vulnerable population. In the planning stages of this study, the investigator consulted the DoD Instructions document (Kendall, 2011) for human participant ethics and protection of SM. The population of interest for this study is even more vulnerable due to their status of Wounded Warriors and specifically the medical condition under study, TBI. The execution of the study followed all the precautions to ensure the safety, protections and fair treatment of the participants—especially in terms of recruitment and enrollment as well as confidentiality as per section 7.3.e.1c of the DoD Instructions on human research protections. Also, the investigator ensured the study under qualitative category, following directives and recommendations reported in the literature (Speziale & Carpenter, 2007b).

PARTICIPANTS

The participants or key informants were active duty military personnel that sustained a TBI during OIF/OEF combat operations. Despite all of them being wounded during combat operations, only 2 had received a Purple Heart and the others were in the process of reevaluation to receive this combat medal. The five participants were male; the youngest was 21 years old and the oldest was 42. Table 1 provides a description, which includes their age, race, marital status and years of military service. All of the participants had at least one combat deployment serving in military occupational specialties (MOS) of combat arms or combat support (infantry, military police, scout and logistics). They all had jobs that required intense training. During deployment, they were mostly outside the Forward Operating Base (FOB) or more commonly known as “outside the wire.” The participants are currently stationed at a military installation in the Southwest.

At the time of the study, all participants were in the chronic stage of the injury. The participants reported receiving therapy from medical providers in the areas of speech and
language pathology, occupational therapy, physical therapy, behavioral therapy and neurology. The medical providers located at the military hospital treated symptoms associated to TBI, as reported by the participants. These symptoms included debilitating headaches, memory issues, balance problems, dizziness, concentration problems and stuttering. In addition to the interventions provided by the medical personnel, all of the participants described the use of medications, mostly for sleeping issues and chronic pain.

Table 1. Characteristics of Participants

<table>
<thead>
<tr>
<th>Age</th>
<th>Race</th>
<th>Marital Status</th>
<th>Time in the Military</th>
<th>Number of Deployments</th>
<th>Rank(^1)</th>
<th>TBI Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Caucasian</td>
<td>Single</td>
<td>3 Years</td>
<td>1</td>
<td>PVT-SPC</td>
<td>Moderate</td>
</tr>
<tr>
<td>34</td>
<td>Hispanic</td>
<td>Married</td>
<td>11 Years/11 months</td>
<td>3</td>
<td>SGT-SSG</td>
<td>Moderate</td>
</tr>
<tr>
<td>27</td>
<td>Hispanic</td>
<td>Single</td>
<td>5 Years/1 month</td>
<td>1</td>
<td>PVT-SPC</td>
<td>Mild</td>
</tr>
<tr>
<td>42</td>
<td>Caucasian</td>
<td>Married</td>
<td>18 Years</td>
<td>5</td>
<td>SGT-SSG</td>
<td>Moderate</td>
</tr>
<tr>
<td>30</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>11 Years</td>
<td>3</td>
<td>SGT-SSG</td>
<td>Mild</td>
</tr>
</tbody>
</table>

\(^1\) Rank is reported as a category to protect the confidentiality of the participants.

**DATA COLLECTION AND SETTING**

This study took place in a Military Treatment Facility (MTF) assigned to a military installation located in the Army Western Region. This article was approved by the Department of the Army regulatory agencies, including the local Institutional Review Board (IRB), Clinical
Investigation Regulatory Office (CIRO) and Human Research Protection Office (HRPO). The recruitment of the participants was achieved mainly by two methods: criterion purposeful sampling and snowball sampling (Creswell, 2007). Some participants were referred by a medical provider and others by word of mouth from other Soldiers that knew about the study. The enrollment included a screening questionnaire to ensure that the participants met the inclusion criteria. Individuals with severe PTSD were excluded from the study since the narratives could have triggered or exacerbated their emotional state. Also, individuals that sustained a severe, open head injury or those that were not able to consent due to severe cognitive impairments were excluded from the study.

The data collection was conducted in semi-structured, face-to-face, individual interviews that lasted up to 1.5 hours. These interviews were audiorecorded, and they took place in a private office in a clinical setting within the military installation. Every effort was made to maintain an office environment that was: free of strong smells and noises, had a moderate room temperature, provided a comfortable and spacious seating area, maintained comfortable lighting (not too dark, not too bright) and provided a sense of privacy. Appropriate lighting in the interview setting was important since individuals with TBI may be sensitive to light and prone to headaches. Also, smells and noises can be disruptive for TBI patients since they tend to develop sensitivities to various environments (Cernak & Noble-Haeusslein, 2010).

The interviews were anticipated to be in-depth, and the participants were offered the option of various sessions if it was appropriate for their medical condition. TBI is associated with fatigue, lack of concentration and cognitive impairments; these factors can affect the content and trustworthiness of the information (Helmick, 2010). Medical conditions, workload, emotional state, and physical demands were some factors that were taken into consideration prior to the interview. In other words, the interviewer was excessively cautious and invested in ensuring the accurate representation of the participant’s “life world.” The absolute representation of each life
world is faced by challenges that account for the variability of positions, envisioned by the participant; the result of the constant exploration of possibilities.

Once the interviews were completed, they were transcribed verbatim. To ensure that all transcripts were generated systematically, the transcripts included elisions, mispronunciations, slang, grammatical errors and nonverbal sounds. The use of field notes facilitated the description of each interview and the experience during the interview session. The interviews were conducted by the principal investigator: a well-trained investigator experienced both in conducting interviews for qualitative studies and in military research. The principal investigator also attended four summer qualitative research training courses with Margarete Sandelowski at the University of North Carolina at Chapel Hill.

**DATA ANALYSIS**

This study applied a phenomenological inquiry to describe the lived experiences of TBI in military personnel. The data analysis was conducted based on the philosophical principles of Edmund Husserl, starting with a detailed description of the investigator’s experience—setting aside biases and presuppositions, or what Husserl refers to *epoché* or a phase of “bracketing.” *Epoché* was practiced by the investigator by reflecting on past experiences and narrating her own experiences of her husband, a Soldier with moderate TBI. By narrating the biases and preconception of the TBI and describing what she believed was the impact in a SM life, she was able to suspend certain judgments and belief components related to her own experience (Moran & Cohen, 2012).

The first step of the analysis, after practicing *epoché*, is immersion—getting to know the data or the accounts of the participants. The interviews were revisited several times, using the transcriptions and audio files, to be able to listen to and get familiarized with the narratives (i.e., what was told, the way the stories were told). The author developed an in-depth description of
each of the interviews, focusing on the content in an attempt to be as free of any personal interpretation as possible. This description included the information provided by the participant in a more condensed manner, without disregarding any information that was provided. After describing each participant’s experience, a list of units or common ideas of relevant meaning were extracted from each interview and carefully analyzed. After the first layer of analysis, the investigator proceeded to develop a cluster of themes by grouping conceptually similar ideas into units of meaning, (Creswell, 2007; Moustakas, 1994). The interviews were examined to identify common themes, extracting significant statements in order to compile these themes that were common among the participants. The “meaning units” and textual descriptions are comprised of the themes that were created from the careful analysis of the interviews. We explored the themes common to most or all of the interviews as well as the individual variations. The synthesis of this textual and structural description provided the composite for the “essence” of the experience.

Findings

Overall, the participants were in a good mood during the interview. They were motivated, engaged and wanted to share as much as they could. Some of them offered to provide more information and to return if necessary. All of the participants were eager to tell their stories and experiences.

The participants of this study acquired a blast-induced TBI as the consequence of an explosion during a combat tour in response to the wars Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF). The injury occurred within the last 3 years. Since the injury occurred, a series of events have transformed their career, family, social interaction and concept of self. The analysis of the study is purely transcendental phenomenology for which the findings are not the result of interpretations but of the narratives provided by the participants: descriptions of their lived experience after sustaining the injury.
Life before their TBI seemed to be the typical life of a Soldier, with trainings and practices—always prepared to go to the battlefield. All the participants described the pride of being a Soldier. The hours of training and responsibilities, duties and tasks were not viewed as a burden but as an honor. While remembering the old self and narrating what their life used to be, there were empty stares at the floor or the ceiling, there were smirks of frustration and sadness, but there also were smiles when recalling anecdotes of friends and comrades. During the interviews, the pleasantness of the participants’ tones and emotions while recreating certain events were not fully captured in the audio recording but in the field notes written by the investigator. The use of slangs, military vocabulary and even unique language were evident and experienced during the interviews.

A common description of the beginnings and initial experiences after sustaining a TBI included feelings of isolation and sadness, knowing that something was wrong but unable to accept it. This isolation and lack of acceptance played a big role in the beginning of the injury, when they were trying to understand the situation that they were facing. All of the participants reported trying to get through the day and the mission without expressing or demonstrating their symptoms and post effects of the explosion, something they all regret. When redeploying, all participants reported an exacerbation of symptoms, headaches and memory issues being the two most uncomfortable and unbearable. One of the participants described the redeployment as follows: “Slowing down that fast, I think that just my body went in shock and then all the symptoms crashed. They crashed into me and they hit me really, really hard.”

In their quest to reintegrate to the normality that they once experienced before deployment, some participants sought family support while others felt more comfortable with peers that could relate to the injury. Daily activities, from taking care of themselves (e.g., hygiene, medical appointments) to career and social activities are challenged by impairments that are uncontrollable and that are still questioned. “Slowing down” is a common perception of the impact that TBI has had in their life. Simple tasks that were easy before the TBI, now take a
prolonged period of time to complete. The need to start the day with extra time to get ready, free of stress, was important to be able to function throughout the day. They described their life as being in “slow motion,” seeing things from a position of uncertainty and expectation. Frustration was experienced when trying to reach a goal and knowing that now it will take longer and will require more effort, when before tasks and goals were accomplished if they just put their heart to it. Remembering who they were has been challenging and difficult for them to get to know their “new selves.” Their new self is one that incorporates cohabitating conditions like PTSD and depression, and they have to learn to live within the space of their environments.

Participants reported various coping mechanisms; they transformed from isolating and detaching (in the initial stages of the injury) to practicing hobbies and slowly getting back to doing the things that they once enjoyed. Practicing hobbies were catalyzers in the homeostatic process of the participants’ mind and body. These hobbies—such as playing an instrument, smoking cigars, or working out in the gym—were perceived as helpful to their well-being. These hobbies formed an integral part of their past and are still part of them in the present, some of them transcending to their future.

