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Combat-Related Reproductive Trauma:
Implications for Quality of Life and the Reproductive Narrative

by

Laura S. Covington

March 2018

Submitted to the Faculty of the Graduate School of Social Work and Social Research
of Bryn Mawr College in partial fulfillment of the requirements for the
Degree of Doctor of Philosophy

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Laura S. Covington

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Abstract

Little research exists on the experiences of a combat-related injury that impairs fertility. This dissertation is a qualitative exploration of the lived experiences of military members after a genitourinary (GU) injury. It addresses the biological, psychological, and social impact on quality of life during recovery and subsequent attitudes about family development and sexual functioning. Building on both the life course perspective and the reproductive story model, this dissertation reviews literature on military culture, GU injury, and infertility to give a context to further analyze the essences of the phenomenon (Elder & Giele, 2009; Jaffe & Diamond, 2011).

This study is based on intensive interviews of 10 recent veterans from the post-9/11 War on Terror. Through a phenomenological analysis approach, results suggest that the reproductive trauma is difficult to fully internalize, as it impacts many areas of life (i.e.-intimate relationship, sexual functioning, fertility). Yet, in the lived experience of these veterans, the GU injury is insufficiently addressed due to more critical health needs and the lack of medical resources to reverse testicular function. The reproductive trauma is often put aside until physical injuries are stabilized and some independence is regained. Finding meaning and purpose is a way to reconstruct the reproductive narrative.

The results of this study have implications for social work policy and practice, as well as future research, for persons who have experienced military-related GU injuries. Approaching this trauma-based experience through a reproductive narrative provides clinicians a tool to reconstruct the life course and manage the unknowns of this trauma.

Keywords: genitourinary injury; life course perspective; reproductive trauma; biopsychosocial; infertility; military

*To the U.S. military members, veterans, and their families,
with combat-related injuries that have impaired fertility,
for your service and the continuing sacrifices you make.*

*May you successfully rewrite the next chapter of
your reproductive narrative, whatever it may bring.*

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Abbreviations

Abbreviation	Term
ADL	Activity of Daily Living
ART	Assisted Reproductive Technology
ASRM	American Society for Reproductive Medicine
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CDC	Centers for Disease Control and Prevention
DCBI	Dismounted Complex Blast Injury
DVBIC	Defense and Veteran Brain Injury Center
DoD	Department of Defense
DoDTR	Department of Defense Trauma Registry
GU	Genitourinary
IAVA	Iraq and Afghanistan Veterans of America
IED	Improvised Explosive Devices
IUI	Intrauterine Insemination
IVF	In Vitro Fertilization
LRMC	Landstuhl Regional Medical Center
MTF	Military Treatment Facility
NIH	National Institute of Health
OEF	Operation Enduring Freedom
OIR	Operation Inherent Resolve
OFS	Operation Freedom's Sentinel
OIF	Operation Iraqi Freedom

OND	Operation New Dawn
PROMIS	Patient Reported Outcomes Measurement Information System
PTSD	Posttraumatic Stress Disorder
PVA	Paralyzed Veterans of America
TBI	Traumatic Brain Injury
TOUGH	Trauma Outcomes and Urogenital Health
VA	Department of Veteran's Affairs
VHA	Veterans Health Administration
WRNMMC	Walter Reed National Military Medical Center
WHO	World Health Organization
WWP	Wounded Warrior Project

CHAPTER 1

Introduction

Problem Statement

Due to advances in technology since 2001, military members are increasingly surviving service-related injuries which in previous wars would have been fatal (Frappell-Cooke, Wink, & Wood, 2013; Wilcox, Schuyler & Hassan, 2015). The use of improvised explosive devices (IEDs) as a signature weapon accounts for many of these injuries, and these devices often cause extensive polytrauma, including amputations, reproductive and genital injuries, burns, blindness, and traumatic brain injury (TBI) (Frappell-Cooke et al., 2013; Ritchie, 2017). Genitourinary (GU) injury has emerged among these injuries as one of the signature wound of the conflicts in Afghanistan and Iraq due to the prevalence of IEDs as well as advances in battlefield medicine (Bray, 2013; Frappell-Cooke et al., 2013; Han, Edney, & Gonzalez, 2013; Serkin, Soderdahl, Hernandez & Patterson, 2010).

According to the Department of Defense Trauma Registry (DoDTR), from October 2001 to August 2013, nearly 1,400 U.S. male service members, with an average age of 24 when injured, have sustained GU injuries (Janak, Orman, Soderdhal, & Hudak, 2017; Bob Woodruff Foundation, 2014). GU injuries ranged from 7.2-12.7% of all injuries from 2005-2010 with a historical average around 2-5% prior to 2001 (Dismounted Complex Blast Injury (DCBI) Task Force, 2011). GU trauma has multidisciplinary needs as it influences “psychological, hormonal, [physical], reproductive, sexual, social, and mental health” (Bray, 2013, p. 121). While troop presence and numbers of injuries overall have decreased in recent years, there continues

to be ground involvement remaining in Afghanistan and Iraq, and these injuries have potential long-term implications for overall quality of life.

Increased stress and hardship with reintegration into civilian life after military service are well documented in the literature (Morin, 2011; Prudential, 2012). Further difficulties may exist when a significant injury precipitates the transition to civilian life. Problems with the transition to civilian life can also be related to difficulties with intimate relationships (domestic violence, including child abuse; divorce; risky sexual behaviors; sexual dysfunction; and other barriers to intimacy) and role changes within relationships, leading to increased suicide rates (Bray, 2013; Statcher, Tepper, Thrasher, & Rachel, 2012). Additionally, service members must restructure their lives to accommodate the wounds of war—whether visible or not—and injury and infertility likely strain both new and old relationships.

Positive intimate and family relationships can be a protective factor in helping a wounded warrior during recovery (Tanielian & Jaycox, 2008). The relationships can help to shelter and mitigate vulnerabilities associated with injury by engaging with the service member (Denning, Meisnere, & Warner, 2014). By increasing understanding of the effect of GU injuries, more effective resources and supports can be put in place to assist these service members and their family members with recovery.

Popular culture has begun to recognize the need for attention to sexual and reproductive health. Anecdotal discussions about military genital injuries have been publicized in stories such as “War is hell (on fertility)” in *Men’s Health* magazine (Roberson, 2011), “Amputations and genital injuries increase sharply among soldiers in Afghanistan” in *The Washington Post* (Brown, 2011), “Repairing wounded soldiers' sex

lives” in *The Atlantic* (Jaafari, 2016), or in the best-selling book, *Grunt: The curious science of humans at war*, with a chapter entitled “Below the belt: The cruelest shot of all” (Roach, 2016). Many of the accounts of military-related GU are primarily published in newspapers which often recognize and sensationalize the experience rather than observe and understand it.

Despite the unprecedented increase of surviving military members with this injury, there have been few reports on the consequences of GU trauma (Janak et al., 2017). Existing reports have been primarily medically focused and presented from the perspective of individual surgeons or medical treatment centers (Janak et al., 2017; Serkin et al., 2010). Some ongoing research—such as the Trauma Outcomes and Urogenital Health (TOUGH) project, based from the DoDTR—has emerged and is in its infancy, aiming to understand both the physical and psychological aspects of GU injury, while other researchers, doctors, and support staff have begun to speculate about the possible psychological implications of GU injury and acquired infertility (Bray, 2013; Frappel-Cooke et al., 2013; Han et al., 2013). Even so, more evidence-based research is needed to fully understand how a GU injury can negatively impact a service member’s recovery and reintegration into home and civilian life, particularly research addressing the ways in which reproductive health influences this recovery and functioning in intimate relationships. There is limited understanding of the consequences and the costs—financially, physically, and emotionally—of these injuries.

The nature of a GU injury causing loss or damage to organs that define being male or female can lead to grief and loss around ego and sexual identity (Bray, 2013; Janak et al, 2017; Wilcox et al., 2015). Limited literature exists regarding the

epidemiology and impact of male GU injuries with one recent study on female GU injuries (Bray, 2013; Ditchel, 2012; Janak et al., 2017; Reed, Janak, Orman, & Hudak, 2018). One qualitative study was completed in the U.K. to gain a preliminary understanding of the psychological impact of genital injury (Lucas, Page, Phillip & Bennett, 2014). Although attention to, awareness of, and resources for GU trauma continue to grow, there are needs for improved medical and psychological resources and care for helping service members deal with impaired sexual function and family building options (Ditchel, 2012; Janak et al., 2017). The history of limited support likely stems from professionals and service members avoiding discussions about genital injury and aid in recovery because of the topics' taboo nature (Ditchel, 2012; Edney, 2012).

Little attention has been placed on understanding the long-term psychosocial consequences of fertility on life development. With insufficient research and aid, as well as multiple policy barriers restricting equal and adequate treatment of military members and veterans with GU injuries, there is limited self-determination and access to necessary medical procedures to improve reproductive health. Long-term transition services and standardization of care for GU trauma are minimal (Bray, 2013; Covington, 2017). The American Society for Reproductive Medicine (ASRM) and RESOLVE: The National Infertility Association provide advocacy, supporting policies that obtain improved and fair fertility services and working through Congress for military members and veterans. Their efforts include attempts to permanently overturn a ban on in vitro fertilization (IVF) that exists in the Veterans Health Administration (VHA) within the Department of Veterans Affairs (VA) (Caballero & Covington, 2017).

Research Aim

This research is a qualitative, exploratory study of service members and veterans with GU injury who have impaired fertility. The study uses a phenomenological approach of in-depth interviews to ascertain the personal meaning of the injury. The purpose of this study is to examine how the lived experience of the biological, psychological, and social recovery from military-related injuries that impair fertility interact during recovery and beyond. The study aims to discover how the injuries (physical changes and limitations, including GU trauma in the context of polytrauma, TBI, and/or amputations) and the associated reproductive health issues impact subsequent attitudes about family development, sexual functioning, and quality of life. Within quality of life, biopsychosocial issues related to reproductive and sexual health, intimacy, mental and physical health, and social relationships are examined.

The study explores the recovery process from GU injury and the adaptation to the new normal. The meaning of recovery has unique aspects for each individual (World Health Organization (WHO), 2017). No one definition encompasses recovery, yet recovery can be thought of as the process of “regaining control of identity and life, having hope for life and living a life that has meaning whether that be through work, relationships, community engagement or some or all of these” (WHO, 2017, p. 14). The study explores how GU injuries hinder or influence recovery and construction of future purpose and generativity.

The WHO defines health as “a state of complete physical [bio], mental [psycho] and social well-being, and not merely the absence of disease or infirmity” (WHO, n.d.a, p. 1). Reproductive health is an important aspect of the biopsychosocial recovery from GU

injury, the process post-injury that includes biological and psychological history and outcomes while considering how the social environment may influence recovery across the life course. If a service member wants to procreate, whether it is with a current partner or someone in the future, the injuries from war and available treatments can play an important aspect in the recovery process.

The definition of family has changed dramatically in recent years partly due to advances in assisted reproductive technology (ART), as well as changes in societal views and legislation around alternative family building. Additionally, there is a perspective that family can now be defined as a committed couple without children. For the proposed research, the term of family development refers to engagement in an interpersonal relationship that involves physical and/or emotional intimacy within a couple which may or may not include any previous or resulting children. The goal is to understand how the injury affects their views on family development, being in an intimate relationship, and becoming a parent.

Analysis of the primary, GU injury and the secondary implication of impaired fertility occurs in the context of additional injuries altering other facets of life and functioning. This research is grounded in the three basic assumptions: GU injury is often difficult to discuss, thus more likely to be ignored; it significantly impacts intimate relationships due to its sexual and reproductive nature; and it affects service members in different ways depending on age, reproductive history, and marital status at the time of the injury. A GU injury will be one turning point in the military member's life course, and subsequent impaired fertility issues will be a second turning point when applicable.

The primary research question for this study is to explore how military members with GU injuries experience the injury and, in particular, how the impaired fertility influences the individual's attitudes on intimate relationships, quality of life, and consideration of fertility treatment. The population includes injuries incurred from the years 2001 to 2014. The focus is to better understand how the fertility injury fits into the overall injury and recovery process and how the GU injury changes the life trajectory and narrative around family development. This study is unique because of its focus on fertility and family building.

Theoretical Framework

The use of a life course perspective to explore the biopsychosocial recovery process promotes a multidisciplinary approach to understanding the complexities of GU injury within the larger social context. Many questions exist about how military-related GU injuries impact overall quality of life, and even more questions arise around how the reproductive trauma and resulting infertility impact identity and subsequent life views. The use of the life course theory and reproductive story model provide the different levels of theoretical analysis to understand GU trauma as well as the need for further research for improving both healthcare policy and practice.

The life course perspective helps provide the framework of how a service member experiences an injury and his subsequent life development through biological, psychological, and social factors influencing recovery and resilience within the individual. Focus is placed on how biopsychosocial aspects intertwine in an individual's life course with an emphasis on timing around intimate relationships and reproductive health as developmental phases.

Lives are ever changing with no real knowledge about what the future holds. Social expectations might guide a person's life course, but there are many aspects that influence what way a life course goes, including individual agency. The life course perspective provides the overarching framework to understand the recovery process in general and how life trajectory shifts due to various forces. To aid in the understanding of the GU injury and subsequent impaired fertility, the reproductive story model, which considers reproductive traumas, frames fertility and sexuality aspects in the reproductive narrative of the life course. With each of these models, a specific emphasis is placed on health, as related to the physical injury, and intimate relationship, as related to developmental phase and the sexual nature of the injury.

Outline

The chapters that follow examine and discuss how biopsychosocial discourse operates within the life course and reproductive story for service members who incur injuries impairing fertility. Chapters two and three review the background of the current war, the culture of the military, demographics, overview of injuries, and the existing literature available around GU injuries. Keywords such as trauma, polytrauma, TBI, and GU trauma are further developed and discussed as a structure for understanding the complexities of these injuries. Chapter four discusses and defines reproductive health and infertility while connecting to GU injury. Chapter five provides an overview of life course perspective and reproductive story model, including defining reproductive trauma. These theoretical frameworks are woven together with the concepts of military culture and background, GU injury, and infertility to provide the context of the recovery from military-related GU injury. The first five chapters aim to examine previous assumptions

and understanding of the phenomenon, as well as providing a perspective to analyze of the data on multiple levels. Chapter six describes the research design and methodology, recruitment and sample criteria, and data analysis process. Chapter seven presents the empirical findings from this study while chapter eight discusses the findings and implications for policy and practice.

CHAPTER 2

Literature Review:

The War on Terror and Understanding the Military Context

This chapter provides the underlying background for understanding military-related GU injuries. The purpose is to recognize the cultural, historical, demographical, and social contexts impacting how a person experiences military-related GU injury. The population of service members and veterans within military culture, demographics, and acquired-injuries will be defined in respect to the experiences of the post-9/11 War on Terror service member and veteran. Understanding how military culture and service experiences influence recovery from these injuries provides a foundation for understanding the secondary injury of infertility.

Overview: The War on Terror

On September 11, 2001, a series of four attacks (two in New York, one in Virginia, and one in Pennsylvania) on U.S. territory and were perpetrated by al-Qaeda, an Islamic terrorist group. In response, U.S. military forces were deployed on October 7, 2001, beginning what is now known as Operation Enduring Freedom (OEF), the first phase of the War on Terror (Torreon, 2016). Around mid-2002, more troops were deployed to Kuwait amid debate about also sending troops to Iraq due to growing concerns of additional terrorist attacks. On November 8, 2002, the U.N. Security Council found Iraq to be in breach of U.N. resolutions prohibiting the collection of weapons of mass destruction. Due to Saddam Hussein's refusal to cooperate, on March 19, 2003, U.S. military forces were directed by the President to take action—designated as

Operation Iraqi Freedom (OIF)—U.S. forces initiated direct combat operations against Iraqi forces (Torreon, 2016).