TBI symptoms (coupled with PTSD and depression) have been challenging, but the major difficulties are the physical symptoms like headaches and impaired cognitive abilities. Headaches and/or memory loss affects their ability to get through a day. These symptoms were mentioned several times as hindering the participants’ emotional health and profoundly impacting their sense of well-being. Emptiness, loneliness, frustration and uncertainty were described as the initial result of the injury, but they remained hopeful. SMs come from a culture of “fighting” for what you want and keeping a positive attitude. Knowing that they are not alone, knowing that other Soldiers can relate to them—this brings a sense of comfort.

Description of TBI and attributing physical, cognitive and emotional symptoms that made living with the injury a challenging and frustrating event in their daily lives.
Memory issues, debilitating headaches, sleep problems, balance problems, lack of concentration, inability to focus and irritability were common existing characteristics attributed to the TBI. Using military training techniques (e.g., developing a routine, practicing compensatory strategies, being able to predict, being equipped and prepared) were described as tools the participants used to manage their TBI. The participants described hygiene problems due to memory issues, so learned habits included mindfulness in the various hygiene activities. In one of the instances, a participant described how he had to taste the toothpaste to be able to remember if he brushed his teeth. Another participant noted that he would forget if he took a shower. In addition, even if he did shower, he would forget if he had used the soap, so he constantly believes he has to shower several times throughout the day. Similar anecdotes were narrated for eating patterns, i.e., forgetting to eat or eating excessively. Leaving necessary life tools (e.g., cell phones, keys, wallets, uniform additives, other important items) in the same place every evening became part of a new routine as this helped the participants keep track of the items. The intentional act of consciously remembering by practicing a habit was associated by the quality of success of that intentional act. Despite the difficulties of experiencing a “normal” life, the participants exhibited unique skills inherited from military culture: not giving up easily without fighting to get better, for them and for others around them.

*It’s like a golf handicap. Just because you have a handicap doesn’t mean you can’t golf, but that doesn’t mean you can golf as good as say the three people next to you. So, in the end you will get it done but it might take you a little bit longer and you might need a little bit of help along the way it’s just-well, things were-it doesn’t stop your life. I mean, you keep on living regardless. It just makes it so that you have to think about your day a little bit more. I mean, most people, they get up and it’s no problem; you’re good to go. But it’s, I mean, as you probably experienced yourself, it takes a little bit more planning and forethought, otherwise you’re going to find yourself frustrated really easily and not able to be flexible or adapt to changes, and that’s really going to lead to you hampering yourself by not preparing yourself to-to deal with the day. I mean, I don’t know, it’s one of those things where I’ve-I’ve lived with this for almost two years now.*
One of the participants perceived himself as a proactive person, a quality of successful approach to envisioning the possibilities of healing and improving the condition. Other participants expressed this type of motivation, the idea of the never considering stopping or not striving to succeed and get better.

*I’ve gotten lucky myself that I’m really proactive, so I think that’s the thing that actually helped me, you know, me getting better. I guess it’s going to take a while, but I know I’m going to be able to accomplish it.*

*I mean I think eventually I would get better, but I'll never be the way that I was. I realize this. I know this. I’m okay with it, but I always try and improve myself. And when you’re doing good for so much and then all of a sudden [snaps] something screws up, like you forget something, it’s like an avalanche.*

Despite the idea of “getting better” being a possibility and almost a present unfulfilled reality, the self-awareness of time is always constant throughout the interviews. Making reference and associating healing with time was evident with all the participants.

Essence: Living with TBI presents challenges and immanent frustrations. Normality as it was known is part of a past self.

**Drawing the line between TBI and Posttraumatic Stress Disorder (PTSD)**

The use of detail descriptions to assign unique characteristics to the various symptoms associated with TBI and PTSD was very well defined. The participants attributed the cognitive and physical symptoms to the TBI and the behavioral characteristics to PTSD. Some of the characteristics of TBI as described by the participants were the memory issues, speech problems like stuttering, fatigue, difficulties with concentration, sleep issues, dizziness, balance problems, irritability and headaches. The PTSD was characterized by having problems with crowds and hyper vigilance. Having a headache was described as “the worst enemy you have during the day,” adding to the description of TBI as exhausting.

Essence: The coexistence of two different conditions that share a common space within the body, distinctively separated by the unique characteristics that each one possesses.
PTSD, there’s things that I'm struggling with—namely crowds and people behind me. I just get that nervous feeling. People within my space.

Some participants referred to dealing with PTSD as a practicing coping mechanism to dealing with the condition, one that is learned through behavioral rehabilitation and counseling. For TBI, strategies seemed to be the skills development ability in which they learned how to manage the injury’s associated symptoms. Speech therapists and occupational therapists were mostly mentioned as the guidance and source of information to learn strategies for dealing with TBI.

Trying to learn coping mechanisms with my PTSD and strategies with my TBI, how I keep track of things, learning. I’m learning, like with my speech therapist, learning to remember things. I feel like I’m in grade school and it changes your life, your—in a way that you don’t think it will change, but when your brain, your short-term memory is damaged and you try to remember things and you can’t, then you have to rebuild.

I’ve heard about veterans that still something will trigger their PTSD but they don’t let it control their lives and that's something I’m working on, continually working on every day. Even with the TBI, it's more of the communication, forgetful, you know, forgetting, repeating.

Essence: Two internal injuries apperceive from a manifold of positions and are intentionally characterized by the source of medical treatment.

“Fake it ‘til you make it” attitude.

In the absence of an attribute, these participants pursue a goal; they are persistent, convincing themselves that they can reach that goal. The state of affairs at that moment is precluded by the presence of a desire that, in the absence of reality, proclaims a virtue that has not yet been given but that is waited upon. These participants explored ways to use defense mechanisms unique to Soldiers to be able to see a world of possibilities. Hope remains as the ultimate expectation that everything will be better. There is acceptance of the existence of the injury, coupled with other wounds like PTSD. However, it is clear there is a desire to succeed, to thrive, to move on and experience fulfillment.
It took a lot of time just thinking about all the shit that happened and just realizing that I really don’t want that and if I want to be happy then, uh-uh-we-we-we kind of have a saying in the Army of “fake it ‘til you make it.” So, if you pretend you’re happy but you’re taking steps, and that’s that’s the key thing, you’re actually taking steps to be happy, you’ll probably end up happier than just acting miserable and not doing anything to correct that.

As soon as your adrenaline stops rushing down, you get that night of sleep and the next day that’s where everything kicks in, and you start noticing, you know, and then after noticing it, the next step to actually notice that there’s stuff wrong with you is acceptance. You don’t want to think that there’s anything wrong with you, so you don’t even notice that there’s so much shit wrong with you, you know, at that point in time, which is the stuff that I just said, you know, balance, headaches, dizziness, ringing to the ears, you know, but you’re so focused in getting back on mission that you don’t think that you’re okay. No, I’m good. I’m good. I’m good. I’m just going to move back, but the reality is that, you know, at least from my experience, you’re not okay, you know.

You’re not, I’m not the only one and I knew I wasn’t the only one but some people don’t know if they’re the only one. They can reach out and there’s hope. And it’s hard to see the light at the end of the tunnel.

Essence: The present unfulfillment is fulfilled by the forceful practicing of a task in order to achieve or become something that is not yet real. The conscious act of doing something to achieve a state of fulfillment and the possibility of becoming that that is not yet accomplished.

Using an imaginary toolbox to deal with a real injury.

Compensatory strategies facilitated by the use of technological resources are invariably dependence for these participants. They rely on their cell phones and electronic agendas to meet appointments, pay bills and remember birthdays, among other things. The injury feels real, with symptoms that are coming from the body and the mind. They are living with a brain and a memory that is “damaged,” as described by the participants. They rely on the skills that made them survive in the military and new skills learned from therapists, especially speech therapists. The invisible wound of war, as described by the DoD, wasn’t invisible for these participants.
They described each and every detail of the symptoms they experience on a daily basis. They are mindful in practicing and forcing themselves to use games, electronic applications and other activities to help “keep [their] brain, or the wires that were destroyed or were disconnected.” Discussing the injury with peers was more comfortable for the participants than with anyone else because of the experiences they all shared and the understanding they have of each other’s condition.

*It’s hard and that I wouldn’t like—I would tell them, “Hey, this isn’t anything that you’re going to experience and that you’re going to have a lot of challenges and a lot of work and a lot of homework that’s for yourself as a person, you know, but that it’s not impossible, you know? You have a condition like any other people, you know? It’s like having asthma. You’ve got to carry around with your inhaler. You know, you have a TBI. You’ve got to carry around with this imaginary tool box of tools that you need to know how to use—breathing, keeping calm, being really positive, you know, it’s going to get better. It’s going to get better. It gets better. It takes a while. That’s the hardest part for a soldier, accepting that it’s going to get better because we’re trained to get shit done so fast and wanting to get back on the fight so fast that, you know, it’s hard, but it gets better. It gets better. It just becomes kind of like—we joke about it, you know, because it’s so real for us that we just have to.*

*You brought it home with you,* and like yeah, I did, but you survived—you know, I’ve survived three tours without a physical scratch. I didn’t lose a limb or an eye. I probably lost some hearing. But I am injured on the inside and you know.

**Essence:** The intentional use of technology and resources that will connect the person they once were to the new self.

**Career at the crossroads or detoured in a new direction, sometimes placed on the backburner.**

Mission comes first for SMs, so when the injury occurred— it happened in the battlefield, under circumstances the participants felt they could not abandon. It is during that moment that, once again, these participants became selfless, looking out for their comrades, the mission, the Army they love. Disregarding and avoiding recognizing or accepting the symptoms that started visiting their body, they pretended, they forced and they fought to be okay. They felt something
was wrong, but they decided to continue fulfilling the duties of a Soldier. One of the participants was reassigned to new duties during deployment, making him feel he was abandoning his real mission. For most of them, it was during redeployment, once at home, that all the physical, mental and emotional anguish started to take a toll.

The military career is coming to an end. They are all part of a group of Wounded Warriors that are undergoing a medical discharge. It is something they accepted and expected, but it wasn’t the original plan. This direction brings some uncertainties; the future is unknown. The things they were able to accomplish are now challenging, and the position of being a Soldier is no longer possible to fulfill. The expectation of a “new path,” of an ultimate state of well-being, where family is a priority, is in some way comforting. Leaving behind their old self is challenging, at times, but there are no regrets: “better me having that happen to me than someone else.” All the participants expressed a sense of pride for what they did, all having combat experience and military occupational specialties (MOS) that kept them outside the wire (outside the post during combat tours) as part of their mission. The inability to fulfill the duties required to be a Soldier are now placing the military career on hold but with the expectation of going back to school, being closer to family, being able to open businesses related to their hobbies or serving the TBI community.

I was a good, squared-away soldier and then after I got injured, I mean, my career kind of got put on the backburner.