In March 2009, President Barack Obama authorized the deployment of 17,000 additional service members to Iraq with a new strategy described as the War on Terror (Wilson & Kamen, 2009). By December 1, 2009, an additional 30,000 service members were authorized for this conflict with the intention of beginning to bring troops home about 18 months later (Torreon, 2016). After 13 years of U.S. presence in Afghanistan, on December 28, 2014, President Obama and Secretary of Defense Hagel announced the end of the OEF (p. 7). Yet the war in Afghanistan still continues with Operation Freedom's Sentinel (OFS) and a U.S. military presence of about 8,400 troops in Afghanistan (Department of Defense (DoD), 2017; Torreon, 2016). Overall, 2,383 U.S. troops have been killed during OEF and OFS and 20,104 have sustained injuries (Fischer, 2015; Jenkins, 2016).

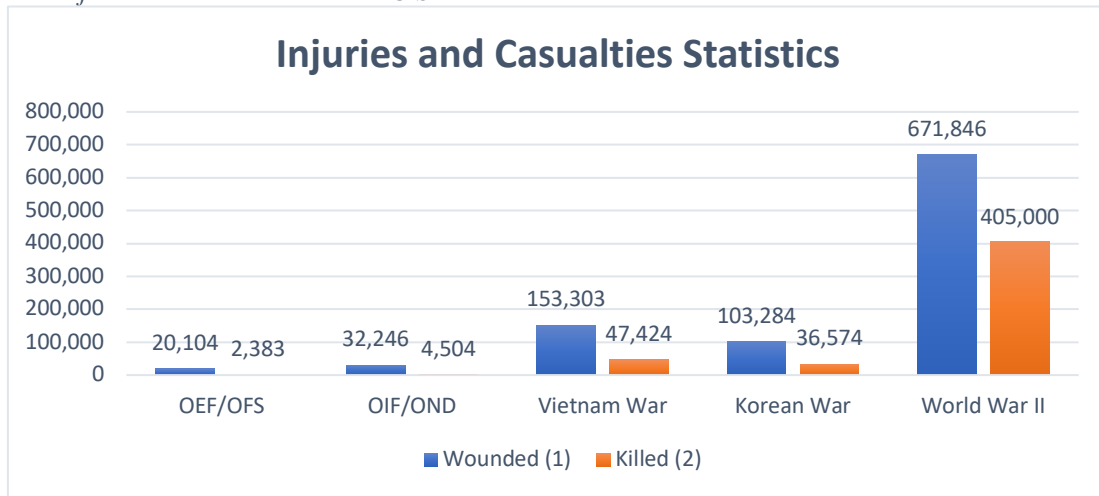
President Obama offered new tactics, changing OIF to Operation New Dawn (OND) on February 17, 2010, as a way to emphasize the decreased role of U.S. troops in Iraq (Wool, 2015). OND's purpose was to advise and assist Iraq's security forces with counterterrorism efforts, and it ended on December 15, 2011 (Torreon, 2016). Through OIF and OND, 4,504 U.S. troops lost their lives with 32,246 injured (Fischer, 2015; Jenkins, 2016). However, attempts to completely end the conflict and withdraw troops from Iraq have been unsuccessful. On October 15, 2014, the DoD expanded the War on Terror, designating Operation Inherent Resolve (OIR) to combat the Islamic State in Iraq and the Levant (ISIL), a terrorist group, along the Syrian-Iraq border (Torreon, 2016, p.

9). OIR continues, and troops remain in Iraq with about 5,500 U.S. personnel present (DoD, 2017).

This research concentrates on the injuries that occurred during OEF/OFS and OIF/OND. Through these wars, over 52,000 service members have been wounded in action and over 6,800 have died (Defense Casualty Analysis System, 2017). No absolute resolution towards the War on Terror has been made. While there has been some movement, terrorist threats continue to exist (Jenkins, 2016). Active military presence in a variety of terrorist-related and peacekeeping roles persists around the globe to combat the War on Terror, and injuries and deaths continue.

The war in Afghanistan has now been the longest war in U.S. history, although it is smaller in comparison to most other U.S. wars. The Civil War saw the deaths of 364,511 of the 2.2 million soldiers serving in the Union forces; (authoritative statistics for the Confederate states are not available, but estimates are 133,821 deaths for the 1.1 million who served); World War II had over 16.1 million U.S. military personnel deployed with 405,000 killed in the conflict and 671,846 injured; in the Korean War over 5.7 million served with 36,574 deaths and 103,284 wounded; and the Vietnam War, involving more than 3.4 million service members deployed to Southeast Asia, created 47,424 U.S. service member casualties with 153,303 wounded (see Graph 2.1) (as cited in Tanielian & Jaycox, 2008; DeBruyne, 2017). Whereas in World War II about 12% of the population was in the military, in the wars since 2001 only about 0.5% of the population have served (as cited in Hoffman & Kruczek, 2011, p.1102). The War on Terror is significant from a historical context yet in many ways remains different from previous wars.

Graph 2.1
Total injuries and casualties across U.S. wars



The post-9/11 wars vary from prior conflict for a couple of reasons. This war has no real boundaries with no clear beginning or end, no specific battlefield, and involves multiple combatants (i.e., ISIL, al Queda, etc.) rather than another army (Raz, 2012). The current U.S. military is also a volunteer-based organization versus a draft or conscription military force. Being volunteer-based, with the need for a large number of ground forces, has led to multiple operational and combat deployments for many service members. The nature of the mission and the subsequent exposures that are therefore present have led to complex injuries and witnessing of deaths, injuries, and overall human suffering. Service members have to go back and forth, readjusting to home and deployment, which requires different skills and conflicting mentalities. Lastly, due to the nature of the combat environment and the weapons used by enemy forces, such as the prevalence of IEDs, many service members have sustained multiple and complex injuries. With related advances in medicine, particularly with battlefield medicine and rapid evacuation of injured service members, unique consequences have emerged for those service members who in previous conflicts would have died. They have experienced extensive injuries

generating new phenomena, such as the increased rate of infertility due to these now-survivable injuries.

Defining the Population: Military Life and Transition After Service

The Department of Veterans Affairs (VA) (n.d.a) defines a service member as any military personnel of the “uniformed services” (including the Air Force, Army, Coast Guard, Marine Corps, or Navy)¹, National Guard and Reserves, the Commissioned Corps of the National Oceanic and Atmospheric Administration (NOAA), and the Commissioned Corps of the Public Health Services (para.1). A veteran is considered “a person who served in the active military service and who was discharged or released under conditions other than dishonorable” (VA, n.d.b, para. 1).

Approximately 2.7 million U.S. service members have been deployed to combat operations in the post-9/11 War on Terror (Ritchie, 2017). Because of long and/or multiple deployments, service members often have to put life plans on hold, such as education, marriage, and reproduction (Hoge, 2010). Many of these young service members are in “emerging adulthood” and in new romantic relationships, still looking for a life partner or exploring sexuality (Arnett, 2006). According to the DoD (2016), in 2015 over 43% of active duty service members were under age 25 and approximately 65% were under age 30 (p. 35). Over 75% of active duty service members have high school diplomas/GEDs or some college as the highest level of education (p. 39). Across all branches, about 41% have never been married nor have children (p. 41 & p. 128) with an average age of 31 for marriage (p. 46).

¹ For a further breakdown of the functions and command of these branches, visit: https://www.mentalhealth.va.gov/communityproviders/docs/structure_branches.pdf or <https://www.defense.gov/About/Military-Departments/Uniformed-Services/>

Culture. The military maintains a unique, rich, and diverse culture comprised of shared values and history. Even between and among branches, there are varying subcultures due to their unique missions and operational histories, as well as their differing skill sets, equipment sets, and even differing uniforms. Each has its “own unique traditions, language, value systems, and procedures” (VA, n.d.c, para. 2). These cultures and subcultures often influence individuals’ beliefs, expectations, and behaviors, as well as time and place of service and military occupation (VA, n.d.d).

While there are multiple aspects of military culture that can be considered, this chapter and study will highlight two: military unit cohesion and themes of masculinity. These two aspects of military service and culture highlight the importance of the social aspect of linked lives (unit cohesion) and gender identity and sexuality (masculinity) in considering the recovery from a GU trauma. The thread of morale and cohesion as a strong and tough group of individuals, both physically and mentally, is tied to masculinity and woven through the underlying culture of military life.

Unit cohesion. While the idea of unit cohesion, in particular cohesion within the small primary military unit, can be dated back to Carl von Clausewitz with additional influence by Sigmund Freud, the official, modern term emerged in the 1980s when the U.S. Army recognized that the stressors of war impacted an individual and risked detachment from others (Epps, 2008; Jozwiak, 1999; Manning, 1994). Army Chief of Staff Edward Meyer placed an emphasis on unit cohesion through “the bonding together of soldiers in such a way as to sustain their will and commitment to each other, the unit, and mission accomplishment, despite combat or mission stress” (as cited in Manning,

1994, p.4). This idea does not emphasize the wellbeing of the individual but rather sustaining the unit and the success of the mission (Cater, 2012).

The military builds a culture of cohesion among the different units and places value on the group over the individual, thus forming a collectivist culture (Hynie & Burns, 2006; Oyserman, Coon, & Kimmelmeier, 2002). Cohesion allows an emotional bond between service members, creating a shared identity and camaraderie that remain throughout military service and beyond (Burk, 1999, p. 447). Social support and group cohesion play a much more crucial and central role for a soldier in combat than they do in civilian life (Manning, 1994). This camaraderie may impact recovery from injury in many ways, such as positively with continued social support or negatively with feelings of isolation if there is limited ability to actively partake in unit cohesion.

The importance of connection to others and social ties is an vital aspect of emotional well-being and recovery. The limited ability to engage in unit cohesion necessitates redefining individual identity away from the collectivistic culture, which may be a challenge for the service member separated from his peers after a serious injury or after he or she transitions from the unit into veteran status and civilian life. Unit cohesion and the significance of these ties may impact emotional well-being and recovery.

Masculinity. With men making up 85% of the military members, the concept that masculinity plays a role in the military culture makes sense (DoD, 2015). Some historical attitudes about masculinity are rooted in the belief that “male bonding is the cornerstone of small unit cohesion, and that the presence of women undermines this bonding, thus decreasing cohesion and ultimately, readiness” for battle (Rosen, Knudson, & Fancher,

2003, p. 325; Savage & Gabriel, 1976). Many scholars and researchers have examined the function of masculinity in the military, investigating its importance and continued evolution (Barrett, 1996; Brod, 1987; Brown, 2012; Fox & Pease, 2012; Hinojosa, 2010; Ogilvy, 2016; Rosen et al., 2003).

Masculinity in the military started to lose its place in the 1970s with the loss of the Vietnam War, the transformation to an all-volunteer military force, and increased prosperity in the women's movement. In an effort to attract young people, namely young men, recruitment advertisements focused on ways to represent different types of masculinity. More recently, this military masculinity has been challenged by women and LGBTQ rights advocates, especially as evidenced by a U.S. policy elimination of gender-based restrictions on military jobs (Brown, 2012; Reed, Janak, Orman, & Hudak, 2018).

Service members are defined by a "warrior" role (Hoge, 2010). Extensive physical tests and conditioning exercises associated with training are often used to create "a corps of tough, confident, flexible, and prepared Warriors capable of winning in combat and waging successful military operations" (Orsingher, Lopez, & Rinehart, 2008). Toughness includes physical, mental, and emotional characteristics. The idea of a warrior is an essential representation of masculinity, portraying aggression, courage, control over emotions, and willingness to sacrifice in the service of others and/or a higher good (as cited in Brown, 2012).

The military aligns with hegemonic definitions of masculinity, represented through strength, bravery, violence, toughness, and service ahead of the individual (Connell & Messerschmidt, 2005; Ogilvy, 2016). Military service offers opportunities and resources to define masculine identity through "emotional control, overt heterosexual

desire, physical fitness, self-discipline, self-reliance, the willingness to use aggression and physical violence, and risk-taking” (Hinojosa, 2010, p.180). These masculine images subordinate images of femininity and other masculinities (Barrett, 1996). Historically, the way the military has been composed consists of following orders and conforming to expectations, banning women from certain combat jobs, and placing men in positions of dominance over women (Hinojosa, 2010). The emphasis of hegemonic masculinity is placed on the social construct of the order of gender relations and the ideals upheld (Barrett, 1996). Gendered behaviors are shaped by social hierarchies such as “race/ethnicity, class/rank, and sexuality” (Weinstein & D’Amico, 1999, p.5).

As the role of masculinity evolves throughout the military, ties are not solely linked to men. Women often can put on these “masculine” traits in certain circumstances and in military roles as a way to identify and fit in with others (Weinstein & D’Amico, 1999). Functions of masculinity and femininity in gendered identities are ingrained in different practices, structures, and values of the military (Barrett, 1996). However, “feminine” qualities historically have been largely invisible and behind the scenes, such as through caretaking jobs like nursing (Weinstein & D’Amico, 1999).

Trauma and military culture. When considering how a military-related injury and the trauma of a catastrophic event are experienced, the cultural context of the military provides valuable information to better understanding the unique experience in recovery and reintegration. Trauma is an “event, series of events, or set of circumstances experienced by an individual as physically or emotionally harmful or life-threatening with lasting adverse effects on the individual’s functioning and mental, physical, social, emotional, or spiritual well-being” (SAMSHA, 2014, p.7). A trauma affects a person’s

“psychological, biological and social equilibrium,” which alters perceptions and views of the present (van der Kolk & McFarlane, 1996, p. 4). Cultural beliefs, availability of social supports, and developmental stage of the individual are all variables that factor into how a person experiences a trauma (SAMHSA, 2014). While a traumatic event and experience can be personal and subjective, the phenomenon and effects of trauma can also show consistency across cultures and between individuals (Lever, 2012, p.10). This means that the effects of trauma are not culturally bound, but rather culture helps in understanding the experience.

Injury and military culture. Military culture represents a context within which the trauma occurs, and the presence of military unit cohesion, other social supports (or lack thereof), and ideas around masculinity provide a foundation for how the service member will experience the recovery from injury. With complex polytrauma that often occurs with GU injury, there are multiple layers to the injury, including brain injury, mental health issues, limb amputation, and internal issues necessitating multiple surgeries. The culture of toughness and the presence of unit cohesion discourages service members from admitting injury as it may threaten the ability to partake in military duties (Tanielian and Jaycox, 2008). The denial of injury is particularly prevalent with TBI and mental health disorders such as post-traumatic stress disorder (PTSD), which are invisible and can be seen as a way to malingering. These injuries are more difficult to diagnose, occurring internally and not always readily noticeable to the outside world, just as GU injuries are typically not apparent. When the body is broken or bleeding, the more visible signs of injury allow for more understanding.

Mental health stigma is impacted by the “family” of unit members, where even the perception of weakness can affect morale and cohesion, which in turn can contribute to mission failure” (Hoge, 2010, p.173). Similarly, Tanielian and Jaycox (2008) found that the three cultural influences that presented barriers to utilizing mental health services included “attitudes and beliefs about mental health and treatment-seeking, unit cohesion, and unit dynamics” (p. 323). Only about 23-40% of those with a mental health diagnosis seek treatment (Hoge et al., 2004).

Often treated as a “feminine” experience, the idea of trauma “as a loss of control over oneself” can be seen as a breakdown in masculinity because it challenges and fails in the ideals of aggression, violence, and self-discipline (Fox & Pease, 2012, p. 20). The failure of stoicism, tied to mental health and not being able to control emotional response, is a failure of masculinity and the military identity. Unit cohesion and the connected unit morale and beliefs can place either protective or risk factors for development and treatment of mental health disorders (Kanesarajah, Waller, Zheng, & Dobson, 2016).

Yet mental health issues present a real existence in the military, as there are high levels of psychological, substance abuse, and physical health problems for post-9/11 veterans (as cited in Ahern et al., 2015). Suicide continues to increase for service members and veterans of the post-9/11 wars and is above the general population for the first time since the Vietnam War (Pease, Billera, & Gerard, 2015; RAND, 2011). The primary factor for suicide is often related to failed relationships and presents an elevated risk period directly after separation from the military (Garrick, 2017; Pease et al., 2011).

Transitions and Reintegration. Two considerations exist when examining reintegration, or the transition back to daily life and tasks, for an injured service member.