I want to know more about how the body works, why it works the way it does and, hopefully, in the future be able to not work only with soldiers and patients that have these disabilities, but with civilians as well, you know?

Not having to wake up and put this uniform on. Don’t get me wrong, I love it to death. I love what I’ve done and the people that I’ve served with, but physically and mentally I cannot do it anymore. It’s very difficult for me to function properly. I mean now I’m a liability instead of an asset, if that makes sense. I can’t wear the same gear. I can’t pick up things the same.

Essence: A world of possibilities and horizontal directions not yet defined or anticipated.
A sense of loss and detachment from the person they once were.

In the participant’s perceptual eyes, what happened to them has no logical explanation. They apperceive a loss of self, missing a limb or an eye would have been more real, but losing something that cannot be touch or seen seems have an impact in how they rate themselves. They are aware of losing a connection, the path between who they were and their positioning today. Their state of being is “like an empty space that like you, like you, um, like you can’t, uh, f-fill so, so, so then like you just, uh, or like, like I said, in, in the service I just compensate but and, and like, uh, every day like home life, well, like with, with my family is like, uh, that space is big and it’s overwhelming.” The participants felt that they lost many things but they emphasized missing their well-being, their ability to function as a Soldier, more than anything else. Aspects like physical training tests, being able to carry the gear and being able to support their leaders were essential characteristics of a Soldier that these participants felt they lost and missed the most.

*I was always a, what do we call it, “PT stud,” you know. I was always working out and then my scores were always in the 270s, you know, or 260s, which is pretty high. My last PT test in Afghanistan was great. I almost caught it in 13 minutes, 50 seconds on my run and that, for me, that was super fast, you know? I always was in the lower 14s and when I got over here, you know, I couldn’t run. Without my brain, you just get exhausted. I couldn’t do it anymore.*

The participants’ physical, emotional and mental capacity is questioned by them. Their sense of feeling strong and well is no longer in them. Some left their old self behind, even forgetting who they were, since the new self is the reality and is what they are getting accustomed to.

*I mean, I don’t know, it’s one of those things where I’ve-I’ve lived with this for almost two years now. I mean, you-you just-it becomes the norm and it’s hard to remember a time when it wasn’t like this. I mean, I know I wasn’t like this before the blast but I can’t remember in details well, what was life like before this. I mean, it’s like-it’s like life before joining the military. I mean, you have a v-vague
memory of well, it was kind of like this but you really don’t know because that’s not your norm anymore; that’s not what you’re dealing with. So, it’s-I think you just kind of naturally adapt and forget about how life was like before just to-kind of as a coping mechanism.

You know that you’re not a hundred percent as you used to be before and it’s just pretty obvious, you know? Insomnia. I can’t sleep. You feel all the time and I have to be vigilant, you know, so PTSD goes into it, you know, and you get back from all that environment and then having a TBI, it’s like putting a block on top of a block on top of a block that you already have on your shoulders and you’ve got to walk with all this burden, you know?

I’ve had-you go through a blast you’re probably going to have some sort of TBI, whether it’s mild or moderate or whatever, you-you’re not walking away from that the exact same person you were before the blast.

I was in a funk, just like a general, like lost in the sauce kind of-not-not the best place to be. Memory-wise, emotionally, I mean, I was-I was probably one of those cases where I should have been, uh, considered a high-risk soldier just because of the type of injury and where I was at.

Essence: Transcendence to a new self by the imminent loss of the old self and all that once was in the natural attitude.

Being involved in a blast, being wounded was expected, anticipated, and accepted; the outcomes not so much.

This experiencing of symptoms that are mostly described in a physical emotional and mental aspect, are daily companions that are as present as their own life. The participants were part of military occupation specialties (MOS) that placed them at risk of being wounded during combat. Their MOS were on high demand of being on patrol, “outside the wire,” exposed and at risk. These participants expressed their past knowledge of accepting the possibility of being wounded. It was expected, it was well received, but what they didn’t envision or consider were the outcomes of such an event. In the military, being wounded brings a certain aspect of pride because it means it happened to them and not their comrade; however, they never envisioned the possibility of the changes that would bring. With pride and enthusiasm, these participants
narrated the accounts and the stories of their duties, what their job entailed in terms of risk and the fulfillment of a duty they loved. They all recognized their risks, but it didn’t seem to be essential to them; they just enjoyed every aspect of their job.

Essence: Without regrets: The natural attitude toward combat was the acceptance of the possibility of becoming a Wounded Warrior.

So, it-it’s one of those things where you kind of expect it. I mean, an engineer doing route clearance, you’re going to get blown up at least once.

Yeah, so far it’s just to take care of myself in terms of the-at least I take it very personally. You know, I don’t know about other soldiers but, for me, it’s just my full time job to get to a hundred percent, and I can tell you that almost seven months in, I’m to a good 85, 85 percent, because going back to the daily schedule it’s so hard to get to a routine when you’re feeling like shit [chuckles] You know? It’s not as easy as I would think, and it’s hard. It’s hard. It’s pretty hard.

When I was on the road, I was a passenger and I don’t know if it was an IED or just a rocket or a mortar but you know, I heard it, the repercussion, rolled up my window because I was in a vehicle and didn’t think anything of it….I heard a huge explosion and the wind, I mean, the whole aftermath came and shook the tent and I mean, I even felt it, but it didn’t knock me on the ground, I still knew who I was.

Hobbies and physical activity are essential to feel well and to get better.

All the participants shared a common description of what it felt to be better, to feel well. This was often achieved through hobbies, like playing an instrument, watering the lawn or engaging in physical activity. Playing an instrument was the way that one of the participants released the emotion of feeling frustrated; it made him feel that he could still do what he loved. This participant was in an Army band playing the bagpipes during funerals and other events. He calls himself “the piper,” and he feels pride in that. Other participants continued to do things they liked prior to sustaining the injury, with the goal to feel better and not lose that part of them. Some exercise, slowly regaining their stamina and physical control by lifting weights and visiting the gym. The goal of being as good of a runner as they were in the past was a common
goal between all of the participants. One of the participants described the pleasures of smoking a cigar in a lounge. There, he engages in social and political discussions, leveling with anyone regardless of education or social status. As he described it, it is not the act of smoking; it is the company, the environment and the deep conversations. Practicing their hobbies is comforting to participants; it makes them feel that they are still the same person, although they recognize that their hobbies are now practiced with a higher level of difficulty.

_One of the big things I’m working on is, I’ve actually been focusing more on my physical rehab, been trying to work up so I can slowly start running again. That’s-that’s one of my big goals._

_You’re sitting down and you might sit down next to someone and strike up a conversation about politics or just the economy or just life in general._

_Because there’s hundreds of pipe tunes and I don’t know all of them, but it’s therapeutic for me because I’m in balance. And that’s what helped me through my two tours and my pipes kept me sane._

_Thankfully, I’ve been able to go back and working out for me is just something that I just-not only I like it, I fuckin’ love it. I love working out, so that’s been a blessing, again, being able to go back into the gym and being able to exercise, so that’s another hobby that I have._

Essence: The social practice of hobbies reestablished and reinforced a sense of stability and control.

**The good days and bad days with TBI seem to take a toll in the emotional well-being, especially when trying to take control.**

A good day for the participants might mean having a headache-free day, being able to remember things, going to medical appointments, not having interruptions or unanticipated change of plans—being able to function without their daily symptoms. Most of the participants described the desire to take control over their condition, including TBI, PTSD and the
debilitating pain. For some, taking control may be achieved through spiritual practices, physical exercise, coping skills learned from medical providers or with the help of a family member.

*Just like everybody, you have your good days and bad days. It’s just some days, for people with TBI and concussions and something wrong with their brain, it’s a lot more dramatic. They have their really ups and they have their really downs and nothing really in between. It’s either you remember or you don’t. And sometimes, every once in a while you can think of the connection that you need, but a lot of times, it’s very difficult. If you can get like a key phrase or something to trigger that memory, you can remember almost anything. But unless you don’t—they could tell you word for word what you say, but if nothing triggers that memory...like it could be a smell.*

Planning the day was an important part of effectively getting through the day. The fear of an exacerbation of headaches or memory problems, e.g., forgetting an important event of the day, was constantly worrisome and emotionally debilitating.

*...learning how to take control of my life and I need mention that some things you want to take control, but some things you have to let God take care of. And yeah, so spirituality is important because without that, it’s very easy to fall off the wagon so to speak, even with the TBI.*

*A good day? When I make all my appointments and I don’t have a headache. But it’s very rare because every day I seem to have some type of a headache. It may not be severe, but something will trigger it-getting frustrated or getting angry.*

*A good day, I remember to take my medications, well, I take my medications and shower, shave, eat. And then once I get to work, you know, the first thing I do, I check my e-mail, my calendar and then I...the people that I work ...my nickname is Ten Second Tom.*

*It just seems like everything goes downhill once you forget about something, because you want to be how you were before, where I used to be able to remember damn near anything. Excuse my language, but like I had no problem. Like you could show me once and I knew it forever. And now it’s like I look at my son and I know who he is and I know what he is, but for the life of me I’m just like what is your name?*

Essence: Reclaiming control over what before was natural or normality of self.
My family has my back.

During the interviews, many times the participants commented on their family, their struggles, their fear, but more than anything—their unconditional support. The participants mentioned their military family and their home family as distinctions, but equally regarded both and acknowledged the military as a family they belong to. The participants that were single relied on their peers, Soldiers that also had TBI. They felt they were understood, they were supported and they experienced valuable moments of sharing not only a good time but also good conversations about their injuries.

The home family was comprised of mothers, fathers, sisters, brothers, spouses and children. They all impacted in some way the participant’s life in a meaningful way. Not understanding why they are still there for them but knowing that love and commitment have prevailed made them feel valuable and improved their sense of well-being and comfort. It was of upmost importance to count on the immediate present family. The participants expressed sadness when describing how they know their family cannot count on them the same way that they do, but also there was a sense of it being an opportunity for healing and getting better. Some successful stories on how to cope with TBI were attributed to techniques the spouse or significant others used to assist them.

Uh, yeah, they-my wife help, helps me so, so, uh, um, with, with, without their support, uh, I would-I don’t know where, uh, I don’t know-like I wouldn’t be able to-I don’t know, like, like I probably wouldn’t be here, so, really [laughs].

In addition, three participants described how much they felt that the TBI affected their wives and fiancées, describing their life as different and feeling guilty of how much time and energy they consumed. The presence of TBI in their life has been particularly difficult for the immediate family, those who live under the same roof. It has affected their significant others (wives, fiancées) and children. The families adopted ways to deal with the impact of the injury, often by assuming additional responsibilities as a caregiver, mother and head of the family.