The first is reintegration from military life to civilian life. Regardless of an injury, literature illustrates the many difficulties and challenges associated with that transition (Morin, 2011). The second consideration is the transition from life as an able-bodied, strong, and independent individual to life as an injured person figuring out how to reintegrate into society.

Military to civilian life. The transition from military to civilian life, each with different cultures, can be difficult for many service members, especially those who have served in the post-2001 War on Terror and experienced the increased number of combat and non-combat deployments (Morin, 2011). Transition to civilian life might mean engaging previously delayed tasks, such as finding an intimate partner, starting a family, or developing a career (Hoge, 2010). Although service members will still identify with the warrior role, they will need to learn to “dial up or down the warrior responses depending on the situation” (p. x). Blending military and civilian cultures can be a tough exercise in learning how to appropriately incorporate the warrior response into civilian life. Understanding military identity and culture—which is inherently different from civilian culture—offers a basis for understanding the potential challenges that a service member faces when transitioning out of the military post-injury.

The social support networks and daily routines change considerably in civilian life. The military is viewed as a family unit that cares for the individual and provides a structure of expectations (Ahern et al., 2015). Without being on a military base, the service member and the associated social communities are not as readily available to provide rules or opportunities. A veteran will need to discover new ways to create social

connections. Civilians often do not have a full understanding of military culture and identity, creating difficulties for veterans in finding commonalities.

Veterans have often experienced multiple deployments, disrupting connections to family members and friend and increasing detachment during reintegration. Dynamics in the home will shift as a veteran re-establishes roles within the family (VA, n.d.e).

Navigating assertion and restoration of roles and expectations create additional stressors for the veteran and family members.

Military structure provides clarity and simplicity to decisions and expectations that are not present in civilian life (Ahern et al., 2015). The veteran will now be responsible for meeting basic needs like food and clothing, finding a doctor and dentist, filing insurance claims, etc. (VA, n.d.e). In the military, food, clothing, and other basic necessities, as well as provisions for medical care, are often provided with little choice. These basic structures are no longer present in civilian life.

Transitioning to civilian employment is often one of the most difficult experiences a veteran faces (Prudential, 2012). Approximately 53% of veterans will experience a period of unemployment after leaving the military, but most find employment within 6 months (VA, 2015). Commissioned officers and those with college degrees tend to fare better with the transition to civilian life and employment compared to enlisted service members and those for whom high school graduation is the highest level of education (Morin, 2011). Veterans may feel they have to start over as a civilian in employment while figuring out how military experience translates to civilian employment (Kintzle et al., 2015). Many veterans may have never applied for a civilian job, including the need for a resume and interviewing (VA, n.d.e). The culture of individualism in

civilian life also often pits employees against one another for promotions. Putting the self first, instead of participating in a cohesive unit and placing the group mission ahead of the individual, is often foreign to a veteran. In civilian life, duty ends at the conclusion of the business day whereas in military life being “off-duty” and “out of uniform” still includes all the responsibilities of the warrior’s oath of service.

Injury, cultural experiences, and transitions. A complex system of care occurs when a service member is injured. First, immediate battlefield medicine occurs with the patient often being moved back to the base or camp followed, for those with serious injury, by rapid evacuation out of the combat zone. In the current deployments in Afghanistan and Iraq, this means evacuation to Landstuhl Regional Medical Center (LRMC) in Germany and eventually transfer to a military treatment facility (MTF) in the U.S. The injured service member will stay at the MTF until stabilized and able to move to outpatient rehabilitation. Often due to extensive injury, the service member will retire and his or her care will transfer to the VHA hospital in the geographic area where the new veteran chooses to settle-typically their hometown.

Multiple cultural forces influence a severely injured service member’s transition from the military hospital to civilian life with the injury serving as an additional stressor. Prior to being injured, most of the service members are in the best physical condition of their lives and are physically active and completely independent. After an injury, the service member will have to rely on others for some daily activities and ongoing aid in recovery. When there are multiple, complex injuries necessitating long-term care, the service member will first receive services in an MFT and eventually be transferred to the VHA and/or the private sector (Baker, 2014). All three present different cultures, and

additional challenges arise when an individual must advocate for his or her needs and navigate VHA and private-sector medical facilities without the structure the military provides.

Having an emotionally traumatic experience such as knowing or observing someone killed or injured in combat puts a veteran at increased risk for difficulty with reintegration (Morin, 2011). Mental health issues and substance abuse are also risks associated with experiencing trauma (Center for Substance Abuse Treatment, 2014). One study found that over 30% of patients with a physical trauma reported an unmet need for vocational and mental health services, creating barriers to civilian life (Archer, Castillo, MacKenzie & Bosse, 2016). Mental health services were not accessed either because service members felt they could get better on their own and were unsure where to go for assistance.

Although more research is needed to understand the risks, researchers believe that there is an increased risk of suicide for service members who sustain injuries to the GU system (Grady, 2017). What is noteworthy is that service members who sustain GU injuries have a high rate of experiencing polytrauma (Frappell-Cooke, 2013; Janak, Orman, Soderdahl, & Hudak, 2017; Waxman, Beekley, Morey, & Soderdahl, 2009). Because GU trauma tends to be secondary damage that does not pose a primary threat to life, other life-saving procedures occur prior to dealing with the GU injury. Additionally, while the U.K. military will conduct sperm salvage without consent, the U.S. doctors are not allowed to do so, highlighting the way that GU injury is dealt with in a secondary nature (Grady, 2017).

In the early 1990s, the VA instituted a law prohibiting the use of IVF treatment for veterans within the VHA due to ethics related to the creation of embryos and anti-abortion sentiment (Adamson, 2017). Due to related controversy, there is also a complete ban on the use of third-party reproduction within the military and veteran medical facilities. Recent changes within the DoD have allowed some ART coverage for those service members, with a lawful spouse, who have infertility issues due to service-related injuries incurred while on active duty. Prior to this, once service members transitioned to the VHA, they were no longer eligible. Most of these service members have extensive injuries which contribute to medical retirement and subsequent transfer to the VHA system, thus putting another barrier in place.

Senator Patty Murray of Washington championed a bill addressing the ban and need for infertility treatment (Caballero & Covington, 2017). With much effort and advocacy, this bill was passed. It provides some relief to wounded warriors desperate for assistance in covering the cost of IVF, but it is an amendment to a one-year VA funding bill and a temporary fix. While the provisions of the bill will supersede the ban on offering IVF for the coming year, a yearly reauthorization is needed and—due to the appropriations process—might prove difficult. The ultimate solution lies in repealing the ban altogether, something Senator Murray intends to pursue (Caballero & Covington, 2017). This ban and the difficulties with obtaining fertility treatment for wounded veterans are rooted in historical notions about rehabilitative care, masculinity, and having children outside the confines of marriage with use of donor sperm or ART and dates back to the treatment of veterans paralyzed during World War II (Gutler, 2013).

Summary

The connection between military culture, reintegration into civilian life, and the historical context of the War on Terror when combined with a GU trauma produce the multifaceted complexities examined in this dissertation research. Unit cohesion and masculinity postulate additional forces that impact reintegration after injury. The consideration of military culture and experience during rehabilitation and recovery affords an understanding of the secondary (or even tertiary) injury of infertility.

CHAPTER 3

Literature Review: Genitourinary Trauma

This chapter provides an overview of injuries from the War on Terror and discusses some of the relevant medical research available as to the causes of GU injury in relation to the complexities and extent of the injury, including polytrauma. Existing research contributing to the understanding of GU injury is explored, as well as areas in need of further investigation. This chapter points out that despite a raised awareness from conferences to address GU injuries and sexual dysfunction in military members, there is still little professional literature on the psychosocial implications of GU injuries that address identity in terms of subsequent interpersonal relationships, psychosexual functioning, and fertility.

Injuries of War: Overview, Definitions, Prevalence, and Context

With over 52,000 service members wounded during the wars in Afghanistan and Iraq, a wide range of injuries exist² (Defense Casualty Analysis System, 2017). A major change the War on Terror created is the complexity of injuries that current service members endure in part due to the changes and advancement in the weapons of warfare. As of June 1, 2015, there have been 1,645 service members with major amputations which include “the loss of one or more limbs, the loss of one or more partial limbs, or the loss of one or more full or partial hand or foot” (Fisher, 2015, p. 6). Other complex injuries include TBI, PTSD, and GU injury, all of which have been called the signature wounds of the War on Terror (Ritchie, 2017; Tanielian & Jaycox, 2008). This “signature

² The Defense Casualty Analysis System provides a breakdown of demographics (sex, branch, age, ethnicity, etc.) based on those injured and dead due to all the U.S. wars. More information can be found at <https://www.dmdc.osd.mil/dcasp/pages/casualties.xhtml>

wound” designation is because of the increased number of these specific injuries and the increased awareness and data about the impact of the injuries.

Genital injuries are not new to this war and have been referenced in other popular culture, films, and literature, such as Ernest Hemingway’s *The Sun Also Rises*, Nicholas Spark’s *The Longest Ride*, and an Australian TV series, *A Place to Call Home*. These all reference genital injuries causing infertility from other wars. With the War on Terror, GU injuries increased by nearly 350% from baselines in earlier 20th century conflicts, thus terming GU injuries as a “signature wound” (Hans, Edney, & Gonzalez, 2013).

GU injury overview. Improvements in battlefield medicine have made it possible for service members with complex injuries, including those with GU injuries, to survive at increasing rates (Bray, 2013). According to the DoDTR, from October 2001 to August 2013, as many as 1,367 U.S. male service members sustained a GU trauma (Janak et al., 2017). GU injuries range from about 7.2-12.7% of all injuries from 2005-2010 with a historical average around 2-5% (DCBI Task Force, 2011). Loss of the entire penis and/or one or both testes was documented in 147 service members having these injuries with fewer than five of these service members requiring penile amputations (Janak et al, 2017).

IEDs cause a majority of GU trauma. Other causes, including penetrating trauma (firearms), blunt trauma, and burns, are less likely to result in extensive additional injuries such as limb loss (Serkin et al., 2010). Additionally, spinal cord injuries can affect the GU system. Due to extremely high levels of force and speed of the weaponry, the injuries resulting from this war are much more complex and often more devastating than traditional civilian GU injuries that often result from blunt trauma from falls or car

accidents. Because of the nature and velocity of military rounds, even the war's gunshot wounds are more severe when compared to those created by available civilian weapons (Williams & Jezior, 2013).

Over 80% of GU injuries occurred to those under the age of 30, during the primary reproductive years (Janak et al., 2017). GU injury in males may include impaired function, damage, or complete loss of the kidney, ureter, bladder, urethra, scrotum, testicle, and/or penis while for women GU injury can include damage to the perineum, vulva, vagina, ovaries, fallopian tubes, and/or uterus (Serkin et al., 2010; Edney, 2012). Men usually have a more visible loss and/or damage to reproductive organs than women because of the outer versus inner nature of the genitalia and consequently often causes death for women. The rate of the injuries has historically occurred more in male than female service members as more males are engaged in direct combat activities (Edney, 2012; Reed et al., 2018).

Genital injuries can have physical, social, and psychological effects with ongoing hormonal issues (including infertility), urinary symptoms, and sexual dysfunction (Han et al., 2013; Waxman, Beekley, Morey, & Soderdahl, 2008; Wilcox et al., 2015; Williams & Jezior, 2013). Permanent infertility is a complication of these injuries, making paternity no longer an option (Janak et al., 2017). There has been anecdotal evidence of further GU injury for fertile men who sustained severe blast injury to the pelvis and were—months or years later—found to have testicular atrophy and biopsy-confirmed non-obstructive azoospermia despite no evidence of overt testicular injury at the time of initial presentation, presumably due to delayed effects from the initial blast injury (p.417).

Little is understood about the way war-related exposures and traumas may put service members at increased risk of infertility (Abu-Musa, Kobeissi, Hannoun, & Inhorn, 2008). The full extent of GU injuries' effect on fertility and how infertility can impact recovery is unknown. Serious long-term implications of GU injuries to urinary, sexual, and reproductive dysfunction are also undetermined.

For men within the first 48 hours after injury or death, there are options that allow for retrieving sperm for cryopreservation (Sills, 2014). While the thought of preserving fertility is initially secondary to injury, it is an important consideration for recovery (Lucas et al., 2014). The U.K. military provides sperm salvage as a standard of care for British service members with testicular injury and is the reason that a number of injured British service members have been able to become biological fathers post-injury (Janak et al., 2017). During the acute medical stage of the injury, fertility preservation is often not considered, yet procreation may well become a life-affirming component of healing (Covington, 2017).

Limited research exists regarding the long-term implications of GU injury, although research is growing because of the increased incidents of urogenital injury. Most of the literature is medical in nature, emphasizing the critical need for new treatments to address improvement of sexual, urinary, and reproductive function. As some individuals have a total loss of penis and/or testicles, new and innovative research is in the works to provide: sperm salvage to recently wounded veterans; regenerative medicine, such as lab-grown testicles that can produce viable sperm through natural intercourse; and functional penial transplantation (Healy et al., 2016; Kime, 2016; Sopko et al., 2017; Tuffaha et al., 2017).

The TOUGH project, based in Texas and using the DoDTR, is at the forefront of providing literature specific to U.S. service members' GU injuries. Three studies have been released from the TOUGH project that provide key findings, including that most GU injuries occur to the external genitalia with severe testicular and/or penial injury in a majority of patients and concur with polytrauma comprised of amputations, colorectal injury, and TBI (Janak et al., 2017; Nnamani et al., 2016; Reed et al., 2018).

Polytrauma. Polytrauma is a term used by the VHA to characterize “the multiple injuries sustained as a result of the same traumatic event” (Poorman et al., 2011, p. 42). Polytrauma is considered to be “two or more injuries to physical regions or organ systems, one of which may be life-threatening, resulting in physical, cognitive, psychological, or psychosocial impairments and functional disability” (VHA, 2013, p. 1).

IED blasts, accounting for around 65% of all injuries, cause one type of polytrauma termed dismounted complex blast injury (DCBI) and create extensive injury to the lower extremities, pelvis, GU, and abdomen (Frappell-Cooke, Wink, & Wood, 2013; Gawande, 2004; Serkin et al., 2010; Williams & Jezior, 2013). DCBI involves “an explosion-induced battle injury sustained by a warfighter on foot patrol that produces a specific pattern of wounds” and “involves traumatic amputation of at least one leg, a minimum of severe injury to another extremity, and pelvic, abdominal, or urogenital wounding” (DCBI Task Force, 2011).

Polytrauma survivors often experience feelings of decreased self-esteem and loss of sense of self (Frappell-Cooke et al., 2013). These extensive injuries drastically alter lifestyle, often causing more distress, higher rates of depression and PTSD, and slower recovery times (DCBI Task Force, 2011; Wilcox, Schuyler, & Hassan, 2015). Injury—

particularly traumatic amputation—can impact a service member’s perception of “wholeness” as a person, which can impede reintegration to civilian life (Cater, 2012). Polytrauma causes lifelong consequences for the survivor and his or her significant others (Frappell-Cooke et al., 2013).

Significant improvements have been made to advance rehabilitation and quality of life of these wounded warriors through interdisciplinary work to care for the whole individual, both spiritually and physically (Rivera & Pasquina, 2016). Efforts to recognize and address the unique and multilevel complications of these injuries have included classes, counseling, and programming, all of which emphasize innovative techniques for having sex that incorporate the new realities of the injuries and ways of being physically and socially active through adaptive sports and recreational programs (Jaafari, 2016; Rivera & Pasquina, 2016).

Sexual health and dysfunction. Sexual health is defined as “a state of physical, mental and social well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences” (WHO, n.d.b, para. 1). Sex is a valued human activity that is rooted in biological drives and needs, and sex can be an important way to communicate and receive intimacy. Sex and sexual health contribute to overall health and are important parts of daily living (Jannini, Fisher, Bitzer & McMahon, 2009).

Sexual dysfunction, which is often an unrecognized consequence of combat and associated trauma, has received increased attention lately (Breyer et al., 2014). Physical and/or psychological disabilities can trigger interruptions of intimate relationships and halt sexuality development (Cameron et al., 2011). Sexual health and functioning,

impacted by stress, is a predictor of physical and emotional health, as well as the quality of life (Greenberg, 2017; Kubin, Wagner, & Fugl-Meyer, 2003; Wilcox, Redmond, & Hassan, 2014). A traumatic event can have the effect of calling “into question basic human relationships,” thus impacting intimacy and sexual functioning (Herman, 1997, p.51). Specifically, TBI and PTSD can directly or indirectly cause sexual dysfunction through the consequences associated with the diagnoses, including comorbid conditions, relationship instability, partner stress, parenting problems, and poor social supports (Cameron et al., 2011).

TBI and PTSD. A TBI is “caused by a bump, blow, or jolt to the head or a penetrating head injury that disrupts the normal function of the brain,” classified from “mild” to “severe” or “penetrating,” and has potential physical, cognitive, and emotional consequences (Centers for Disease Control and Prevention (CDC), n.d.). CT scans and MRIs can aid in diagnosis as can taking a history of physical injuries that might have injured the brain. According to the Defense and Veteran Brain Injury Center (DVVIC, n.d.), during the period of this study, there have been 361,092 reports of TBI with classifications ranging from unclassifiable to severe (Fischer, 2015). These incidents were sustained in day-to-day activities, military training, or deployments (DVVIC, n.d.).

TBIs have an impact on the pituitary gland, which can, in turn, impact the endocrine system (Taylor, Anderson, McNamee, & Adler, 2014). This can subsequently impact sexual hormones, testosterone, and estrogen, which can contribute to fertility dysfunction. TBIs have been associated with increased “impairment in personal functioning, leading to interpersonal and occupational difficulties” (Hoffman & Kruczek, 2011, p.1100) and “inhibit activities crucial to maintaining intimacy in a relationship”

(Tanielian & Jaycox, 2008, p. 142). Medications used to treat TBIs can impact sexual intimacy, including erectile dysfunction.

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; American Psychiatric Association, 2013) provides eight criteria for the diagnosis of PTSD. The first criterion is direct or indirect exposure to a traumatic event. A trauma is subjective and is defined by the meaning the individual ascribes to it in the social context (McFarlane and van der Kolk, 1996, p. 26). The *DSM-5* classifies the aftereffects of the trauma in four categories: (1) re-experiencing (through thoughts, nightmares, flashback, etc.); (2) avoidance of thoughts or reminders; (3) negative thoughts or feelings (e.g., negative affect, inability to recall key parts of trauma, feelings of isolation); and (4) arousal and reaction (e.g., hypervigilance, difficulty sleeping, irritability). The symptoms must be present for more than one month, impair functioning, and not be due to another underlying illness, substance use, or medication.

The U.S. Army Office of the Surgeon General (OSG), using the Defense Medical Surveillance System (DMSS), tracked 138,197 individuals where “an individual with two or more outpatient visits or one or more hospitalizations” was diagnosed with PTSD (Fischer, 2015, p.2). Reports suggest that approximately 20-30% of combat-deployed service members experience PTSD (Institute of Medicine, 2014). This type of combat-related trauma can cause decreased self-esteem, affecting a person’s sense of self (Wain, Bouterie, Oelshansky, & Bradley, 2011). PTSD can trigger increased health concerns as well as problems with intimacy and sexual functioning (as cited in Breyer et al., 2014; Greenberg, 2017). Just because a person experiences a trauma does not necessitate or guarantee the experience of PTSD, just as a head injury does not equate to a TBI.

More research on PTSD and TBI continues to emerge from this war due to increased awareness and ability to diagnose. Both PTSD and TBI can include symptoms such as “irritability, insomnia, depression, and cognitive deficits” (Greenberg, 2017, p. 73). The overlap of symptoms can make diagnosing difficult and adds to the complexities of treating these injuries. Additional physical, emotional, spiritual, and relational issues often result (DCBI Task Force, 2011; Goodrich et al., 2014; Tanielian & Jaycox, 2008; Vasterling, Verfaellie, & Sullivan, 2009).

GU Trauma and Recovery

The traumas of war can lead to a loss of ego identity as the conflicts between the inner state and external events are integrated into one’s sense of self (Erikson, 1968). A traumatic exposure is likely to affect a person’s identity and sense of self in positive or negative ways. For example, a service member with a GU trauma might be able to improve and increase communication with his or her partner around sexual desires because of the new, specific needs of the injury, or the service member might be embarrassed and not engage in sex and intimate relationships because of the injury. Resiliency factors include biology, social support, and culture (Levers, 2012).

Potentially isolating factors exist inherently in a GU injury due to the private nature of the injury. Infertility alone is often perceived as an isolating experience (Hinton, Kurinczuk, & Ziebland, 2010). With an additional injury such as losing a testicle or having shrapnel embedded in the penis, an injured person faces more isolation because he may be the only one aware of the injury until there is a need for disclosure to others. Since GU injuries are not as visible as other injuries, such as the amputation of a leg or an arm, and require disclosure, they encourage the maintenance of isolation.

History of treating service-related impaired fertility. The idea of rehabilitating injured veteran through providing fertility treatment dates back to the era of World War II with increased awareness at that time of infertility due to war injuries, such as paralysis (Gurtler, 2013). The 1940s and 1950s provided new technologies to rehabilitate men with lost limbs and other disfiguring injuries (Gurtler, 2013). However, while prosthetics were readily accepted as a way to help rehabilitate veterans in the VA after World War II, there was continued resistance towards the use of ART due to the moral, ethical, and religious implications of conceiving a child outside the confines of a marriage (Gurtler, 2013). Although veterans' groups, such as Paralyzed Veterans of America (PVA), advocated for the use of assisted "rehabilitative" technologies for procreation, artificial insemination was banned by the VA (today's version of an Intrauterine Insemination (IUI)) (Gurtler, 2013). The VA further went on to ban IVF in the 1990s, as well as third-party reproduction. Although the VA IVF ban has been temporarily overturned to specifically allow veterans with a service-connected disability that impairs fertility to utilize IVF, it continues to exclude costs of any third-party reproduction, such as, donor sperm (VHA, 2017).

Psychological aspects. With an injury to genital or erectile function, feelings of disabled masculinity can arise as it becomes difficult to separate the ideas of the disabled body, genital injury, infertility, and the social construction of masculinity (Sacks, 2015; Shuttleworth, Wedgewood, & Wilson, 2012). Disabled masculinity ties together the idea of the individual body and the social experience (Shuttleworth et al., 2012). This means that the challenges with GU injury and polytrauma, and the inherent dependencies, provide a new experience for the service member as he interacts with his social

surrounding. With the use of ART to help with achieving fatherhood, a veteran can move from the person who is being cared for to a caretaker to the child (Gurtler, 2013).

As a first and only presentation of its kind, Lucas, Page, Phillip, and Bennett (2014) published a qualitative study on the potential implications of GU trauma in U.K. service members, addressing psychological implications, sexual functioning, and reproductive health. The study reports that those who had more support and knowledge about future fertility issues early in their recovery fared better with mental health outcomes than those who knew less. Of the thirteen people interviewed in this study, eight viewed the GU injury as “more important than losing their legs,” five reported fertility concerns creating a strain on relationships, and nine noted that the injury negatively impacted sexual function. While service members were willing to talk to research clinicians about their injuries, many reported difficulties talking about the GU injuries, even their spouses or partners. Note that this study took place in the U.K. and may not be entirely relevant for U.S. service members as recovery from injury within social, historical, and cultural contexts shapes the experience differently (Frappell-Cooke et al., 2013).

Most of the other articles written have focused on the need for integrated collaborative care, speculating on the psychological implications of GU injury by drawing upon other literature (Bray, 2013; Frappell-Cooke et al., 2013; Han et al., 2013; Wilcox et al., 2015). Because of the dearth of information about the psychological implications of service-connected GU trauma, Frappell-Cooke et al. (2013)—also based in the U.K.—reviewed associated literature related to prostate and penial cancer, spinal cord injury, limb amputation, and acquired infertility and disability to examine and

identify long-term consequences of GU trauma. Prostate cancer patients present with similar physical difficulties to GU injury, including sexual and urinary dysfunction, infertility, pain and weakness, and hot flashes from medical and surgical procedures (as cited in Frappell-Cooke et al., 2013). Studies for prostate and penile cancers suggest that these men do not tend to seek additional medical advice around issues such as pain, sexual dysfunction, and infertility because they perceive it as unmasculine to acknowledge these symptoms or seek medical support (Chapple & Ziebland, 2002; Frappell-Cooke et al., 2013). Regarding infertility as a consequence of cancer treatment and the need to disclose this information to potential partners, research suggests that these patients report increased rates of stigma and shame at disclosure of infertility, causing a barrier to the development of new romantic relationships as well as compromised identities (as cited in van den Akker, 2012).

Wounded warriors wonder about sexual function, libido, and being able to be in an intimate relationship (Wain et al., 2011). Frappell-Cooke et al. (2013) discuss how the GU injury leading to an altered body image and sense of self may contribute to difficulties with initiating and/or maintaining healthy intimate relationships. Support from family members and particularly a significant other, as related to reproductive and sexual health, can help facilitate the recovery process (Frappell-Cooke et al., 2013).

To begin to address the complex needs of GU trauma patients in recovery, a panel of specialists in prevention and treatment of GU injuries emerged in the U.K. and is known as Military Genitourinary Group (MGUG). MGUG collaborates with a multidisciplinary group of individuals in attempting to create an organized and cohesive pathway for physical and psychological care. Members from MGUG put together a

pamphlet which documents and normalizes feelings and reactions to GU trauma and lists sources of mental health services (Frappell-Cooke et al., 2013).

While studies of cancer survivors or other civilian injuries or illness can begin to delineate possible implications of GU trauma, the literature does not adequately address the polytrauma these service members may be experiencing or other important differences, such as age. Most military members with these injuries are younger than those with cancer or other illness. Also, there is no preparation period for GU trauma. Cancer patients have time to prepare for and process their injury, starting with diagnosis and continuing through treatment.

Summary

With limited literature on GU injuries, there can only be speculation about the effects of these injuries and the implications for service members' and veterans' biopsychosocial and sexual well-being. The research available suggests that GU injuries likely impact a person's identity due to the impact on intimate relationships (the ability to be vulnerable and engage in sex), overall biopsychosocial functioning, psychosexual functioning, and reproductive functioning. A better system of treatment for long-term care of these warriors with polytrauma and GU injury is needed, including for sexual functioning and fertility counseling (Wilcox et al., 2015).

CHAPTER 4

Literature Review: Reproductive Health and Infertility

This dissertation examines existing infertility research to identify ways impaired fertility may interfere with or disrupt a service member's recovery and quality of life after injury. This chapter defines reproductive health and infertility and examines current literature about the psychosocial implications of infertility and grief. With this as a basis, I explore how the secondary infertility experience may impact recovery from a GU trauma, causing an additional turning point in a service member's life trajectory.

Creating a family by reproducing is considered a basic component of human existence and marriage, and an emotional crisis can result when one is unable to become pregnant (Griel, Slauson-Blevins, & McQuillan, 2010; Van den Broeck, D'Hooghe, Enzlin, & Demyttenaere, 2010). According to the CDC (2017), about 12% of women "have difficulty getting pregnant or carrying a pregnancy to term regardless of marital status" (Infertility FAQs, para. 2). Infertility affects men and women of all ethnicities and can have psychosocial implications based on one's experiences and culture (Griel et al., 2010). Infertility is culturally and socially driven and has ramifications for many areas of social life and psychological well-being (Franklin & Inhorn, 2016).

Definitions

The WHO (n.d.a, para. 1) defines reproductive health as the "reproductive processes, functions and system at all stages of life. Reproductive health...implies that people are able to have a responsible, satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so."

Infertility is a reproductive health issue and is defined as an inability to conceive and/or

bring a pregnancy to term over 12 months of regular, unprotected intercourse, under the age of 35 (van den Akker, 2012, p. 121).

Infertility can be a negative life experience and condition, incorporating the chronic stress of ongoing medical treatment and the multiple losses (real and symbolic) that are associated with not being able to conceive or to achieve a successful pregnancy. These losses may include social status, identity as a parent, and identity issues around gender, all of which can fragment the sense of self, decrease self-esteem, and increase feelings of helplessness and loss of control (Jaffe & Diamond, 2011).

ART such as timed intercourse with medication (i.e. Clomid or gonadotropin); IUI; IVF; donor egg, sperm, or embryo; and gestational surrogacy are currently available to assist the infertile. The population of people who consider themselves to be infertile and may need ART is compiled of many different subgroups, including single people, older heterosexual couples, homosexual couples, and transgender people, as well as those who have experienced reproductive traumas that have caused them to lose their reproductive capacity.

Social Construction of Infertility

Infertility can be viewed as a socially constructed experience, impacted by both social and cultural structural realities. The role of parenthood can no longer be assumed as more people in the U.S. and other developed countries are choosing not to have children because they do not perceive it to be an innate desire. Griel and colleagues (2010) discuss the nature of infertility as a social construction because of the concept that not everyone wants to have children. Parenthood is a desired social role, and people may not define or present themselves as infertile unless they want to be a parent (Griel et al.,

2010). The presence of infertility is signaled most often by the state of absence (a child) rather than illness or symptoms; thus social stigma may be associated with not having a child (p. 141). Other options exist to achieve parenthood that are beyond a cure for infertility, such as adoption or foster care, which is different than how illness—such as cancer—is treated.

The social construction of infertility varies among cultures and societies, impacting its incorporation into one's identity. The medical model of infertility treats the individual as the focus of medical intervention and is almost exclusively on women, whether it is a male- or female-factor diagnosis. However, in many developed countries, infertility is perceived as a condition that affects the couple; therefore infertility is no longer about an individual undergoing treatment to find a cure (Griel et al., 2010). As a person is unable to fulfill social and cultural roles related to parenthood, a psychosocial crisis can result, leading to psychological distress in which the identity of parenthood is grieved and reassessed.

Fertility is often discussed and presented as a woman's problem, mostly in the context of heterosexual relationships. Treatment is almost exclusively focused on a woman and her body in an effort to achieve pregnancy, even if it is male-factor infertility, yet a man and a woman are traditionally needed to conceive. While the male experience is underrepresented in the literature, infertility can negatively affect men and their psychological wellbeing and need to be considered as well (Malik & Coulson, 2008).

Infertility can be perceived as the failure of the self and body to achieve a desired biological and social state, thereby "spoiling" the identity of the person (Griel, 2002). As the body fails to be able to function with the feminine capabilities of reproduction, a

woman might question her identity and what it means to be a woman. This is also true for men who may be stigmatized and/or perceived to have sexual functioning difficulties if they are unable to procreate (Miall, 1994). Part of the male ego is tied to being able to impregnate his female partner or “get the job done,” and the size and sexual function of the genitals are equated to fertility (Jaffe, Diamond, & Diamond, 2005). Virility, tied to masculinity, is a concept that is often apparent in infertility research on men. The “fertility-virility linkage” suggests that sexual dysfunction and infertility—or the “unfulfilled desire for a child”—are tantamount (Wischmann & Thorn, 2013).

Infertility as Psychosocial Crisis

Infertility occurs within a social structure (family) and context (culture) and can cause ongoing psychological pain (Covington & Burns, 2006). The implications of infertility, being a social construction occurring within a social structure and context, can lead to a psychosocial crisis where former thoughts about identity are questioned. Infertility can challenge one’s identity around gender and sexuality. In object relations theory, women are socialized to form an identity around motherhood and reproduction as they are often the primary caretakers (Covington & Burns, 2006). Men, too, can identify around fatherhood, and the ability to procreate can be viewed as masculine (Miall, 1994). While there are more and more people in the U.S. who are voluntarily childless, there is an engagement with the decision of whether to take on the identity of parent. Those who are involuntarily childless will have to reconstruct their identities as they work through to resolve the psychosocial crisis.