I know it’s hard, hard on my wife.
Even if I did it like already and like I’ve heard my, my wife say, hey, you, you, hey, you, you, you, you took a shower like three times today. I’m like unh, okay, thank you for, for telling me that I took a shower three times.

My daughter is already, um, she, she, she’s kind of pick, picked up a bit.

These three participants recognized that their wives and fiancée are an important part of their rehabilitation and described them as “troopers” and “strong.” At the same time, they reported the sorrow, sadness, fatigue, frustration and health concerns that their mental stability has had on their family. Communication has been affected because of the symptoms associated with having TBI: lack of concentration, fatigue and problems with comprehension. The symptoms of an auditory processing disorder, a highly prevalent disorder in patients with TBI, is impacting their relationship with their significant others.

And of course communication with my wife. We have a lot of issues were trying to iron out and it’s frustrating, depressing at times because you’re just trying to communicate with your spouse and when she tells you something and you hear it, but you know, if she asks you to do something, you say, got it, I’ll do it, and then I’ll forget something and I’ll have to come back to her and say, “Now what was exactly that?” And she gets frustrated. So it’s a work in progress.

My girlfriend will make coffee for me, make me my lunch and usually she has to ask me, do you have your wallet? Do you have your phone? Do you have your keys? Do you have your ID? Do you have your lunch? Is there anything you need to take to work? Is there anything that you need to remember that you’re not telling me from yesterday or the night before?

These spouses have to serve as the backbone of the family by taking care of the main responsibilities, including educating their children, and it puts a strain on the relationship. Their needs have not been met because they have been taking care of their Wounded Warrior. The participants reported their spouses have not taken care of their own health because their focus in on them.

My 6-year-old, our 6-year-old will say, “Well, is daddy sick? Is daddy ill?” And my wife will say, “Well, daddy got injured, but he’s getting help.” Because
otherwise he’ll get upset and we don’t want to have him focus on that. Daddy got injured but he’s getting help and he’s getting better and so that puts him at ease.

Sometimes I’ll get in the shower and I’ll shower and forget to wash because I’ll be standing in the shower and I just completely forget and then I would get out and then I’ll think about it or my girlfriend or fiancée would be like, did you wash? Well, I don’t know. Shit, I don’t know. And I’ll go take another shower real quick and wash and then get back out. She reminds me to brush my teeth, because I forget. If she doesn’t force me to eat or have something ready for me, I won’t eat. It’s not that I don’t want to eat, I just don’t know if I’ve eaten and I don’t want to over eat.

Essence: Selfless support from those essential in life provides rest, strength and reassurance.

**MAIN ESSENCE: REGROUPING**

Essence, in Huserlian phenomenology, is what belongs to something invariantly, the “what” of the experience (Moran & Cohen, 2012). As I immersed myself in the narratives and stories of the participants experiencing life after a TBI, it was self-evident the intuition and intentionality as they shared their life-world. Being wounded in the battlefield is something that all these participants experienced. This abrupt event did not stop their life; as they recognized they had been wounded, giving up was not an option. Instead, they all shared a common attribute—they regrouped. Regrouping is a military concept that means to become organized in a new, tactical formation. In other words, when facing outcomes to situations that were unanticipated, the Soldiers regroup to reassess the conditions and then they move forward to complete the intended mission. Usually this occurs during combat operations when there is an enemy attack or the mission is interrupted by unexpected factors. In this study, all the participants’ stories converged into one unified essence: having to regroup, reassessing their current situation after sustaining a TBI. These participants took a step back, not by choice but because of duty, commitment and sacrifice to fulfill the mission they love. As they regroup, they are exploring new paths on the horizon of possibilities given by the life that lies ahead. It is during this reassessment process that they are intentionally getting to know their new self by
finding ways to connect their old self to their new one. There is no room for a permanent stop, but only for relearning how to live with a current focus on healing and getting better. Having a good day is challenged by all the physical and emotional obstacles in the participants’ lives. Despite all these obstacles, with courage and a sense of Warrior in them, there is a thirst to regain the control over their lives. There are sorrows, frustrations and challenges, the future is uncertain and the present is unfulfilled; however, they rely on the support of those who matter the most to them. Transcending from the old self and welcoming the new self is a symbolism of what constitutes their new normality in their life and the initiation of a new life-world.

Discussion

Understanding the lived experience of military personnel that have sustained a TBI as the consequence of an explosion provided the insights and description of how the meaning of this injury has materialized in their physical, emotional and social well-being. The recognition and memory of who these participants were before the injury is sometimes corrupted by the inability to conceive or remember life before the injury. Moreover, their sense of self invariably was described as being lost as there is the constant rediscovery of a new self within. Some studies focused on the absence of self, lack of self-awareness and lack of motivation after a TBI (Roundhill, Williams, & Hughes, 2007; Yeates, Henwood, Gracey, & Evans, 2007).

The scientific community has limited understanding of the perception of military personnel sustaining a TBI and the potential impact in their lives. The narrations of the participants in this study provided information on how the mechanism of the injury translated to the time elapse between sustaining the injury and receiving treatment, the characterization of the injury and the impact of the injury in their present lives.
Many studies have been trying to define the coexistence of TBI and PTSD and the potential to assign distinct symptoms to each of these medical conditions (Hill II, Mobo Jr, & Cullen, 2009; Hoffman & Harrison, 2009; Howe, 2009). In this study, when describing their conditions, the participants characterized each of the symptoms to be uniquely pertaining to either TBI or PTSD, but they never described a symptom as being shared between both conditions. This introduces a discourse of how TBI and PTSD are perceived by patients and the relevance of it. The participants are placing themselves in a spatiotemporal dimension of wholeness; they see themselves as an absolute body. Trying to separate the intrinsic characteristics of symptom-related TBI and PTSD may be fruitless if the outcome is meaningless to the patient. This is a topic open to debate and merits further study and analysis.

During the last decade, the DoD has invested large amounts of funding in research and rehabilitation programs around the nation to address SMs morbidity due to TBI. The purpose of this study was to provide more information by analyzing the accounts of those who live day to day with the injury. The intent of this study is not to generalize but to be transferable, since the goal of phenomenology research is not to translate the results to the general population under study but to provide rich information of the cases that were specifically studied. The methods of this study were designed based on the cases of interest.

Some may argue that member check should have been applied to this study; however, while member check is useful when applied to maintain the trustworthiness of the method, the participants of interest had some degree of cognitive impairment, mainly memory issues. Member check would have presented problems for the SMs to confirm or add to what they said during the previous interviews. The principal investigator anticipates conducting similar studies in the near future, to include not only Service Members but also family members (spouses, parents and significant others) and Veterans of different eras. One of the weaknesses of this study was the inability to recruit Senior Non-Commissioned Officers and Officers. However, this was anticipated since these groups are less likely to sustain a brain injury in the battlefield when
compared to the ranks of the participants in the study. Describing the lived experience of higher-ranking military personnel after sustaining a TBI, may be meaningful for transferability purposes and to assess any differences between the categories of military position. All efforts were made to achieve an equitable enrollment in this study; however, the absence of female SMs and SMs of other races were another factor that would have been avoided had it been possible. Another weakness of this study is the need of an interview guide to fulfill the requirements of the research regulatory agencies. In phenomenology, the ideal method would include one or two main open questions to obtain the information from the participants. This method was intended for this study, but a guideline was deemed necessary to ensure that the topics discussed were protected from any operations security (OPSEC) disclosures and supported the well-being of the participants. However, the authors ensured their rigor in the method by exploring ways to fulfill the requirements of the regulatory agencies without compromising the methods essential to conduct a phenomenological study.

Many initiatives are in place for the prevention, identification and treatment of brain injuries in the military. The narratives were extensive and provided a wealth of information, possibly useful for follow-up studies and analysis. Although the study presented in this article describes the life of five SMs that sustained a blast-induced brain injury, it is anticipated that more studies like this will follow to identify how the nation and the DoD can better serve this population, not only medically, but socially.
Phenomenological Inquiry in Military Research

Abstract

Exploring the mechanism of a disease poses a challenge when the disease is “invisible” like it is in traumatic brain injury. TBI has been described by the Department of Defense (DoD) as the signature wound of war and an invisible wound. Describing and understanding the meaning and lived experience of this condition in military personnel may be possible by the use of phenomenological inquiry. The purpose of this article is to describe the mechanism of action to execute a phenomenological work in military personnel. In this article, we provide a description of the rigor in method and health/social considerations applied to military research. Moreover, the investigator’s experiences in conducting a qualitative study in a community of Warfighters, taking into account the role of culture and language was meaningful in the rigor and trustworthiness of the data. Phenomenology as a qualitative research method and the philosophical principles of Edmund Husserl presented a study design suitable for the in-depth investigation Service Members living with TBI.

Introduction

Phenomenology as a method surfaced in the twentieth century with Edmund Husserl’s principles of intentionality. Edmund Husserl was a mathematician and he wrote the *Ideen*, embarking in the “life-world” of philosophy and becoming the father of phenomenology. The aim of using phenomenological inquiry is to describe and understand the lived experience of the experiencing person, leading to the extraction of meaning and essence of the phenomena under
The purpose of the study that served as my dissertation work was to describe and understand the lived experience of active duty military personnel after sustaining a blast-induced traumatic brain injury (TBI). “Blast-induced” introduces an epistemological difference that translates to a physiological and emotional response, i.e., a TBI caused by an explosion (Luethcke, Bryan, Morrow, & Isler, 2011).

During the last decade, the United States (US) has been leading the two longest wars in US history, Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). The tactical intervention and the type of weaponry play a role in the type of injuries sustained during combat activities. Traumatic brain injury (TBI), a signature wound of war, has been recognized by the Department of Defense (DoD) to be the greatest impact in the healthcare of the Service Members in the US Armed Forces. For this reason, it is imperative to open a discussion on how we can better serve this population of SMs with TBI. Neuroscientists are pursuing the idea of defining TBI by the use of nano technology and sophisticated bioengineered equipment, which may discover the brain pathways affected by the condition. In the meantime, millions of sufferers struggle with tasks of daily living, as they fight to identify with their new reality.

The goal of this article is to start the discussion of how we might apply different study designs to extract scientific and medically meaningful information.

**Phenomenology Applied**

This study applied a phenomenological inquiry based on the foundation and principles of transcendental phenomenology. The early roots of transcendental phenomenology began in the twentieth century by Edmund Husserl, father of phenomenology. The emphasis of the rigor in the method did not disregard the rigor in the analysis. Using the principles of Huusserlian phenomenology, I explored the meaning of living with TBI from the perspective of active duty
personnel that sustained the injury in the battlefield. The main objective was to describe the lived experience of these participants after sustaining the injury and what that meant to this elite group of Warfighters.

**WHY EDMUND HUSserL’S TRANSCENDENTAL PHENOMENOLOGY?**

Phenomenology as a science and as a method provides a wealth of positions to discuss various conceptualizations and paradigms of thought. The phenomenological movement began around the first decade of the twentieth century. Edmund Husserl, philosopher and father of transcendental phenomenology, lived during the historical movement of “positive” or “natural” sciences—dominated mainly by empirical evidence and the validity of things. Positivism, in the second half of the nineteenth century, was troublesome for Husserl as he stated, “Merely fact-minded sciences make merely fact-minded people.” (p.6) Husserl, in lieu of this movement that was setting the stage for what would account and define validity, criticized the positive sciences and naturalism in his book, “The Crisis of European Sciences and Transcendental Phenomenology.” Husserl criticizes the factual sciences responsible for the arguable validation of “objective truth” and provides a strong argumentative position in favor of philosophy as a rigorous science that maintains the identity of the being. Phenomenology is used as a method to describe the individuals’ living experience and the meaning of that experience in their life (Sadala & Adorno, 2002).

**Methods**

This study took place in an Army military installation in the US Southwest region and under the authority of Western Region Medical Command (WRMC). The study was approved by
all the required Department of the Army regulatory agencies, including the local Institutional Review Board (IRB) and the Clinical Investigations Regulatory Office (CIRO).

PARTICIPANTS

The participants or key informants in the study were active duty Service Members (SMs) that sustained a TBI during OIF or OEF combat operations. The recruitment of these participants followed a very unique method due to the cognitive impairments associated with having a TBI. Taking into consideration possible auditory processing disorder, fatigue and comprehension, the investigator made sure these participants met the inclusion criteria without compromising their well-being (Fausti, Wilmington, Gallun, Myers, & Henry, 2009). The participants eligible to take part of this study had to be: active duty military at the time of the enrollment, between 18-45 years old, diagnosed with mild or moderate TBI within the last three years and able to consent to the study. A diagnosis of TBI within the last three years not only ensures that the sample is homogenous in the length of time enduring the injury, but also implies that they fall under the concussion management policies implemented in the summer of 2010. Having a diagnosis of severe posttraumatic stress disorder (PTSD) within the last six months or the inability to consent for the study were characteristics that made potential participants ineligible to take part of the study. Severe PTSD may interfere with the quality of the interview, acting as a barrier for data collection and analysis of the information, in addition to introducing a possible risk for the participant. Individuals with severe PTSD are more likely to relive the event in which he or she was wounded in combat, representing a higher risk for an adverse event during the data collection phase (Weiss, 1994). For these reasons, individuals with severe PTSD were excluded from participation in the study.
RECRUITMENT

The study was announced among medical providers in hopes that they would refer their patients that identified as having a diagnosis of TBI. Also, some individuals that were aware of the study contacted the investigator for more information. One other technique, and the most successful, was the “snowball sampling”—those with the condition of interest refer others with the condition, in this case, combat-wounded SMs with TBI (Creswell, 2007). However, some of these individuals referred by other SMs with TBI were not eligible to take part of the study. Sustaining a TBI longer than three years ago and having a diagnosis of severe PTSD were the two most common reasons why certain individuals were not eligible.

The study investigator secured IRB approval for a recruitment script, an eligibility questionnaire and a study information sheet. The 7-item eligibility questionnaire was administered to all the individuals interested in being part of the study. The goal of the study information sheet was to provide all the necessary information for individuals interested in participating in the study, eliciting a conscious decision without any perception of coercion. The individuals interested in becoming part of the study were given the information sheet and scheduled for consent process at a later day. Understanding TBI-associated symptoms and comorbid conditions (e.g., concentration, comprehension, other cognitive issues), the investigator wanted to first offer the opportunity to the individual to discuss participating in the study with an individual that they trusted.

In military research, compensation is not common due to policies and guidelines implemented by the DoD. According to the Department of Defense (DoD) Research Guidance for Investigators, section 4.2.3 “Limitations on Compensation” specifies that on-duty federal personnel, including military members, may receive compensation of up to $50 for blood draws and no compensation for general research participation. Despite this restriction, it has been my experience during seven years of conducting military research that SMs demonstrate interest in contributing and becoming part of studies without the sole interest in compensation.
DATA COLLECTION

Qualitative research provides the opportunity for a variety of data collection techniques and methods. Conducting a phenomenological study requires a level of detail in the planning and execution of the data collection. In military research, certain data collection techniques are more challenging to attain due to guidelines and policies in the confidentiality and human participant protection. The use of audio recorded interviews ensured the standardized collection of data and provided a record of the information that was obtained.

Setting

The location where the study took place was carefully selected as a familiar territory for the participants. It was important to keep a familiarity of the place or field where they would take part of the study, to improve their sense of security and confidence (Speziale & Carpenter, 2007a). The study was conducted within the military installation in a medical building close to places that were known to the participants.

In order to create familiarity with the office where the data collection took place, each of the participants met with the investigator in the same office that they would be interviewed. A private office not only provided the opportunity for a higher level of confidentiality but also increased the trust of the participants, knowing that they were not going to be seen by superiors or other familiar faces. In qualitative studies, the elements of controlling factors are not similar to those practiced in empirical studies. Instead, it is suitable to control certain environments to be able to obtain the rich data that the investigator is pursuing. Controlling the environment in this study (e.g., asking the participant about the level of brightness, room temperature, noise, smell, chair position) was important in promoting a good state of well-being for the participant during
the data collection. Military personnel with TBI not only experience the symptoms of this condition, but they are sometimes exacerbated by comorbid conditions, to include PTSD and depression (Bogdanova & Verfaellie, 2012). One of the participants expressed concern about having headaches during the interview, stating “every day I seem to have some type of a headache. It may not be severe, but something will trigger it—getting frustrated or getting angry.” Environment control and reassurance of the investigator’s commitment to take into consideration the participant’s health status are some mitigation strategies that improve the confidence of the participant and impacted the mood during the interview. Moreover, it demonstrates to the participant that they are the most important part of the study, improving the bond between the participant and the investigator and creating a platform to get their story as accurate as possible. The participant in this study had to take a 10-minute break to eat and the interview was concluded without the presence of a headaches.

**Individual Interviews**

Face-to-face, semi-structured, individual interviews were the method of data collection selected for the study. Individual interviews are more appropriate when applying phenomenological inquiry, as they permit the in-depth narration of each of the cases. These interviews were audio recorded and transcribed verbatim. Interviewing military personnel can introduce challenges as they possess a very unique language, including slangs, numerous acronyms, and vocabulary pertaining only to military training. Like any other unique community, having in-depth knowledge of the population under study is important. Stopping the interview to ask about terms or acronyms definition would not have been good practice. Some of these acronyms included MOS for *military occupational specialty*, a term unique to the Army-enlisted Soldiers and stratified depending on their skills and physical demands. Having sufficient knowledge of the population is relevant for the probes and interview flow. The interview could
suddenly take an erroneous direction if the interviewer could not comprehend the language and, moreover, it may distress the participant and decrease the level of confidence and trust. During the interview, unflattering words may be commonly used when interviewing military personnel. The interviewer needs to assume an attitude of normality, since a disruption on the part of the interviewer may alter the trustworthiness of the content of the interview. Allowing the participant to maintain a sense of autonomy in representing the group and community that they are part of allows for information rich in language and cultural manners.

When interviewing military participants with TBI, it is very likely that they will have the presence of comorbid conditions like PTSD and depression. Awareness and constant reevaluation of the environment and the participants are important components to ensure their health is not affected. Having mitigation strategies like a behavioral health provider, as well as contact information readily available in the case of a medical emergency, are some of the factors to take into consideration when planning the interview. In the study that was conducted in SMs with TBI, one of the participants lost 2 comrades during the attack where he sustained the TBI. Reliving some of the event was very emotional for him. It is essential to be prepared, offering some water and changing topics may put at ease or calm the participant. If that works, offering a break, rescheduling of the interview and providing the option of talking with a behavioral practitioner is appropriate. In the study, the participant felt calm right after he was offered water, and he immediately switched topics to talk about family. This technique demonstrated to be effective in continuing the interview and not having a reoccurrence of emotional distress. Another experience of interviewing participants with TBI is the repetitiveness of their accounts or communication impairments. One participant kept repeating the following statement “Did I talk about headaches?” in that case, answering “what about your headaches?” was effective in getting more in-depth information every time he would share his experience with this symptom. The investigator avoided answering directly with a yes or no because it was an opportunity to explore the various experiences and meanings that in this case headaches had in his life. This
study experienced some characteristics experienced in other studies reported in the literature (Carlsson, et al., 2007). All the participants had some level of communication impairment, e.g., stuttering or slurred speech, trouble finding the words to say what they wanted to say and problems with memory. Memory and concentration also were prevalent symptoms in the participants. Another effective strategy in planning the interview is to maintain an environment that is free of any distractions, e.g., clocks, cell phones, computers with message alerts and other elements that may easily distract and take the attention from the participants. The interviewer’s attire also may be planned ahead of time to avoid using clothes and accessories that may easily distract the participant, taking into consideration colors, jewelry, perfume, hair and shoes. These are very important when interviewing participants that have TBI. Colors that are too bright, jewelry that makes excessive noise or irregular noise patterns, smells that may trigger a headache, hair in disarray or not well-maintained and shoes that are too noisy when walking—these are some of the elements that were taken into consideration when the investigator conducted the interviews. These may sound insignificant, but they are very important to plan before the day of the interview.

Field Notes

The use of field notes enhance the interviewer’s experience by incorporating elements and information of accounts that took place during the interview that were not captured by the audio recording. In this study, the investigator used observational, philosophical and methodological field notes. An example of an observational note in the study is when one of the participants requested to permission to eat a sandwich, and we proceeded to stop the interview for 25 minutes until he was comfortable coming back to the interview. A philosophical field note is more thoughtful, since pertaining to the study, it had to include the reflection in the various principles of Husserlian transcendental phenomenology: how the concept of intentionality,
intuition, apperception, embodiment and temporality were present during the storytelling of living with TBI as military personnel. The act of remembering and the intention of what was remembered are some of the philosophical notes that were relevant in the data analysis. Methodological notes served as reminders; for example, during the first interview, the investigator turned off the audio recorder before thanking the participant for taking part in the study. It may be presumed that the investigator forgot to thank the participant, when in fact that wasn’t the case. The field notes helped to maintain and monitor the study procedures, making it possible to retain higher accuracy of events during the interview. Field notes were treated as secondary data to maintaining an accurate account of the procedures and events during the interview (Roulston, 2010). The investigator was disciplined to prepare the field notes subsequent to each interview, as comprehensively as possible, but without judgmental evaluation. Some field note questions, for example, were: “What happened and what was involved? Who was involved? Where did the activities occur? Why did an incident take place and how did it actually happen?” (Moustakas, 1994).