Literature establishes that depression is a common occurrence in women experiencing infertility (Covington and Burns, 2006). Helplessness can be a factor

leading to depression as a result of ego conflicts (Berzoff et al., 1996). Ego conflicts around parenthood can occur during the infertility process as one decides how to proceed forward, and feelings of helplessness are often perceived as a woman gives control of her body to doctors during fertility treatment. The loss of control, feelings of helplessness, and failure to achieve a pregnancy can impact the woman's sense of self and challenge her identity prior to the psychosocial crisis of infertility.

In the limited studies regarding men and the psychological effects of infertility, men often feel the need to suppress their feelings around infertility due to social stigma (Malik & Coulson, 2008). Further, men are less likely to receive emotional support and sympathy than women (Miall, 1994). Male infertility can generate feelings of shame, inferiority, anger, and deficiency (Petok, 2006). Cultural notions about gender and masculinity—such as tongue-in-cheek remarks about men with azoospermia “shooting blanks”—impact a man's experience with infertility (Barnes, 2014). Masculinity is linked to reproductive and sexual health and is driven by culturally constructed meaning (Dudgeon & Inhorn, 2003). Paternity often signifies an achievement towards masculine identity, and infertility can emasculate (p.44).

Traditionally, men are not included in reproductive health interventions (e.g., maternal-child health, contraception, and fertility treatment) (Dudgeon & Inhorn, 2003). Men, as well as women, must relinquish control to doctors during fertility treatment. However, a man also must cede some control to his female partner because she is the one treated as the patient to achieve pregnancy. The feelings of helplessness and isolation associated with infertility, as well as the need to suppress these emotions, contribute to a

decrease in sense of self for men (Malik & Coulson, 2008). Thus, ego conflicts around parenthood might occur for a man's identity as well.

Grief and Infertility

Grief is often associated sadness over the loss of a loved one, but grief can be experienced with other losses, such as loss of a job, loss of a relationship, loss of limbs (injury), or miscarriage. Grief may occur with infertility as one experiences the loss of what was envisioned for the future or the imagined child. The process of grief can be considerably different from person to person, varying in intensity and length (Zisook & Shear, 2009). Grief treatment should focus on the changed connection with the lost object (Martin & Doka, 2000). Incorporating and understanding the loss is an internal experience often expressed in varying outward emotional, cognitive, spiritual, and behavioral responses (Martin & Doka, 2000; Zisook & Shear, 2009). However, grief is ongoing, never fully ending. Different events, people, or thoughts can trigger feelings of sadness even many years later, even when one has successfully incorporated the meaning and reality of the loss (Zisook & Shear, 2009).

Bowlby's grief model (1977) is helpful in understanding bereavement related to infertility (Covington & Burns, 2006; Klock, 2015; van den Akker, 2012). Bowlby proposed four stages of grief: 1) shock and numbness; 2) yearning and searching; 3) disorganization and despair; and 4) reorganization and recovery. The phase of shock and numbness includes a way to protect the self, as the loss does not feel real. During yearning and search, a person realizes the loss and realize the change in the future, trying to fill this void. Preoccupation with loss and sadness are experienced. Disorganization and despair include a realization and acceptance that life will not return to the way it was

before. Feelings of despair, hopelessness, and anger are often present. Finally, during the reorganization and recovery phase, a new normal sets in and the sense of loss decreases, being replaced by positive thoughts. The person adjusts to the new life. The stronger the attachment to the lost object the greater the grief. This attachment in infertility can also include the relationship with the longed-for child (van den Akker, 2012).

Infertility is an intangible or ambiguous loss (Boss, 1999). Thus, grieving infertility (or even miscarriage) can present challenges as there are virtually no customs or rituals to recognize these losses, compared to the death of loved one where there may be a funeral, memorial service, or a donation in commemoration (Jaffe, 2017). The grief can, in turn, feel marginalized or disenfranchised (Doka, 1989). Yet, grief does not occur in “an interpersonal vacuum” and having a ritual can help provide avenues to the social support which facilitate the grieving process (Leon, 2015, p. 234).

Men and women can have a variety of different ways of coping with infertility. Martin & Doka (2000) describe the differences in grief varying from thinking or cognitive (instrumental) to feeling or emotional (intuitive). Some may want to talk about or process the infertility while others may be more action-oriented, such as keeping busy with work (Jaffe, 2017).

GU Injury as a Cause of Infertility

Reproductive health and infertility are relevant when considering recovery for a service member from a major injury. However, the definition of infertility may not always be completely applicable for a service member who has a GU injury. While some must first have 12 months of unprotected sex with no pregnancy to be considered infertile, many of these service members will not need to try before seeking and

examining other alternatives for family building. The injury itself may have caused the removal of testes/penis or uterus/ovaries. Thus infertility is assumed, fitting into the category of sterility.

With an injury to the part of the body that generally defines the difference between male and female, there are likely to be feelings associated with gender identification. For example, if a man loses a testicle or a woman loses her uterus, it can contribute to feeling a loss of masculinity or femininity. Similarly, feelings about personal masculinity or femininity, as well as grief, can arise as a result of infertility (Marsiglio & Hinojosa, 2007).

For many individuals being able to procreate is an important part of their gender identity and sexuality. Masculinity and femininity characterized in one's fertility allow for the transition to fatherhood and motherhood (Covington, 2017). If an injury occurs that causes sexual functioning problems, resulting infertility can place much more significance on feelings of masculinity and femininity and being able to have a biological child. Research suggests that males tend to have increased negative feelings when there is an injury that contributes to sexual and reproductive dysfunction, particularly if being a biological father is perceived as being important (Marsiglio & Hinojosa, 2007, p. 132).

Infertility does not solely impact the service member with the injury. Since reproduction requires two people—both a male (sperm) and a female (egg and uterus)—the injury of infertility becomes a couple's problem that both the service member and partner experience (Covington, 2017). This is particularly true if the injured service member is a heterosexual male since the female partner may now become the primary

patient and the focus of treatment with the need to undergo ART to become pregnant. A separate set of issues would occur in the context of a same-sex relationship.

Infertility is an entirely separate stressor that can impact relationships, reintegration, and generativity. Yet infertility will not be experienced in a vacuum; it may bring up unresolved feeling around the primary injury and trauma. When service members experience the primary combat-injury, they are not thinking about having children, even if they have initial feelings about the infertility. Infertility will assume its own meaning when the service member is ready to procreate. While feelings of isolation may arise from the injury, there may be similar occurrences with infertility.

Helping these injured service members understand and identify consequences to their sense of self, ways to resolve the infertility individually and as a couple, and resources for starting a family, may set the groundwork for determining ways for service members to efficiently and successfully progress toward and reintegrate into life outside the military with these new injuries. The proposed research uses the background of infertility research in speculating how infertility may impede a service member's recovery and quality of life after injury.

CHAPTER 5

Literature Review:

Life Course Perspective and the Reproductive Story Model

The life course perspective emphasizes the importance of social contexts on a number of levels, from the immediate social environment to the historical and cultural influences (George, 2003). The previous three literature reviews recognize this and the complexities of understanding this phenomenon within the unique population of service members who experience GU injury. Those three literature reviews examined the historical and cultural influences of military service and provided a context for understanding genitourinary trauma and the subsequent experiences of reproductive health and infertility while this chapter provides a foundation for the theoretical considerations that frame this study. These four literature reviews offer a scaffolding for understanding the larger phenomenon of military-related GU injury and the micro-macro linkage of the veteran to the larger community.

When a service member incurs a significant and complex injury, their life trajectory is dramatically disrupted. Various factors, such as age, marital status, military rank, and support systems, influence how the recovery journey unfolds going forward and what issues may be faced. A military-related GU injury, by the nature of it, significantly affects the trajectory of reproduction and exacerbates intimate relationship issues. This chapter uses the life course perspective and the reproductive story model to understand how a combat-related GU injury may impact intimacy, reproduction, and family building. These concepts help to drive the essence of the research question and provide an

overarching frame for the implications of this research for practice with individuals from the integration of biological, psychological, and social contexts.

Life Course Perspective

The life course perspective offers a multidisciplinary approach to understanding the intricate context of human development and to better understanding people's lives. Life course encompasses a "sequence of socially defined events and roles [in various life domains] that the individual enacts over time" with cultural, social, and individual variation, recognizing that human development is much more complex than a single-factor explanation (Giele & Elder, 1998, p. 22). The theory offers four basic principles to aid in understanding diverse life course perspectives: historical time and geographic location; timing of lives; link or interdependent lives; and human agency. The underlying concept is that the past influences the future (life span development), meaning that "human development and aging are a lifelong process" (Elder & Giele, 2009, p. 9). The importance of diversity and heterogeneity in the individual lived experience contributes to the developmental process (Elder & Giele, 2009). These basic paradigms guide life transitions and life trajectories. The life course perspective considers the ways in which social institutions shape an individual as interconnected to domains of family, education, and work (Settersten & Mayer, 1997). The interactions of these key principles separate the life course perspective from other sociological and developmental theories.

The life course perspective emerged out of the significant social changes that occurred through the end of World War I to the 1960s. It took form as a theoretical perspective around the 1960s and 1970s with multiple influences from sociological, developmental, gerontological, and psychological researchers and historians. Life course

differs from the concept of life cycle by examining diverse life events and social roles and by considering the entirety of an experience over time rather than as just a sequence of events that occur in a particular time and order (Hendricks, 2012).

Human development as a lifelong process: Origins of life course. Around the 1920s, longitudinal methodology began to emerge through several pioneering research studies. Florian Znaniecki, a Polish philosopher and sociologist, and William I. Thomas, an American social sociologist, teamed together to form a classic sociological study on migration entitled *The Polish Peasant in Europe and America* (1918). This study is an ethnographical account of Polish peasants immigrating to the United States, grounded in empirical data, through personal documents and merging theory and data in an innovative way. The study is a generation-based model that looks at “individual lives in terms of the reproductive life cycle of intergenerational processes and socialization” (Elder, 1994, p.7). While the study does not look at long-term social transitions, it provides a start for understanding lives longitudinally and examining the crises of social changes that created to shifts in thinking and practice.

Thomas and Znaniecki’s work, in relation to understanding the processes of social change, led the way for other studies, such as *The American Soldier: Combat and Its Aftermath* (Stouffer et al., 1949). This study uses cross-sectional surveys to assess the effects of combat experiences on later views and morale. It examines how the crisis of war contributes to a soldier’s attitudes, performance, and motivations in combat. While Stouffer and colleagues offered a perspective for relating lives to timing, they did not look at the sources of changing morale nor transformations over time (Gade, 1991).

Cross-sectional studies gradually began to lose favor as there was a shift toward understanding human development over a lifetime instead of a moment in time. Three longitudinal studies originating out of the University of California, Berkeley made significant movements for child welfare research³: Oakland Growth Study, Berkeley Guidance Study, and the Berkeley Growth Study⁴ (Elder, 1998; Elder & Giele, 2009; Giele & Elder, 1998). These studies looked at children born in the 1920s over time, utilizing interviews, standardized measures, and questionnaires at several points in the life course. Several later studies were based on the data collected including Jack Block's *Lives Through Time* (1971), John Clausen's *American Lives*⁵ (1993), and Glen Elder's *Children of the Great Depression* (1974). These data led the way to the emerging field of human development in the 1960s because they played a key role in the shift to examining human development across the life course by looking at process and change.

Prior to the 1960s, research focused on social impacts on the individual or a temporal approach to a life over time, with each primarily focusing on a subgroup of individuals (Yoshioka & Noguchi, 2009). It continued to evolve as researchers, such as Erik Erikson, began to consider cultural and psychological factors which were driving social change, thinking and practice, in the life stories of famous individuals such as *Young Man Luther* (1958) and *Gandhi's Truth* (1969), referred to as psychobiographies. Research in this era was more of a snapshot of an individual and did not look at the social

³ This study was launched out of the Institute of Child Welfare which is now known as the Institute of Human Development.

⁴ The participants of the Berkeley studies were born in the 1920s and most of them continued to be followed into the 1990s.

⁵ Glen Elder worked under John Clausen at the University of California, Berkeley examining data from the Oakland Growth study.

contexts, but this continued to evolve in the 1960s with the growth of longitudinal studies.

C. Wright Mills in his book, *The Sociological Imagination* (1959) proposed a critical concept of “vivid awareness of the relationship between experience and the wider society.” Mills suggests looking at the social structures and how they interact, separate from the self, to create a critical consciousness. This book is another example of life studies. It takes a stimulating look at social interactions within the larger context of society as biography and history intersect and converge with social heterogeneity and inequality (Hendricks, 2012).

Around this time, sociological research began to examine the interaction of the larger society and person through the ecological model of human development, which looks at the “person-in-the-environment” (Akesson, Burns, & Hordyk, 2017). It theorizes about the ways in which the biological aspects of an individual interact with multiple environmental systems (i.e., micro, meso, exo, and macro) to produce developmental outcomes (Bronfenbrenner and Ceci, 1994). These systems looked at the relative influence of family and peer groups, as related to the social changes and family socialization. Micro refers to the individual; meso refers to the middle level that interacts between macro and micro level, such as, family or military unit; macro refers to the larger environment, such as, military systems.

Age-based models of research became a focal point in the 1960s and 1970s with researchers, such as Matilda Riley and Bernice Neugarten. This time period considered social roles and statuses at different phases of the life span. Riley (1973) looks at age by developing cohorts and examining interactions with society in relationship to life

patterns. Neugarten (1979) defines age outside of traditional chronological, biological age contexts and placing an emphasis on norms for life events, providing an important framework for studies of a normative timing of life transitions.

In the 1960s, Glen Elder began using data from the Oakland Growth Study to understand human development through instability in the changing economic climate of the 1920s with the Great Depression and the World Wars. Elder's work in *Children of the Great Depression* (1974) impacted thinking on social change, life paths, and individual development, which contributed to the formation of the basic principles of life course perspective (Elder & Giele, 2009). His original formulation looked at historical and geographical factors, social ties to other, personal control, and variation in time. He considered the changing society and social forces (institutions and trajectories) on the developing life and how to understand this interaction. The study connects trajectories of personal lives in relation to the larger cultural and economic changes that were occurring.

Janet Z. Giele began her work studying the women's rights movements in the 1960s. She used the basics of life course research to understand how social systems communicate with individuals and subsequently motivate a person to work for a change for self and the larger society (Elder & Giele, 2009). She looks at the cultural background, social membership, individual goal orientation, and strategic adaption, focusing on the relationship between the individual and the surrounding social environment. Giele and Elder's work combined to form another primary layer of theorizing principles of individual adaptations to concrete situations or events through location in time and place (cultural background), linked lives (social integration), human

agency (individual goal orientation), and the timing of lives (strategic adaptation) (Elder & Giele, 2009, p. 9).

Four types of empirical research studies drive the formation of the key paradigms in life course perspective: historical demography, sociology of aging, life history, and longitudinal studies (Giele & Elder, 1998). Life course perspective represents a convergence of generational-and age-based models of theory with ecological and longitudinal perspectives (Elder, Johnson, & Crosnoe, 2003). It comprises cultural, social, biological, and individual variation in understanding human development rather than looking only at single-factor explanations.

Life trajectories, life events, and turning points. Various factors can influence life trajectories, that is periods of relative stability that include patterns of change and transitions (Hutchinson, 2011). A trajectory is a range of behaviors and experiences influenced by human agency and the social world, continuing in a specific line of development (Yoshioka & Noguchi, 2009). The life course encompasses several interdependent trajectories which can include work, education, and family (Settersten & Mayer, 1997).

Transitions occur over the course of a trajectory and indicate gradual developmental or role changes. Multiple factors account for how daily stressors and transitions vary within and between individuals (Elder & Giele, 2009). Life transitions accumulate daily stressors. Positive life transitions, such as, getting married or being promoted at work, can lead to positive well-being, where adverse effects can occur for negative life transitions, such as the death of a family member or loss of a job. Life events spawn transitions (Alwin, 2012).

A life event, or a significant incident causing abrupt and long-lasting effects, can create a turning point or shift in the life trajectory (Elder & Giele, 2009). Life events or transitions can include going to college, marrying, having a child, or moving to a different geographical location. Life events are more than just a daily stressor, yet life events might trigger daily stressors. Both micro and macro factors facilitate the experience of stress in life events. For example, the transition from military to civilian life represents a significant adjustment over the long-term trajectory but includes multiple microscopic dynamic changes or disruptions in the immediate trajectory, such as in social roles, built in structural supports, and even mental health (Morin, 2011).

Not all life events are created equal, and the life course perspective does not specifically address the classifications life events. Yet it is worth further consideration. Some life events might be major, anticipated, desirable, positive, or acute (Settersten & Mayer, 1997). For a service member who experiences a traumatic event resulting in GU injury, this event is likely to have life-long consequences. This life event creates different meaning and an entirely new trajectory as compared to a person who moves to another geographical location for an employment promotion.

Daily stressors primarily occur in relation to a specific day whereas life transitions have stressors over a period of extended time (cited in Elder & Giele, 2009; Zautra, 2003). Multiple daily stressors over a period of time can impact the mental and physical health overall, just as a life transition can. The life course perspective helps to examine how individuals internalize meaning to stressors, affecting biopsychosocial health (Elder & Giele, 2009).

Historical time and geographic location. Historical time and geographic location address the multiple layers of human development with social, cultural and biological context. Various historical changes and economics environments influence an individual's life (Hareven, 1994; Elder & Giele, 2009). Cohorts develop by being born at the same historical time and geographic location, and they experience similar social change with a similar culture sequence (Mayer, 2004). Thus, a cohort effect happens with the interaction between historical time and similar age, as there is a shared, peer experience with common collective properties (Settersten & Mayer, 1997).

The context of culture and what is going on in the world contributes to how a person develops. Individual development needs to be understood in the historical context of what is occurring (present) and what has occurred (past). For example, because of the historical context related to the improvements in medical science around battlefield and hospital care, service members who are engaged in combat post-2001 and suffer injuries now survive the type of injuries that in the past would have been fatal. Due to advances in technology and increased understanding of the psychological implications of war (PTSD), rehabilitative services have also enhanced the subsequent quality of life for this cohort of service members as compared to Vietnam era veterans, who had fewer supportive services in place (Kinney, 2012).

Timing. Timing is not just chronological age. The timing of the lives, related to age and social roles, refers to when a life event or transition occurs (Hareven, 1994). When a transition occurs in a life, it impacts individuals differently. Diverse developmental trajectories are linked to gender, race, ethnicity, and social class within a social context and create age structuring, that is how society creates expectations about

age and the associated experiences, behaviors, and roles (Gilleard & Higgs, 2015; Settersten & Mayer, 1997). Social contexts help to explain not only a person's age, they also help to explain his or her "passive and active adaptations for reaching individual or collective age" (Giele & Elder, 1998, p. 10). Age, whether emotional, psychological, or biological, changes with time, place, culture, socioeconomic status, and individual agency. These—in turn—are guided by education, employment, marriage, and starting a family. For example, a person who enters military service at age 18 may have psychological age attributes similar to someone who is graduating from college and obtaining his or her first job at age 22. Both may be, for the first time, experiencing financial independence and living away from family and parents.

Adolescence, young adulthood, and older adulthood can vary from culture to culture, depending on what is expected of one at a certain chronological age. How changes impact an individual "depends on where people are in their lives at the time of the change" (Elder, 1994, p. 6). The timing of when a certain life event or transition occurs, in relation to age or life phase, is relevant to how the change will impact the individual.

Human agency. Choices that one makes drive the ongoing life trajectory. The concept of human agency recognizes that each person is a vehicle for his or her own choices, managed within subsequent opportunities and structural constraints. Human agency includes personal (micro), proxy (meso), and collective (macro) modes (Bandura, 2006). Individuals are active participants in interacting with the environment of linked lives and historical and geographical location and vice versa. Age, as a developmental

indicator, is related to human agency. Based on age, different choices and decisions are made that have both short-term and long-term consequences.

Human agency and structural constraints related to post-9/11 wars impact individuals' lives in a larger social context. For example, a structural constraint that limits personal agency is present with the past ban on IVF services within the VA⁶. During the physical recovery process, agency can be particularly important in providing choices and options that can empower the service member.

Linked or interdependent lives. The relationship that individuals have with other family members and social networks, or linked lives, plays a key role in the life trajectory throughout the life course. A cohort is one example of linked lives. These “linked lives” influence social roles, social constraints, social and psychological aspects to timing, and the ways in which a specific life event guides the life trajectory. Linked lives can have a positive or negative correlation with life transitions and trajectories. Having positive relationships with family members or a spouse can be a particularly important protective factor in recovery from an injury as a life event and subsequent transition.

Individual lives are embedded in social relationships with those around them, and these interactions continue over a life span (Elder et al., 2003). Early childhood experiences have a lifelong connection to the biopsychosocial being and heterogeneity

⁶ In the early 1990s, the VA instituted a law that prohibited the use of IVF treatments for veterans within the Veterans Health Administration (VHA). Senator Patty Murray has advocated and achieved a temporary bill in effect for one year that supersedes the IVF ban. This will require yearly reauthorization through the appropriations process, and it is specifically for injured veterans with a lawful spouse (Caballero & Covington, 2017).

within individuals. An individual's experience is linked to other family members or social supports, and an individual's hardship is expressed with the network of "linked" members. Individuals are always interconnected, as "one person's resources, resource deficits, successes, failures, chronic strains, and (expected or unexpected) transition, can become a focal condition, even turning points in the lives of others" (Moen & Hernandez, 2009, p. 259). For example, when a service member sustains a GU injury, his feelings and the inability to have a biological child will also have a meaning for a partner. The injury will change the nature of the sexual relationship with a partner, and a partner's role may shift to that of a caretaker. The interdependent lives influence how the service member ascribes the meaning to the injury. The physical injury and associated stressors associated will have an effect on the individual and progeny.

Individual lives in the structural context incorporate biological, social, and psychological variations and processes which contribute to assorted behavioral changes (Hendricks, 2012). A person with their biological and psychological processes and risk factors live within a social environment. The biopsychosocial health contexts interact to have a profound influence on the life span development. This perspective "allows for the coding of historical events and social interaction outside the person as well as the age-related biological and psychological states" of a person (Giele & Elder, 1998, p. 23).

While there are social constructs and constraints that influence a trajectory, the life span development is diverse and heterogeneous with the past influencing both the present and future. Many different aspects of interdependent lives, human agency, and the timing of certain events or transitions serve to guide and shift development of the individual. Life events are experienced with biological or physiological issues, outside

forces (social), individual choices, and individual histories interact to influence present experiences.

Biopsychosocial health perspective. The life course perspective examines health through individual heterogeneity within the larger culture or society, and there are multiple influences on health. A person, impacted by genetics and a changing environment, is affected by a relational process of interchange between the individual, the setting, and the larger surrounding systems (Bronfenbrenner, 2005, p.107).

Biological, psychological, and social traits are woven and interconnected with historical time and geographic location, timing of lives, linked or interdependent lives, human agency, and the heterogeneity of life span development. Biological aspects include genetics and health-related issues. Where a person lives might influence access to health care, and parents (linked lives) influence genetics, as well as, health, activity level, and nutrition. Psychological factors include mental health, affect regulation, emotional intelligence, personality, mood, and behaviors. Historical time and geographical location influence health if mental health diagnoses, such as PTSD, exists, and human agency influences health if a person chooses to access mental health services. Social issues include the influences of family, friends, culture, religion, organizational involvement, and socioeconomic status. The biological, psychological, and social areas all interact and set up different life trajectories.

Intimate relationships. The life course perspective is concerned with the interaction between personal biography and social-historical time (Bengtson & Allen, 1993). Erikson (1950) begins to examine important aspects of historical events contributing to personal agency through the exploration of growth in the stages of human

development (Alwin, 2012). The stages of development are based on a psychosocial crisis between two conflicting forces that move in one of two directions. Specifically, the stages include trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, identity versus identity diffusion, intimacy versus isolation, generativity versus stagnation, and ego integrity versus despair. Erikson assigns ages to each of these phases, but cultural and social factors influence the time at which a person engages in these different “crises.” While there are criticisms of the linear adherence to “stages”, Erikson’s (1950) stages of the life cycle provide a foundation for understanding the life course perspective, and each of the crises serves as a lens to examine the life course more specifically.

Through the life course, intimacy versus isolation can be considered through one of many trajectories. While Erikson assumes reproduction and an innate drive to become a parent, except in rare cases, the assumption seems to be better understood as a social construction (Berzoff, Flanagan, & Hertz, 1996). Marrying and having children tends to be a societal expectation for most, although this notion continues to shift over time. The social construction of the age for marriage is influenced by different cultures, socioeconomic statuses, historical time, and geographic location. Linked lives from infancy and childhood give a foundation for relationships and attachment, which are important for developing intimate relationships.

The changing times cause for a needed advancement in understanding the developmental identity process as related to parenthood or voluntary childlessness versus gestational confusion, that is, the process by which a person decides whether to reproduce. The reproductive story model helps to address this task. What is particularly

helpful about Erikson's stages is the consideration of developmental tasks of life. When understanding what issues a service member who experiences a GU injury might face, age is an important element to considering and addressing biopsychosocial needs. As these service members are young, with over 93% being under the age of 35, the primarily related tasks are finding a partner and generativity (Janak et al., 2017). With an injury to the GU system which will likely have a direct impact on sexual function and reproduction, attention should be paid to recognizing the ways this injury might impact the future developmental tasks.

Summary. Debates continue about life course as a perspective versus a theory, and part of the reason for this is the challenges that arise to connect the multitude of factors and paradigms in a fluid, scientific way (Hendricks, 2012). The diversity and heterogeneity of explanation of a life course is both an asset and a limitation to the perspective. What the life course perspective offers is a way of beginning to understand the heterogeneity of experiences based on past influences, linked lives, timing, human agency, historical time, and geographic location. The main utility of this perspective is to understand the biographies of people over time. Although this dissertation looks at the service members at a moment in time, this framework helps to recognize what might be going on by looking at the multiple influences. Some of the limitations of this perspective in understanding infertility are covered by considering the reproductive story model.

Reproductive Story Model

The life course perspective offers an understanding of the larger context of human development and can be utilized in understanding infertility. However, the reproductive story model is better suited to understanding how a reproductive trauma intersects with

biopsychosocial components and causes deviation in life trajectories. The reproductive story is a developmental concept which includes a person's hopes and dreams about having a family, visions of what children will look like, and imaginings of being a parent (Jaffe, Diamond, & Diamond, 2005). This story is at times conscious but mostly unconscious, and if there is no reproductive crisis it stays mostly unconscious (Jaffe & Diamond, 2011). Jaffe and Diamond (2011) frame the idea of "reproductive trauma" around one's "reproductive story," which is a universal, unique and lifelong experience, even for those who choose not to have children. The framework allows for other aspects of developmental and biopsychosocial constructs to play a role so that it is not narrowly focused on just reproduction (p. 29).

Jaffe and Diamond (2011) discuss the importance of exploring hopes and dreams in ascertaining conscious and unconscious parts of the reproductive story. Freud (1899/1955) uses dream analysis as a means to uncover the unconscious through lowered ego defenses. While Jaffe and Diamond define dreams as what one envisions his or her future to be and Freud uses the dreams of nighttime sleep, the notion of dreams—occurring while awake or sleep—as a way to uncover unconscious pieces, is essential to the reproductive story.

Dreams provide a lens to understand the construction of the reproductive narrative which can in turn help with grieving those old dreams and re-envisioning what the future holds. For example, a service member in his early 20s who experiences a GU injury, may not have fully considered or thought about future family building other than thinking about whether he wants children one day. The use of dreams can uncover the unconscious or unexplored feelings around what he may have envisioned for his future

prior to the injury. Understanding the preconceived story can help with rewriting the story.

Reproductive trauma. Infertility can be experienced as a reproductive trauma that violates the sense of self, overwhelms the ability to cope effectively, and may create a narcissistic wound that challenges previous identity (Jaffe et al., 2005; Jaffe & Diamond, 2011). Negative reproductive events (e.g., loss of reproductive organs, early or late pregnancy loss, and infertility) are likewise traumatic. Those with an injury to reproductive and sexual organs will potentially experience several related and overlapping reproductive traumas, including both the injury itself and then resulting infertility.

Reproductive trauma is a life event and can also be thought of as a life condition, and the way the reproductive story is rewritten is determined by these turning points. Reproductive traumas, specifically infertility, cause a marked disruption in the normal process of the life course around the reproductive story (Jaffe et al., 2005). The experience of the reproductive trauma can cause the ego to fragment and create a disruption in intimate relationships (Jaffe & Diamond, 2011). A fragmented ego due to a reproductive trauma means that the way one formerly perceived the self in relation to reproductive health (as a fertile and/or sexual being) is shattered, thereby challenging identity, self-worth, and previously held beliefs (Janoff-Bulman, 2002).

Theoretical origins. The reproductive story model represents the intersection of developmental theory with an underlying exploration of narrative psychology as a life story model of identity and attachment theory. These theoretical undertones combine to explore and theorize infertility as a developmental crisis. The reproductive story occurs

not only during the reproductive years; it continues throughout the lifetime. The story starts in infancy with a parent-child dyad that evolves continuously, even as a person becomes a grandparent (Jaffe & Diamond, 2011). A sense of self emerges from the unconscious dreams and hopes related to the reproductive story that is rooted in social and cultural values.

Theory of narrative identity. A key framework for understanding the reproductive story is derived from the self-narrative theory of identity. Self-narratives are motivated through constructions of goals of self-improvement and the desire for human connection and union with someone or something else (Hermans, 1999). The basis for a self-narrative is established through story, motivation, and telling (p. 1194). Motivation is structured through personal and psychological drives and needs, whether a wish for self-enhancement, search for a partner, or as with the reproductive story, a desire for a child.

The life story model of identity develops from Erikson's concept of ego identity (Gilleard & Higgs, 2015; McAdams, 2001; Erikson, 1980). Identity is "a synthesis of childhood skills, beliefs, and identification into a more or less coherent, unique whole that provides a young adult with a sense of continuity with the past and direction for the future" and drives the life story (Marcia, Waterman, Matteson, Archer & Orlofsky, 1993, p.3). Identity development is composed of and impacted by multiple aspects, such as intimate relationships, parenthood, religion, and work or career. Exploration of commitment to identity occurs as one "reconstructs personal past, perceives the present, and anticipates the future in terms of an internalized and evolving self-story" (McAdams, 2001, p.101). The life story and narrative identity foster assemblage, coherence, and meaning of lives across the life span (McAdams, 2008).

Stories are often told and evoked through strong feelings or traumatic events. A continuous flow of an uninterrupted narrative helps a person to articulate and assign meaning to a particular event (William, 1890; Hermans, 1999). The reproductive story may be told as snapshots of certain events and feelings, as a stream of consciousness rather than a coherent, sequential story. As with life story narratives, one reproductive story goal is to help the person assign meaning to the trauma through unconscious and conscious hope, dreams, and past experiences. After assigning meaning to different life events, a reconstruction of meaning can help increase well-being (Hermans, 1999).

Markus and Nurius (1986) discuss possible selves as being past, present, and future. Possible selves may be what a person hopes and desires for the future or fears becoming. These possible selves are part of the narrative and life story. By reconstructing meaning and identity, a renewed and redefined sense of self becomes an attainable possible self.

Developmental tasks. Relationships start as soon as we are born, and these early relationship experiences set the stage and serve as the foundation for all future relationships. Early attachments play out in later outcomes and life trajectories. The parent-child dyad provides a basis for developing a sense of self (Kohut, 1977). Kohut suggests that neuroses develop from the deficits of parental attunement and empathy. Healthy mirroring between a parent and child provides a child with a sense of self and an idealized relationship. The parent-infant dyad is the center and foundation of the developmental process and the start to the reproductive story (Winnicott, 1962).

Trauma in one's family of origin will impact later relationships and can influence the construction of the reproductive story (Jaffe & Diamond, 2011). Attachment and

family systems theories provide a basis for future development and relationships, by focusing on the reciprocal relationship in dyadic and family interactions instead of the individual (Alexander, 2015). The dyadic and family interactions between the parents and the parent and child can affect future generations when trauma and violence are experienced in a family (Alexander, 2015).