**Data Analysis**

Applying Edmund Husserl’s transcendental phenomenology provided the opportunity to analyze the information and experiences of military personnel and their life after sustaining a TBI. Interviews and field notes were sources of information for the data analysis. Figure 1 shows the steps for the execution of the data analysis.
The audio files of the interviews were transcribed verbatim in order to accurately represent what was narrated and how was narrated. Representation of a time elapse between thoughts, patterns of speech like stuttering and even excessive repetitiveness of words were transcribed.

Participant A: “I don’t know, it’s one of those things where I’ve-I’ve lived with this for almost two years now. I mean, you-you just-it becomes the norm and it’s hard to remember a time when it wasn’t like this.”

Participant B: “Well, um, were, were, were, were-like I found, um, where like if I didn’t re-
remember certain things or, or, uh, like, like if I didn’t, uh, you know, I had, I had like my team, my, my like team. You know, I had, I mean, uh, to, uh, compensate for that. So, so, uh, um, like, like going through the, uh, ranks, uh, like I, I'd, I'd notice that since in-, since like my first TBI.”
The extraction of significant statements and creation of meaning units required the investigator to read each of the transcripts multiple times. The first pass of reading was achieved with no audiorecording, to get the sense of what was said and to mark significant statements. On the second pass, each interview was read while listening to the audio recording in order to capture the emotions, emphasis and tone of how it was said. Each transcript was then read several times, each time making sure that meaningful statements within each transcript were marked and meaningful statements between the various narrations made by participants. The use of Atlas.ti software was necessary for the purpose of organizing the data. The investigator was familiar with Atlas.ti, and it was uniquely used to organize and tag significant statements across the participants. After organizing all the statements by common theme, the investigator prepared the first detailed description of the information provided by the participants. These descriptions were edited several times to incorporate and modify some of the meaning based on the concurrent use of phenomenological principles described in Figure 2. The challenge of concurrently executing the analysis at the same time it is applied to the principles of transcendental phenomenology is mitigated by finding a common ground where both applications settle and are able to collaborate with one another. Figure 2 describes some of the steps in practicing transcendental phenomenology.
Figure 2. Phenomenological Analysis: Application of Philosophical Framework.

The application of Husserl’s transcendental phenomenology was not conceived without the input from experts in that field of study. I attended a transcendental phenomenology semester at the University of Texas at El Paso Department of Philosophy. I do not claim to be an expert, so I wanted to be prepared as I embarked on this endeavor to describe and understand the meaning and essence of the lived experience of military personnel that sustained a TBI. One of the first exercises I practiced was to provide a full description of my biases and presuppositions. Having had the experience of a husband wounded in combat and sustaining a TBI, I felt vulnerable to approach to the data in my natural attitude. The phenomenological reduction, also referred to as epoché or bracketing, is the suspension of all presuppositions present in the natural attitude—this is achieved through the intensive reflections of self, life-world and horizontal position (Sadala & Adorno, 2002). This was accomplished before entering to the narratives and before the first interview. The essence of the experience of living with TBI as military personnel emerged after many solipsistic practices where the narrations were analyzed and understood.
from the position of the investigator. The intersubjective relation with the participant provided one of the angles as an exchange and cross transference of ideas and attitudes—moving forward as the position transcends from virtue of understanding the experiences to the discovery of new positions through *otherness* or the intersubjective relation, not only with the participant but others that I have encountered or have shared similar experiences. The essence or what belongs to it invariable (Moran & Cohen, 2012). What characterizes living with TBI as military personnel was distilled as an extract of the possibilities and the intrinsic structures of what invariably is. The last step in the analysis is the filtering and distilling of all the conception and characterization through the intersubjectivity of the interviewer and participant.

**Discussion**

The use of a phenomenology inquiry to study the lived experience of military personnel after sustaining a TBI provided insights and detailed description about their condition and the meaning and characterization of the injury and associated symptoms. The information collected through a series of in-depth interviews may contribute to the scientific and medical community. Describing the experience of living with TBI and the embodiment of the condition by how it feels, all the senses and perceptions, will not only create discussion but also will elucidate some of the medical mysteries of cognitive sciences. It is a brain that can only be examined by the person that can apperceive or feel its presence or apparent absence of it. One of the participants was satisfied with the format and the questions, expressing his opinion about how collecting information through interviews:

*Every time you see a provider they give you this big sheet that’s like, oh well, do you have this, do you have this, do you have this, and it’s just kind of check the block. But I think the format you have for asking the questions, you’re-you’re going to get a lot more results than if you just passed out a bunch of-bunch of pieces of paper to people.*
The trustworthiness and rigor of the study was achieved through data collection techniques and planning, the data management and the adherence to Husserlian phenomenological methods applied in the data analysis. The investigator utilized an audit trail, recording each of the study activities and documents that were collected and generated throughout the study (Creswell, 2007). Other studies that have applied a qualitative approach with the purpose of studying TBI in civilians have encountered challenges in the data collection; among them are associated conditions and exhaustion from talking about their life and communication impairments (Crisp, 1993; Jumisko, Lexell, & Söderberg, 2009). One aspect that was very surprising in this study of TBI in military personnel is how eager the participants were to tell their story. Some of them reported that they are tired of completing questionnaires and they have never had the opportunity to narrate their story and their experiences. At the end of the interviews, it was clear that they felt a sense of relief as they were in a very good mood, offering enthusiastically to return and continue with subsequent interviews. The strengths of the study were the rigor in the data collection and the accommodations made to minimize distractions, adverse events and lack of trust or confidence. A weakness the investigator experienced was the lack of participation of women and higher-ranking military personnel. It was anticipated to be able to recruit a higher number of male SMs between the ranks of E1-E6 due to their exposure and combat duties or position in the battlefield.

Much attention has been placed on the physiological impact and the mechanism of injury of TBI in military personnel; however, this study intends to create a discussion of how utilizing phenomenological inquiry may impact the characterization of the injury and comorbid conditions. The framework and elements of TBI covered a spectrum that surpassed the categorization of conditions or symptoms: it is the attention to the individual as a whole, a holistic view of the condition. The investigator was able to identify and describe the meaning and essence of the blast-induced TBI in a SM and the experience of living with the unknown and intentionally prepared to be discovered.
References


Glossary

**Military Terms**

Combat arms
Those branches directly involved in the actual conduct of fighting.

Combat Support
Those branches that provide operational assistance to the combat arms to include combat missions as necessary. They also have responsibility to provide operational and administrative support to the Army in its entirety.

Forward Operations Base (FOB)
In special operations, a base usually located in friendly territory or afloat that is established to extend command and control or communications or to provide support for training and tactical operations. Facilities may be established for temporary or longer duration operations and may include an airfield or an unimproved airstrip, an anchorage, or a pier. A forward operations base may be the location of special operations component headquarters or a smaller unit that is controlled and/or supported by a main operations base. Also called FOB.

Operation Security
A process of identifying critical information and subsequently analyzing friendly actions attendant to military operations and other activities. Also called OPSEC.

Outside the wire
Location outside the perimeter of the FOB.

Regroup
When the objective has been cleared of the enemy, the section commander must regain close control over the section and position them, ready to beat off any enemy counterattack.

Wounded Warrior
Service Member with a status of wounded.

**Acronyms**

**MOS** military occupational specialty
**SM** Service Member
**DoD** Department of Defense
**OIF** Operation Iraqi Freedom (Iraq)
**OEF** Operation Enduring Freedom (Afghanistan)
Appendix A

Study Information Sheet
This research study is being conducted at William Beaumont Army Medical Center entitled “Phenomenology of Blast-induced Traumatic Brain Injury in Military Personnel”. COL Richard Petri, MC, is the Principal Investigator and Roxana E. Delgado, MS, is the Project Manager and the University of Texas at El Paso (UTEP) Principal Investigator.

Why is this study being done?
The purpose of the study is to describe and understand the experiences of military personnel after sustaining a blast-induced traumatic brain injury. We would like to be able to find out how it has been life after sustaining a brain injury. We would like to be able to understand the experience of having brain injury.

Will you be included?
Up to # 15 Service Members will be asked to participate in this study. Your participation is completely voluntary! Deciding not to participate in this study will NOT influence your care or change your planned surgical procedure in any way.

What is expected?
If you agree to participate, you will be asked to complete a consent form, after all your questions and/or concerns have been addressed. Once you agree to participate and complete the consent form, you will be asked to complete a short demographics questionnaire and a face to face individual interview.

How long will it take?
Your study participation is for the time that takes you to complete the short questionnaire and the face to face individual interview. The interview will not exceed 2 hours in one session or in various sessions combined. We want to make sure you do not feel pressure to be in an interview for 2 hours but, it is your decision to break the interview in various sessions. The study commitment will not exceed 6 months, to allow time to schedule the interviews. Once you have completed the study, there is no further commitment requested from your part and we will not contact you for follow ups.

Will I benefit from participating?
You will not benefit directly from taking part in this study, but the information we learn may help us learn about the experiences in the life of Service Members that sustained a blast-induced mild or moderate traumatic brain injury.

What are the risks to this study?
The possible risks and discomforts from being in this research study include:

Interviews

The interview in this study will be in a form of a discussion. There are some potential risks that could make you feel discomfort such as any question or topic that may be perceived by you as sensitive (related to health symptoms, combat exposure and/or relationships). Efforts will be made to maintain the discussion free to any topic that may be sensitive, however, if the interview makes you uncomfortable or upset, you have the right to ask the interviewer to change the topic and/or to stop taking part in this research at any time without loss of benefits; you may contact the investigator for referral. If the investigator notes that you are distressed or anxious about your participation in this study, you will be referred to a licensed clinical psychologist located at the Integrative Pain Management Clinic (IPMC).
The other potential risk can be a breach of your privacy and data confidentiality. The use of your name, e-mail and phone number will be utilized to schedule the interview. Your name with contact information will be kept in a separate file, so the file linking the name and study ID will not contain your contact information. The link between your study identifier and your name will be deleted after the interview is completed. This information will not be used for the purpose of accessing your medical or health information. We ask you to avoid mentioning specific information like names of your Command, spouse and/or any other information that may identify you during the interview. In the case that you mention such information, we will edit this information and will not be included as part of this study.