Intimacy and generativity. Intimacy versus isolation occurs as a person looks to form intimate relationships and attain connections to others by finding a partner or spouse. This stage can only be successful if there is a positive resolution of identity conflicts and diffusion into a committed sense of self. Erikson (1980) suggests that people will “wish” to find a person with whom they can “combine their personalities and energies in the production and care of common offspring” (p.103). Different factors from the life course can influence the timing of when a person seeks intimacy development and how successful he or she is in finding a healthy relationship. This stage is an important part of the reproductive story.

Young adulthood is a time of making commitments to identity (e.g., relationships and employment) and working towards a more solid sense of self (Schwartz, Cote, & Arnett, 2005). Erikson’s formation for tasks of identity formation transpires in adolescences with the onset of puberty and reproductive abilities being realized. Identity becomes actualized as one explores the sexuality and intimacy of young adulthood (Arnett, 2006; Zimmer-Gembeck, 2006). The ego serves to construct life plans that will guide a person throughout the lifetime (Arnett, 2006). In the reproductive story, the infertility process can be perceived as traumatic because a person feels increased

psychological conflicts, grieves parts of an unfulfilled identity, and experiences interrupted continuing development.

Generativity can often be seen as analogous to parenthood; however, there are additional ways one can be generative, such as through work and other avenues of achievement that allow the person to leave a legacy (Erikson, 1950). Being able to mold a child by imparting personal experiences and wisdom attends to generativity. It is placing a piece of the self into another person to bestow upon to the future generations, an example of linked lives. When a reproductive trauma occurs, the reproductive story needs to be edited to then reconceptualized what it means to be generative, which may be different than previously envisioned.

Parenthood as identity and a developmental phase. Therese Benedek was a psychoanalyst who suggested that parenthood is a relevant developmental phase of adulthood. This developmental phase offers an important process of consolidation of identity and a resolution of previous development conflicts (Benedek, 1959). Parents can grow and master previous conflicts of psychosocial development through the relationship to the child, as the child hits particular developmental phases (Benedek, 1959). However, when a person experiences infertility, he or she may be unable to address previous conflicts or wounds from earlier development, creating an additional sense of loss (Jaffe & Diamond, 2011). Reproductive traumas can reinforce past hurt.

Historically, there was a belief that infertility was psychologically-based, related to ambivalence and conflict in becoming a parent (Benedek, 1952). This idea, related to the psychogenic model, expands into a belief that unresolved identity conflicts and developmental crises can “psychologically [block]” a woman from becoming pregnant

(Shapiro, Shapiro, & Paret, 2001, p. 203). While the psychogenic model is no longer in favor due to advances in reproductive medical science and the recognition of the physical basis of fertility problems, there is evidence that suggests that infertility can cause internal conflicts, increase rates of depression and anxiety, and disrupt the sense of gender identity (Covington & Burns, 2006; Shapiro et al., 2001). Parental identity can be an important cornerstone of adult identity and development.

Erikson (1950) suggests that parenthood is an opportunity for the consolidation of identity formation and that the inability to become a parent impedes this process. He also acknowledges how the idea of parenthood is an important aspect of psychosocial development. If a person identifies the desire to become a parent and is unable to achieve a successful pregnancy or to give birth, that person's sense of identity will be challenged and a psychosocial crisis may result. The inability to achieve parenthood might raise other challenges to aspects of identity, such as gender, due to the failure of reproductive abilities associated with infertility; sexuality, due to interplay with reproduction; or intimacy in relationships, due to identity conflicts and changes that can affect the dynamics of a relationship.

How parenthood as a developmental phase pertains to a person who chooses not to become a parent is largely unexplored. The examination of childlessness suggests that the social-historical context influences how the "meaning, experience, and consequences of childlessness" guides psychological wellbeing (Umberson, Pudrovska, & Reczek, 2010). Some evidence suggests that voluntary childless can spur distress later in life (Hewlett, 2002). However, different life course trajectories can contribute to voluntary childlessness, and heterogeneity influences the overall experience. Research is limited

around the effects of voluntary childlessness over time (Umberson et al., 2010). Thus, the considerations for those who choose childfree living and the subsequent psychological implications should be pondered in a broader sense.

The formation of identity in the context of parenthood is universal, as everyone has biological parents (genetic donors) and therefore experiences parenthood in some way. However, some might reject this identity and decide not to have children while others may have a child without planning it. The developmental phase that can be associated with deciding whether or not to have children often begins during the intimacy versus isolation period and is worked through in the generativity versus stagnation stage, as stated by Erikson. The phase extends beyond young adulthood. Those who face infertility will likely experience a psychosocial crisis, and how that crisis is handled will depend on many other social and cultural forces.

Biopsychosocial contexts in the life course integrate into the timing of when one has a child and thereby influences a life trajectory. One might have a child before one is ready or wants one, or may have difficulties when actively trying to conceive, making it difficult to transition to the next developmental phase. Parenthood can often be felt as the defining point of adulthood, and infertility can make a person feel he or she is straddling two developmental phases. Due to reproductive traumas, such as miscarriage, late-term pregnancy loss, and stillbirth, one can be a psychological parent long before a child is born. Biologically there may be a drive to have a child, and socially there may be an expectation to have a child at a certain chronological age. However, psychologically one might not be ready.

Parenthood is a desired social role that not all want (Greil, Slauson-Blevins, & McQuillan, 2010). As a person is unable to fulfill social and cultural roles related to parenthood, the identity of parenthood is grieved and reassessed in the course of a psychosocial crisis. Infertility can be perceived as the failure of the self and body to achieve a desired biological and social state, thus “spoiling” the identity of the person (Greil, 2002). Infertility as a psychosocial crisis is only experienced by those whose identities have embraced the idea of becoming a parent. Infertility can be in conflict with the sense of self, impeding future identity development, and making it difficult to edit and rewrite the future reproductive story. While there are more and more people in the U.S. who are voluntarily childless, there is an engagement with the decision in the reproductive story of whether to assume that identity (Jaffe & Diamond, 2011; Umberson et al., 2010). Those who are involuntarily childless will have to reconstruct their identity as they work through the psychosocial crisis.

When an aspect of identity, such as being a parent, is highly valued by society or a person, any challenge or barriers to achieving it and a “possible self” (i.e., the potential and ideal future self) can cause a psychosocial crisis (Markus & Nurius, 1986). Jaffe and Diamond (2011) discuss the importance of rewriting and editing the narrative when a reproductive trauma occurs to help a person be able to use the meaning of the experience to change what the future life trajectory may look like. The reproductive story is a fundamental piece of identity, and when it goes awry, as with a reproductive trauma, it can alter the developmental process.

Summary. While the reproductive story model is rooted in psychological theories, empirical research, and clinical experience, the model primarily utilizes as a

resource to explore and understand the experience of infertility in a clinical setting (Zweifel, 2010). As its primary utility is meant for a clinical counseling session, it has limitations in utilizing this as a theoretical framework for understanding GU injury. Combining this model with the contexts of the other theoretical and conceptual frameworks presented helps to provide a comprehensive structure for understanding the GU injury phenomenon.

Amalgamation of the Life Course Perspective with the Reproductive Story of GU Trauma

Within the life course, a person has a reproductive story, a basis for understanding a fluid approach to reproductive identity as it changes and evolves over time (Jaffe & Diamond, 2011). The reproductive story incorporates cultural and social influences in addition to human agency. Family constellations, family lore, cultural influences, ethnic and religious beliefs, peer-group norms, medical technology development, and media play integral roles in how one constructs the story and what shape one's life trajectory (Jaffe & Diamond, 2011). The aspects of geographical location and historical time are particularly relevant to the medical technology development. The introduction of birth control in the 1970s and women's rights around the termination of a pregnancy have allowed for greater individual agency. The use and increasing growth of reproductive endocrinology have allowed for more and more people to become parents who in the past may not have been able, such as, a woman born without a uterus, a woman of advanced maternal age, or a gay or a lesbian couple. The place in the world where a person is located may give more or fewer options for making reproductive decisions. Linked lives

also have an important influence on how one's reproductive story is shaped, written, and rewritten when new information, experiences, or crises arise.

The transition from military service to post-injury civilian life is a life event which, in turn, will influence future life trajectories. For the GU injury survivor, this transition is a complicated process with variable needs for rehabilitative care, including amputee and prosthetic care, physical and occupational therapy, mental health counseling, etc. For many, the medical transition will be lengthy, especially when polytrauma exists. The turning point is caused by the need to readjust major pieces of identity, such as reintegrating from military into veteran status, being at home rather than no longer being away due to military service requirements, dealing with the meaning of the genitourinary trauma and how it impacts functioning, and deciding how to move forward with intimate relationships, whether starting a new one, divorcing, or dealing with the injuries within the existing relationship. Personal histories influence intimate relationship development. Chaotic and abusive early attachment relationships, often seen in the life histories of enlisted services members, can distort and disrupt intimate relationships later in adulthood, especially with the added stress of a GU injury (Wise, 2017).

A life event for a wounded warrior informs identity in the context of the injury, acute care, and long-term rehabilitation. Differing beliefs and values, regulated by linked lives, influence how each service member experiences a combat-injury life event and transitions into a new life trajectory. The medical care received in the context of their physical injury—including sexual functioning (biological), the mental health implications of trauma and the injury (psychological), and available support systems and different

interdependent lives (social)—contributes to integration and transitioning back into the community as the individual moves between cultures (i.e., active military, military medical centers, veteran status, and civilian).

Different aspects of recovery, such as the culture of the medical facility, interactions with family and friends, and type of needed medical care, play important roles in how an individual is affected. The culture of each medical facility varies, affecting a service member's identity resynthesis and impacting how the turning point from the GU trauma will influence the life trajectory. Although the implications of GU trauma on transitioning to different cultures (military, veteran, and civilian) are unknown, the social interactions with each of these cultures will affect ego identity.

“Cultural, social, historical, and political conditions” all contribute to how trauma is defined and approached (van der Kolk, 2010, p.32). Figley and Nash (2011) have described why the stress experienced in war might warrant a separate diagnosis from PTSD, one that characterized an injury rather than a disorder. They have noted that “the stressors themselves tell only part of the story of the impact of war on individuals” because the “shared attitudes, beliefs, and expectations that prevail within military units as part of their shared culture” are equally important in understanding the experience and effects of trauma (p.11).

Evidence suggests that there can be posttraumatic growth in five areas which include a strengthening of self-perception, increase in sense of new possibilities, improvement in human relationships, increase in appreciation of life, and a renewed or strengthened spirituality (Levers, 2012). These areas of growth are likely due to resiliency factors that can be understood by biopsychosocial attributes and the life course

perspective, related to biology, mental health, direct social supports and other linked lives, historical events and timing, human agency, and other environmental factors. These different aspects can also be incorporated into rewriting the reproductive story.

The GU injury, as a reproductive trauma, in addition to the other injuries such as amputations, TBI, or PTSD, constitutes a primary life event and turning point. While some service members may know early on in the recovery process that they are infertile, others might not find out until they decide to try to conceive a child with their partners. Either way, subsequent infertility will be a secondary condition and experience. Narrating the story of a trauma through imaginal exposure therapy has been found to be a helpful tool in creating a more useful and accurate version of the story and desensitization of the body and mind's reaction to the trauma (Hoge, 2010). The telling and retelling of a trauma narrative help a person to mourn and emotionally process the event into a more coherent story (Fox & Pease, 2012; Herman, 1998). Similarly, integration of the GU injury in relation to this narrative and the reproductive story provides a context to explore and understand its meaning and incorporate the reproductive trauma into one's identity. This is particularly relevant for those service members who wish to be a parent and become infertile as a result of the GU injury.

Even if two separate people encounter the exact same circumstances around the event, such as a GU injury and polytrauma caused by an IED, the event will likely be understood and experienced differently. The life course perspective presents a way of understanding these different life trajectories and what may influence the editing of the reproductive story. These frameworks allow people with GU injuries to imagine their future reproductive stories by rewriting what comes next and what fits best. However,

the story could change post-GU trauma to no children, adopting, or using ART. Different linked lives, social constraints, socioeconomic statuses, individual agencies, and timings of the injuries will influence these decisions.

What the reproductive story model offers is a way to understand and treat reproductive trauma on a clinical or micro level. It does not look at the experience from a macro perspective or the population experience as a whole. It allows for the veteran to rewrite the story based on different variations in experience, including physical injuries, mental health, and social supports. While the model can be used across cultures, gender, and race, it does not actively address these. Thus the life course perspective provides for additional systemic influences that the reproductive story model lacks.

Summary

The previous four chapters provide conceptual and theoretical frameworks for considering the various biological, psychological, and social factors that may influence a recovery after a military-related injury that impacts the GU system. The military context describes the history, cultural, and combat-injury background on infertility provides an overview of infertility experiences, grief, and considering it in connection with a military-related GU injury. This chapter offers a theoretical lens to consider how the previous three chapters address the various micro, meso, and macro level needs. The culmination of these literature reviews establishes a foundation for a rich understanding of the complexities of GU injury and the analysis of the research data. The various multilayers of the conceptual and theoretical frameworks and literature reviews weave together to provide an understanding of individual variation.

CHAPTER 6

Research Design and Methods

The purpose of this phenomenological study is to explore how veterans understand reproductive trauma and reconceive the reproductive narrative. The research involves in-depth, semi-structured interviews that examine the relationship between military-related injury impacting the GU system and the ways in which the associated reproductive and sexual health issues influence subjects' attitudes toward family development and perceived quality of life (mental health, physical health, sexual functioning, and fertility/generativity). This exploratory, investigative study aims to reveal the essence of the biopsychosocial issues related to subjects' lived experience of GU injury and to highlight areas of needed future research.

The primary research question explored is: *What is the veteran's experience associated with his military-related reproductive trauma and reconceiving his reproductive narrative?* To more accurately consider this reproductive narrative, two additional sub-questions are considered:

- How does the reproductive trauma impact quality of life within biological, psychological, and social contexts (specifically considering the reproductive narrative elements of relationships, psychosexual functioning, and fertility/generativity)?
- How are intimacy and sex post-injury impacted by the reproductive trauma?

Sample

Maximum variation, purposive sampling is utilized to explore the depth of experiences across different subjects. An attempt to use a snowball sampling method was

unsuccessful⁷. Participants can include military members or veterans who served in the wars in Afghanistan and Iraq and have a service-related injury impacting fertility. Within the purposive sample, the goal is to locate an extreme case sampling of service members or veterans who have more severe GU injuries to “illuminate the ‘outer edges’ of the phenomenon” (Padgett, 2008, p. 54). Examining extreme injuries increases the likelihood of infertility and, in some cases, sterility. Including participants with less severe injuries may have posed increased challenges and barriers to understanding the essences of the infertility experience. For example, if there is only limited injury to the scrotum with unaffected testosterone levels or only kidney injury occurred, the likelihood of infertility is significantly decreased as compared to someone who has lost a testicle.

The sampling is limited to service members with injuries that occurred during the War on Terror between the years 2001-2014 (Torreon, 2016). Exclusion criteria include a history of a clinical diagnosis of a severe TBI as significant cognitive impairment exists, as it likely prevents truly informed consent in participation in the research.

Extensive consideration is given to the sample size based on richness and saturation of data (Morse, 2000). The study’s aim is to achieve an in-depth understanding and to gain an introductory awareness of some of the issues that might require further research. The content from the in-depth interviews are used to “unpack” and closely observe the experience of the GU injury, viewing the parts “as a whole and in relation to one another” rather than going “out” to larger issues and theories (Padgett, 2008, p.144). The intention is to construct a narrative about the impact of this phenomenon and the

⁷ I had two participants who were connected through a snowball technique. While each initially agreed to participate, they both disappeared after several contacts.

possibilities embedded in this particular reproductive trauma rather than to generate generalizable findings. Therefore, including more interviews would not provide any further understanding of this topic. In fact, a larger sample would have made it more difficult to examine and analyze the data in a rich, detailed way. The sample of 10 male veterans allows for the extraction of enough data to address the research goal.