In the case you report the use of illegal substance use, you will be referred to the Army Substance Abuse Program (ASAP) and a report will be generated and submitted to your command. This study will be presented in scientific conferences and the results will be published in research journal. The investigators will maintain your identity confidential and your name will not appear in any published paper or presentation related to this study.

Confidentiality/Privacy of your identity?

The principal investigator will keep your research records in secure location and they will be password protected. These records may be looked at by staff from William Beaumont Army Medical Center (WBAMC) Integrative Pain Management Center, the WBAMC Department of Clinical Investigation, WBAMC Institutional Review Board (IRB), WBAMC Human Use Committee (HUC), the Army Clinical Investigation Regulatory Office (CIRO) and other government agencies as part of their duties. These duties include making sure that the research participants are protected. Confidentiality of your records will be protected to the extent possible under existing regulations and laws but cannot be guaranteed. Complete confidentiality cannot be promised, particularly for military personnel, because information bearing on your health may be required to be reported to appropriate medical or command authorities. Some of the information that may be required to report to command authorities are the consumption of illegal of drugs or illegal activities. This study will be presented in scientific conferences and the results will be published in research journal. The investigators will maintain your identity confidential and your name will not appear in any published paper or presentation related to this study.

In the case you report the use of illegal substance use, you will be referred to the Army Substance Abuse Program (ASAP) and a report will be generated and submitted to your command. This study will be presented in scientific conferences and the results will be published in research journal. The investigators will maintain your identity confidential and your name will not appear in any published paper or presentation related to this study.

This research study meets the confidentiality requirements of the Health Insurance Portability and Accountability Act (HIPAA).

Can I choose to be part of the study?

Yes, it is your decision to participate or not participate. Tell the researcher if you decide not to participate in this study. If you decide not to take part of this study, your medical care and benefits will not be affected by this decision.

Can I change my mind and withdraw?

Yes, you may change your mind and you have the right to withdraw from this study at any time. If you decide to stop taking part in this study, you should tell the principal investigator as soon as possible; by leaving this study at any time, you in no way risk losing your right to medical care.

If you are not available to complete an interview within the 6 months of the duration of the study due to deployment, TDY, PCS, ETS or any other reason, you will be withdrawn from the study without your consent.
Contact Information. If you are interested in taking part of this study or have questions about the study contact the Principal Investigator or the Project Manager, COL Richard Petri, MC or Roxana E. Delgado, MS at 915-742-7406 or 915-760-1519. For questions about your rights as a research participant, contact the William Beaumont Army Medical Center (WBAMC), Department of Clinical Investigation, Administrator, Human Subjects Protection, telephone 915-742-9412, or the WBAMC Staff Judge Advocate Office, telephone 915-742-2131.
Appendix B

Informed Consent Document
This consent form is valid only if it contains the IRB stamped date

Consent for Voluntary Participation in a Non-Clinical Research Study Entitled:
"Phenomenology of Blast-induced Traumatic Brain Injury in Military Personnel”.

Principal Investigator:
COL Richard Petri, MC, Chief, Integrative Pain Management Center (IPMC), 915-742-7406/07
Roxana E. Delgado, MS Integrative Pain Management Center (IPMC), 915-742-7406 and 915-760-1519 (cell)

Study site: William Beaumont Army Medical Center

1. INTRODUCTION OF THE STUDY

You are being asked to be in this research study because you demonstrated interest and you are eligible to participate in a study that will explore the experiences of Service Members after sustaining a traumatic brain injury. You are eligible because you have been identified to be between 18 and 45 years old, you have a diagnosis of mild or moderate traumatic brain injury within the past three years and you are an active duty Service Member (SM) stationed at Ft Bliss. Your participation is voluntary. Refusal to participate will not result in any punishment or loss of benefits to which you are otherwise permitted. Please read the information below and ask questions about anything you do not understand before deciding whether to take part in the study.

2. PURPOSE OF THE STUDY

The purpose of the study is to describe and understand the experiences of military personnel after sustaining a blast-induced traumatic brain injury (TBI). Blast-induced TBI is the injury that results or happened because of an improvised explosive devices (IEDs).

Other studies have shown traumatic brain injury in the military has almost tripled in the past ten years. Over 73% of all US military casualties in OIF and OEF are caused by explosive weaponry. Little is known about the effects of TBI in a SM. The significance of this proposed study lies in the understanding of the meaning of life after a TBI and the conceptualization of the “new normal” for them.

3. PROCEDURES TO BE FOLLOWED

If you agree to be in this study, you will be asked to complete this consent form, after all your questions and/or concerns have been addressed. You will be asked to complete a short demographics questionnaire and a face to face individual interview. The consent

COL Richard P. Petri, MC
Revised: 22 MAY 13
form will be completed before starting the study: before completing the short demographic
questionnaire and before you take part of a face to face individual interview.

Demographic Questionnaire

The questionnaire will take you approximately 5 minutes to complete and will not be used for the
purpose of identifying you as a participant. It includes the following 7 items: gender, age,
ethnicity, marital status, time in the military, number of deployments and rank. The rank will be
utilized in the analysis to be able to understand your position and responsibilities. Rank will only
be reported not as an individual but for all the participants as a category. This will only be done
to better describe who participated in the study and the rank categories will be as follows:

1. PVT- SPC/CPL
2. SGT-SSG
3. SFC-CSM
4. CW1-5
5. 2LT-CPT
6. MAJ and above

This strategy is utilized to avoid any possibility of you being identified because of your rank.

Individual Interview

- The interview will be individual and not as part of a group. You will be assigned a study
  identification (id) number that will be unique to your participation. This study id will not
disclose your identity and only the investigators will have access to the information that
links your name and the study id. When the interview is completed, the link between your
name and the study id will be deleted.

- The interview will be scheduled at your convenience between the hours of 0800-1500,
  Monday through Friday.

- It will be audio recorded to better understand and accurately document what was said and
to facilitate the analysis. The audio recording will be made using a digital recorder. The
recording will not include any personal identification. Only the investigators and a
professional transcriber will listen to the audio recording.

- The interview is anticipated to last up to 2 hours in one session or the combination of
  various sessions, at your convenience: for example, if you complete 30 minutes of
  interview and you feel that you cannot continue, you will be given the opportunity to
  schedule a second session to continue. The interview(s) will not exceed a total of up to 2
  hours in a single or combination of sessions.

The interview will be face to face and will take place in a private office, at the Integrative Pain
Management Clinic (IPMC). Every effort will be made to maintain the office environment free
of strong smells, noises, good room temperature, comfortable and spacious seating area,
comfortable lighting (not too dark not too bright) and will provide a sense of privacy.

The intention of the interview is not to bring memories or stories that may be sensitive in nature,
but in the case that any of the topics discussed result uncomfortable or upsetting to you, please
inform this to the interviewer. You have the right and can refuse to discuss and inform the
interviewer if you need to change the subject or if you need assistance from a behavioral health
4. AMOUNT OF TIME FOR YOU TO COMPLETE THE STUDY

You will be part of this study for 6 months. During this time you will be asked to visit the clinic for an interview. If you cannot complete the interview in one session, you may be requested to come back for up to 2 more sessions, not to exceed a total of 2 hours (in one session or the combination of sessions). The 6 months will allow time for you to schedule the first appointment and potential sessions at your convenience without rush. For example, if you complete the interview in one session, you will not be requested to return and your commitment with the study is complete.

The interviews will be scheduled at your convenience between Monday and Friday from 0800-1500. Each visit will last the time you are available but not to exceed 2 hours in a single visit or the combination of visits. As specified in section 3, the interviews will last no longer than 2 hours. In the case you need to interrupt the interview you can schedule a follow up session, not to exceed 3 sessions. If you are interviewed for up to 2 hours in a single visit you will not be asked to return for follow ups.

If after agreeing to be part of this study you receive orders like PCS, TDY, deployment or any other, you will have the option of completing the interview at your convenience or you may choose to withdraw without penalty. If you decide to withdraw, you should tell the principal investigator as soon as possible. You in no way risk losing your right to medical care.

5. NUMBER OF PEOPLE THAT WILL TAKE PART IN THIS STUDY

A total of up to 15 participants are expected to take part in this study.

6. POSSIBLE RISKS OR DISCOMFORTS FROM BEING IN THIS STUDY

The possible risks and discomforts from being in this research study include:

Interviews

The interview in this study will be in a form of a discussion. There are some potential risks that could make you feel discomfort such as any question or topic that may be perceived by you as sensitive (related to health symptoms, combat exposure and/or relationships). If the interview makes you uncomfortable or upset, you have the right to ask the interviewer to change the topic and/or to stop taking part in this research at any time without loss of benefits; you may contact the investigator for referral. If the investigator notes that you are distressed or anxious about your participation in this study, you will be referred to a license clinical psychologist located at the Integrative Pain Management Clinic (IPMC). In the case you express the intention or ideation of committing suicide, you will be immediately referred to the Emergency Room.
The other potential risk can be a breach of your privacy and data confidentiality. The use of your name, e-mail and phone number will be utilized to schedule the interview. Your name with contact information will be kept in a separate file, so the file linking the name and study ID will not contain your contact information. The link between your study identifier and your name will be deleted after the interview is completed. This information will not be used for the purpose of accessing your medical or health information. We ask you to avoid mentioning specific information like names of your Command, spouse and/or any other information that may identify you during the interview. In the case that you mention such information, we will edit this information and will not be included as part of this study.

In the case you report the use of illegal substance use, you will be referred to the Army Substance Abuse Program (ASAP) and a report will be generated and submitted to your command. This study will be presented in scientific conferences and the results will be published in research journal. The investigators will maintain your identity confidential and your name will not appear in any published paper or presentation related to this study.

7. POSSIBLE BENEFITS FROM BEING IN THIS STUDY

You will not benefit directly from taking part in this study, but the information we learn may help us learn about the experiences in the life of Service Members that sustained a blast-induced mild or moderate traumatic brain injury.

8. CONFIDENTIALITY/PRIVACY OF YOUR IDENTITY AND YOUR RESEARCH RECORDS

The principal investigator will keep your research records in secure location and they will be password protected. These records may be looked at by staff from William Beaumont Army Medical Center (WBAMC) Integrative Pain Management Center, the WBAMC Department of Clinical Investigations, WBAMC Institutional Review Board (IRB), WBAMC Human Use Committee (HUC), the Army Clinical Investigation Regulatory Office (CIRO) and other federal government agencies like Army Human Research Protection Office (AHRPO), the Department of Health and Human Services, among others, as part of their duties. These duties include making sure that the research participants are protected. Confidentiality of your records will be protected to the extent possible under existing regulations and laws but cannot be guaranteed. Complete confidentiality cannot be promised, particularly for military personnel, because information bearing on your health may be required to be reported to appropriate medical or command authorities. Some of the information that may be required to report to command authorities is the consumption of illegal of drugs or illegal activities.

In the case you report the use of illegal substance use, you will be referred to the Army Substance Abuse Program (ASAP) and a report will be generated and submitted to your command. This study will be presented in scientific conferences and the results will be published in research journal. The investigators will maintain your identity confidential and your name will not appear in any published paper or presentation related to this study.
Once the study is complete, the research team will maintain the research files (to include audio files) for at least 3 years. After this time, the research team will delete all existing documents containing data and will shred all paper documents. This research study meets the confidentiality requirements of the Health Insurance Portability and Accountability Act (HIPAA).

9. CONDITIONS UNDER WHICH YOUR PARTICIPATION IN THIS STUDY MAY BE STOPPED WITHOUT YOUR CONSENT

Your taking part in this study may be stopped without your consent if remaining in the study might be dangerous or harmful to you. Your taking part in this study may also be stopped without your consent if the military mission requires it, or if you lose your right to receive medical care at a military hospital. If the participation in this study represents a risk to you at any point, you will be withdrawn from the study without your consent.

10. ELIGIBILITY AND PAYMENT FOR BEING IN THIS STUDY

You will not receive any payment for being in this study.

11. COMPENSATION IF INJURED AND LIMITS TO MEDICAL CARE

There are no plans for you to receive any compensation (payment) should you be injured as a direct result of being in this study. This is not a waiver or release of your legal rights or any legal remedy available to you. You should discuss this issue thoroughly with the principal investigator before you enroll in this study.

Should you be injured as a result of your participation in this study, you will be given medical care for that injury at no cost to you. Medical care is limited to the care normally allowed for Department of Defense health care beneficiaries (patients eligible for TRICARE coverage and care at military hospitals and clinics). Necessary medical care does not include in-home care or nursing home care. If you need to be hospitalized, you may have to pay the normal fees for subsistence (hospital meals), as per standard regulations.

If at any time you believe you have suffered an injury or illness as a result of participating in this research project, you should contact the Department of Clinical Investigation, William Beaumont Army Medical Center at 915-742-2485.

12. COSTS THAT MAY RESULT FROM TAKING PART IN THIS STUDY

There is no charge to you for taking part in this study.

13. IF YOU DECIDE TO STOP TAKING PART IN THIS STUDY AND THE

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INSTRUCTIONS FOR STOPPING EARLY

You have the right to withdraw from this study at any time. If you decide to stop taking part in this study, you should tell the principal investigator as soon as possible; by leaving this study at any time, you in no way risk losing your right to medical care.

14. YOUR RIGHTS IF YOU TAKE PART IN THIS STUDY

Taking part in this study is your choice. You may choose either to take part or not to take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you and you will not lose any of your regular benefits. Leaving the study will not affect your medical care.

15. AUTHORIZATION FOR RESEARCH USE OF PROTECTED HEALTH INFORMATION

The Federal Health Insurance Portability and Accountability Act (HIPAA) includes a Privacy Rule that gives special safeguards to Protected Health Information (PHI) that is identifiable, in other words, can be directly linked to you (for example, by your name, Social Security Number, birth date, etc.). We are required to advise you how your PHI will be used.

(1). What information will be collected?

For this research study, we will be collecting and using some of your protected health information: your name, and contact information (e-mail and telephone number). Your name and contact information are necessary information that will be used to contact you to schedule the interviews. We may contact you by phone of e-mail to schedule the interview(s) session(s). Your name and contact information will not be used to access your medical records or any health information.

Also, as part of this study, we may analyze information provided during the interviews that are related to your general health. Information that you report about your general health may include the status of your health that may or not be directly related to traumatic brain injury, like any existence of PTSD and the symptoms of this condition. Also, other health related symptoms or diagnosis, for example: headaches, blood pressure, hormonal imbalances, sexual functioning, physical functioning or impairment, alcohol use, drug use, medication management, your perceived behavior, and stress related conditions, among other health issues. The information you disclose during the interview and that is related to your health may be used by the investigators for analysis purposes. This information will not be identifiable with your name or any other personal information.

In the case you report the use of illegal substance use, you will be referred to the Army Substance Abuse Program (ASAP) and a report will be generated and submitted to your Command.

(2). Who may use your PHI within the Military Healthcare System?

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The members of the research team will not access your medical information. Any health information will be obtained by self-report. Additionally, your PHI will be made available to health oversight groups such as the WBAMC Department of Clinical Investigations, the WBAMC Institutional Review Board, US Army Human Research Protection Office (AHRPO) and the Clinical Investigations Regulatory Office (CIRO) and any other DoD oversight agencies. The Personal information will be for scheduling purpose and will not be utilized to access your health information or medical records.

(3). What persons outside of the Military Healthcare System who are under the HIPAA requirements will receive your PHI?

Your information will be made available to the UTEP advisor and the UTEP IRB. Your PHI may be available to health/research oversight groups including FDA, DHHS.

(4). What is the purpose for using or disclosing your PHI?

a. The members of the research team need to use your PHI in order to contact you to schedule the interviews.

(5). How long will the researchers keep your PHI?

The members of the research team will not access your medical record or information. Any health information will be obtained by self-report. Your PHI will be stored for a total of up to 6 years. The authorization to use your information will expire 6 years from the date this document was signed.

(6). Can you review your own research information?

a. You may look at your personal research information at any time.

(7). Can you cancel this Authorization?

Yes. If you cancel this Authorization, however, you will no longer be included in the research study. The information we collected from you can be destroyed at your request. If you want to cancel your Authorization, please contact the Principal Investigator in writing.

If you withdraw your authorization, COL Richard Petri and his research team can continue to use information about you that has already been collected in order to maintain the integrity of the study. No information will be collected after you withdraw your authorization.
(8). What will happen if you decide not to grant this Authorization?

If you decide not to grant this Authorization, you will not be able to participate in this research study. Refusal to grant this Authorization will not result in any loss of your medical benefits.

(9). Can your PHI be disclosed to parties not included in this Authorization who are not under the HIPAA requirements?

There is a potential that your research information will be shared with another party not listed in this Authorization in order to meet legal or regulatory requirements. As part of this study, we may disclose your information to the federal oversight agencies that include but are not limited to AHRQ, CIRO, Department of Health and Human Services Office for Human Research Protections, Office of Civil Rights, the Food and Drug Administration and other federal, state, or international agencies or other programs responsible for the oversight and conduct of research. Your information may also be shared with the researchers at the University of Texas at El Paso (UTEP) and the UTEP IRB. This disclosure is unlikely to occur, but in that case, your health information would no longer be protected by the HIPAA Privacy Rule.

(10). Who should you contact if you have any complaints?

If you believe your privacy rights have been violated, you may file a written complaint with the WBAMC HIPAA Officer, 5005 N. Piedras Street El Paso, TX 79920. Telephone: 915-742-2198.

Your signature at the end of this document acknowledges that you authorize WBAMC personnel to use and disclose your Protected Health Information (PHI) collected about you for research purposes as described above.

16. CONTACTS FOR QUESTIONS ABOUT THE STUDY

If you have questions about the study, or if you think you have a study-related injury, you should contact the Principal Investigator, COL Richard P. Petri, MC at 915-742-7406/07 and /or Roxana E. Delgado at 915-742-7406/07 or 915-760-1519. For questions about your rights as a research participant, contact the WBAMC Department of Clinical Investigation at 915-742-2485, or the WBAMC Staff Judge Advocate Office, telephone 915-742-2131.

A copy of this signed consent form will be provided to you.
SIGNATURE OF RESEARCH PARTICIPANT

You have read (or someone has read to you) the information in this consent form. You have been given a chance to ask questions and all of your questions have been answered to your satisfaction.

BY SIGNING THIS CONSENT FORM, I FREELY AGREE TO TAKE PART IN THE RESEARCH IT DESCRIBES.

_________________________________________   _________________________
Subject’s Signature                           Date

_________________________________________
Subject’s Printed Name

SIGNATURE OF INVESTIGATOR / PERSON CONDUCTING CONSENT

You have explained the research to the volunteer, or his/her legal representative, and answered all of his/her questions. You believe that the volunteer subject understands the information described in this document and freely consents to participate.

_________________________________________   _________________________
Investigator’s/Person Conducting Consent Signature   Date (must be same as the subject’s)

_________________________________________
Investigator’s/Person Conducting Consent Printed Name
Appendix C

Publication Clearance
MEMORANDUM FOR Roxana E. Delgado, Ph.D., William Beaumont Army Medical Center, El Paso, TX 79920,

SUBJECT: Approval of the dissertation titled “Phenomenology of Blast-induced Traumatic Brain Injury in Military Personnel” to be published in the library and online at College of Health Sciences, University of Texas El Paso.

1. Under the provision of AR 360-1, The Public Affairs Office, Readiness Division, and the Department of Clinical Investigation has cleared subject material for publication. It is approved with the stipulation that the following disclaimer be reflected on any written or oral presentation prior to submission: “The views expressed in this document are those of the author(s) and do not reflect the official policy of William Beaumont Army Medical Center, the Department of the Army, or the United States Government”.

2. When subject material is published please notify the Department of Clinical Investigation with the publication information (i.e. publisher, date, volume, and page(s)).

3. POC is the undersigned at (915) 742-6208.

12/11/2013

X Sheryl A. Bedno
LTC, MC
Chief, Department of Clinical Investigation
Signed by: BEDNO.SHERYL.ANN.1090745057
Vita

Dr. Roxana Delgado is the Senior Research Associate at Samueli Institute, Military Medical Research Division. She holds a Master of Science degree in Epidemiology from the University of Puerto Rico and completed her doctoral work in the area of Interdisciplinary Health Sciences. She obtained a certification in Qualitative Research Analysis by the University of North Carolina at Chapel Hill. Dr. Delgado is faculty at the University of Texas at El Paso, School of Nursing, Doctor in Nursing Practice (DNP) program. She has been a collaborator on numerous grants and given several lectures and poster presentations in the areas of mental health, traumatic brain injury (TBI), and Integrative Medicine in the military. Her work focuses on the health and well-being of military personnel and she has been an active member of the Fort Bliss community. Dr. Delgado currently serves as the military medical research liaison between William Beaumont Army Medical Center and the Samueli Institute. On March 12, 2012 Dr. Delgado along with her husband were recognized by Congress as a national TBI advocate and has presented in various forums to include congressional roundtables, conferences, universities, and military venues in the area of health policy of TBI in the military.
Permanent address: PO Box 220348
El Paso, TX 79913

This dissertation was typed by Roxana E. Delgado Martinez.