This research studies a very small population and addresses a very specific and sensitive topic. While each participant had a unique injury experience and recovery process, consistent undertones remain in what they express regarding their feelings around GU injury, demonstrating saturation. Thematic and data saturation occurs when there are “few surprises” and redundancy occur between interviews, which is different than theoretical saturation used in grounded theory (O’Reilly & Parker, 2012, p. 192).

There is a good range of participants in relation to age, marital status, and whether there were children at the time of injury or conceived after injury. While a range exists, this is a relatively homogeneous population, allowing for a more comprehensive picture of the narrow focus of the phenomenon. These are all heterosexual male veterans who were injured in combat in Afghanistan during OEF. Achieving saturation happens sooner than it would have if other causes of injury (e.g., civilian accidents) or other time periods (e.g., the Vietnam War) were included.

The study population is extremely specific and, because of the sensitive nature of the topic, recruitment obstacles were anticipated prior to doing this research. Finding participants willing to have in-depth discussions for research purposes presented difficulties. Many barriers arose before contact was made with potential participants. Four veterans chose not to participate because they “had moved on from the injury and

didn't want to revisit talking about it." This information was relayed by a professional contact; there was no direct interaction with these individuals. It is hypothesized that certain variables make exploration of this topic difficult. First are the embarrassment, shame, and reticence often pervasive when talking about "private parts." A second barrier is talking to men about feelings and emotions, a challenge that is compounded by cultural attitudes and the concept of military toughness.

Difficulties with locating participants were expected as there is no centralized location, center, or clinic that specializes in the treatment of these post-injury problems. Additional barriers arose as attempts were made to access information within the military and from veteran non-profit services due to bureaucratic rules, as well as security and privacy issues for this vulnerable population.

Despite the challenges of recruitment, the data that emerged from the current sample proved to be rich and varied and can be assumed to successfully address the research questions regarding the experience of reproductive trauma within a military population exposed to combat. The 11 interviews and 10 participants gave acuity to unpacking the essences of this phenomenon.

Sample demographics. The sample includes 10 male veterans. Three participants were between the ages of 18-21, five were between the ages of 22-29, and two were over the age of 30 at the time of injury. (See Tables 6.1 and 6.2 for additional information, including context numbers from the population, marital status, and children.) This sample is not intended to represent any larger population, and there is no intent to further generalize from this study or to establish statistical significance for any specific outcome measure. The sample is only compared to the larger GU injured military population (and

those rated as severe within that population) as a way to give the reader a picture of how the participants’ injuries fit into the larger population.

Six participants were in the Marine Corp, three served in the Army, and one was in the Navy. Five were junior enlisted service members, four were noncommissioned officers, and one was a commissioned officer (see Table 6.3). Three participants have injuries that impact testicular function (hypogonadism), impairing fertility without losing a testicle. Three have unilateral orchiectomy with significant damage or atrophy to the remaining testicle, and four have bilateral orchiectomy. Of all the participants, two report additional penile injuries, and two have penile amputations. (See Table 6.4 for more information on the nature of the injuries and comparison numbers to the larger military population.) Co-morbid injuries include: lower- and upper-limb extremity amputations; broken jaws; burst eardrums; issues with the lungs, stomach/abdomen, pelvis, buttocks, colon, rectum, and bladder; TBI; and mental-health diagnoses. All injuries to these participants occurred in OEF between the years of 2005-2012.

Table 6.1
Demographics: Age of injury

AGE AT INJURY	Participants numbers	Population size (percentage)*	Severe injury numbers (percentage)*
18-21	3	371 (27.1%)	147 (29.3%)
22-29	5	742 (54.3%)	274 (54.6%)
30-35	1	167 (12.2%)	52 (10.4%)
Greater than 35	1	87 (6.4%)	29 (5.8%)

*Comparison numbers come from Janak et al. (2017). “Severe” is defined by the DoDTR using the Abbreviated Injury Scale as 3 or greater.

Table 6.2
Demographics: Marital status and children

	Prior to injury	After injury
Single	8	4
Married	1	4*
Divorced	1	2
Had children	2	4**

*One participant was separated from his wife at the time of the interview.

**This number includes those that had children prior to the injury.

Table 6.3
Demographics: Rank

RANK	Participants numbers	Population size (percentage)*	Severe injury numbers (percentage)*
Junior enlisted (E1-E4)	5	814 (59.6%)	314 (63.7%)
Noncommissioned officer (E5-E9)	4	476 (34.8%)	156 (31.1%)
Officer (warrant/commissioned)	1	76 (5.6%)	31 (6.2%)

*Comparison numbers come from Janak et al. (2017). “Severe” is defined by the DoDTR using the Abbreviated Injury Scale as 3 or greater. The severity rating is unavailable for the participants.

Table 6.4
Genitourinary injury sample and population

Genital Injury Type	Participants numbers	Population size (percentage)
Injury and consequences to testicular function	3 ^a	451* (33%)
Unilateral orchiectomy**	3	129 (9.4%)
Bilateral orchiectomy	4	17(1.2%)
Injury or scarring to penis	2 ⁺	423 (31%)
Complete amputation of penis	2 ⁺	Fewer than 5

Comparison numbers come from Janak et al. (2017).

a-This includes spinal cord injury which can cause hypogonadism (decreased testosterone levels), neurogenic bladder and bowel, and erectile dysfunction.

*This number reflects the overall injuries to the testes, not the description

**All participants in this study also had significant damage or atrophy to the remaining testicle, but this was not deciphered in the literature comparison numbers.

+ Penile injuries are comorbid with bilateral orchiectomy. The penile injuries in the population size are also probably comorbid with other genital injuries. One of the penile injuries has caused inability to have vaginal intercourse due to partial amputation.

Methods for Sample Selection

The Bryn Mawr College Institutional Review Board (IRB) approved this study in March 2016. Subsequently, various tactics were employed to recruit participants (see Appendix A: Recruitment letters and Appendix B: Recruitment flyers). A verbal screening questionnaire and informed consent information were used when speaking to a potential participant (see Appendix C: Screening phone call). Additionally, a separate email included written informed consent (see Appendix D: Informed consent). In May 2017, the IRB approved an addendum to the study design allowing for the provision of a

\$50 gift card as an immediate means of thanking participants for their time. All participants who had already completed their interviews received one. Additionally, a summary of the research results will be provided to each participant after the study's completion.

Recruitment methods. Various points of access were used to identify this population of veterans, including non-profit wounded warrior programs and private fertility clinics. Several non-profits, including Wounded Warrior Project (WWP), Iraq and Afghanistan Veterans of America (IAVA), Paralyzed Veterans of America (PVA), Veterans Advantage, Semper Max, Fisher House, Hope for the Warriors, the Honor Group, and Bob Woodruff Foundation were contacted for subject recruitment. VAs in several states were contacted through professional connections—all without success or gain. Doctors were contacted at local medical facilities such as Johns Hopkins Hospital (where the primary transplant surgeries for wounded warriors take place), Walter Reed National Military Medical Center (WRNMMC), and Shady Grove Fertility Clinic, as well as through the ASRM⁸. Most of these contact attempts were made by phone or email. However, meetings occurred in person at a few of the non-profits that have offices in Washington, D.C. All these attempts proved futile. If a response was received, it indicated that too many barriers to confidentiality existed to allow for the successful recruitment of participants. At the non-profits where in-person contact was made, even

⁸ ASRM provided a contact list for a program named, “Serving Our Veterans” program which offers ‘deeply discounted fertility treatment’ to veterans with GU injuries. <https://www.sartcorsonline.com/ServiceToVeterans.aspx> #IVF4VETS. As of January 2017, this program has since been disbanded as there have been efforts to improve IVF care for wounded warriors.

with those who said they could help, the contact eventually evaporated after multiple failed attempts to follow up.

Ultimately, the primary avenues for success were through colleagues, including a nurse, reproductive endocrinologists, military researchers, and staff at a non-profit infertility organization. The nurse worked with several wounded warriors through a non-profit military program. Through a participant, two military researchers were reached who offered to distribute the study flyers. Two REs contacted former patients to determine whether they were willing to participate. The study was also posted on RESOLVE: The National Infertility Association's online community, Inspire.

In order to encourage and maximize participation, every effort was made to schedule interviews at times and places that were convenient for the service members. There were 16 service members who initially agreed to participate in the study. However, six of 16 contacted service members did not complete the interview. One service member decided that he did not want to participate because he wanted to try to move on from his injuries and was busy with children. Five other service members who agreed to participate after the initial screening later withdrew. One individual who was undergoing a final and unsuccessful IVF cycle was not contacted again due to the emotional intensity of the treatment process. Another mentioned that he had recently gotten pregnant without the use of ART. It was unclear why the other three service members never completed the interviews. Ultimately, ten of the original 16 service members completed the interview process.

Having service members make referrals through the snowball technique proved unfruitful. This may have been a challenge for them because many did not know people

who had a similar injury as they do not talk about it with others and, once it is mentioned, it is never discussed at length again.

Screening method. If no prior contact existed with the service member because his information was given by a third party, then an email—if available—or a phone call was made to inquire about participation in the study and to determine eligibility. Before scheduling an interview with the potential participant, a telephone screening was completed to inquire about military affiliation, classification of injury, and impact of the injury on fertility to make sure the participant met the criteria for the study.⁹ If the service member was eligible, he was given information about what would be discussed in the interview, the time commitment, and his willingness to set up an in-person interview (or videoconference, if necessary). After the call, a confirmation email was sent with the date, time, and location of the appointment along with information about the study, including written consent. The signed consent was received by the time of the appointment, whether through mail, email, or in person.

Research Procedure and Instruments

Intensive interview process. This study used a semi-structured, in-depth interview. An interview guide, shown in Appendix E: Interview Guide, employed open-ended questions to address biopsychosocial and sexual functioning issues including an inquiry about the nature of the injury, social supports, mental health, sexual functioning, engagement in intimate relationships, and family-building considerations. This interview guide was adapted from the Lucas et al. (2014) study. Additionally, directly following the

⁹ One person was not included in the study due to a severe, penetrating TBI.

interview (and during when possible), observations were recorded regarding the interview process, surroundings, and any other relevant information.

Use of a semi-structured approach helped to ensure that the participant interviews covered all relevant areas related to the research questions and reduced errors associated with the investigator serving as a research instrument (Alshenqeeti, 2014). Errors were reduced as it ensured that all participants were asked the same basic, core questions and addressed the same topics. Utilizing the interview guide also helped to address human subjects' issues within this vulnerable population, as the IRB approved the guide.

The interview guide was modified from traditional descriptive phenomenological research (Vagle, 2012). While open-ended questions consistent with phenomenological research were used, the interview guide was more detailed and was organized by discussing broader questions about each subject's experience rather than jumping directly into the genital injury. By starting with a more general line of questions, the interviewer created rapport and comfort for the veteran, helping him to more easily discuss his experience with reproductive trauma. Additionally, as noted in another study about women service members with traumatic amputation, "You need to understand combat first before you can understand how we cope with the injuries" (Carter, 2012, p. 1445). Understanding the background of the injuries and the military culture is paramount to being able to unpack this phenomenon of GU injuries.

With a basic assumption that talking about genital injury may cause embarrassment, specific questions were incorporated to assist the participant with accessing various parts of this phenomenon. The Lucas et al. (2014) study questions help facilitate a starting point as they are part of the only known qualitative study about this

subject matter. However, more questions were added to try to help to address and obtain the essence of the reproductive trauma and create a narrative experience.

Before the interviews commenced, the interview guide was examined for potential interviewer preconceptions. The interviewer jotted down a few notes and worked to avoid preconceptions as the interview process proceeded. I also discussed the interviews after with a colleague, as a way to consider how my biases and countertransference might have come up and how I can change that for the future.

Locating the first participant took approximately eight months. An additional eight-month period transpired between the first and the last interviews. Most interviews ranged from about one to two-and-one-half hours in length and took place in convenient locations for the participants. Some interviews occurred via videoconference when the participant lived out of state. The videoconferencing took place over <https://www.vsee.com>, which is HIPPA-compliant software. Regardless of location, the interviews took place in private spaces with few distractions although this did prove to be challenging at points. For example, a mother walked into the room during a videoconference and began adding to the commentary, and at another point the participant's baby was crying in the background, disrupting the interview.

Eleven interviews were conducted because one participant opted to break his session into two separate ones. Seven interviews occurred using VSee videoconference, two were completed over the phone, and two other interviews were held in person. One session conducted by phone was at the request of the participant because he was experiencing internet connectivity problems. The other session that occurred via phone was the second session for that participant, and this was at his request due to logistics

with scheduling. One interview occurred at the participant's home, and another happened at a military treatment facility.

To access the core of the GU injury experience, each participant was debriefed at the end of the interview to determine whether the questions were straightforward, easy to understand, in logical order, and included needed information (Bradburn, Sudman, & Wansink, 2004, p.317). This allowed for further exploration of topics they may have felt were left uncovered. A few participants asked for resources and had further questions about the research. Almost all participants expressed gratitude for this research because they felt resources and information were lacking as they went through the experience of a GU injury and impaired fertility or sterility. This conversation brought a further discussion about the challenges associated with talking about genital injuries and how it can be cathartic to talk about the injury and these associated issues.

Speechpad Transcription Services transcribed five interviews. However, after some issues with Speechpad reporting they could not hear the recordings, the service was changed to Sara Baum of Sharp Copy Transcriptions with no issue. Both services signed non-disclosure agreements (see Appendix F: Non-Disclosure Agreements) before work began. Upon their return, all transcripts were reviewed for accuracy and further identifying information (e.g., names of participants or significant others, names of medical staff, treatment facilities, etc.) was removed. The transcripts were then uploaded to MAXQDA, the computer-assisted qualitative data analysis software (CAQDAS) utilized to assist in organizing the data's interpretation. MAXQDA simply provides a platform for organizing and reading the data; it does not analyze the data.

Standardized measure. A computer-generated quality of life and sexual-functioning measure was utilized through Patient Reported Outcomes Measurement Information System (PROMIS, available at <http://www.nihpromis.org>). PROMIS, funded by NIH, is a measure that can assess a patient's state of wellbeing and ability (or lack thereof) to function. The scoring metric employed was item response theory (IRT), "a family of statistical models that link individual questions to presumed underlying trait or concept represented by all items in the item bank" (PROMIS, 2015, p. 2). It was used as a way to have a "universal" measure across many domains and conditions rather than being related to a specific disease or condition, and it "facilitates normative comparisons and provides an interpretative context for scores" (PROMIS Statistical Center Working Group, 2014, p. 1). The measure was developed to address physical (*bio*), mental (*psycho*), and *social* health issues across chronic conditions.

While this measure has probably not been used with this population previously, there was no other specific measure that had been utilized. The purpose of using PROMIS in this study was to have a standardized, objective way of assessing for the quality of life (10 questions) and sexual function (eight questions), and it took only seven to ten minutes to complete both measures. PROMIS provided a way to add to, further analyze, and confirm information discussed in the interviews.

Each participant was provided with an online link that he could use to complete the measure after the interview. The link, which had a unique password for each participant, gave participants one-time access to the measure. No identifying information was recorded online, and results were only available to the researcher. Having the participants complete the measure after their interviews allowed them to more clearly

understand the process. This, in turn, generated better rapport and more open reports. Two participants asked to be provided the survey by mail due to technological issues. Once those written measures were inputted to the computer, the originals were shredded. See Appendix G: Global Health and Sexual Functioning Measure for a list of the measure's questions.

The PROMIS Assessment Center automatically interprets the quantitative data related to the quality of life and sexual functioning. The global health is divided into two domains: global mental health and global physical health, which assessed for physical function, mental health, fatigue, pain, and social health. This measure is used to consider how the individual compared to the general population (mean=50, SD=10) and to have a base for understanding how their functioning compared to a normative population. One standard deviation below the mean indicates mild symptoms/impairment, two is moderate, and three is severe. The global physical health and global mental health scales have shown an internal consistency reliability of 0.81 and 0.86, respectively (Hays, Bjorner, Revicki, Spritzer, & Cella, 2009). Evidence has shown content validity, cross-sectional validity and clinical validity (Cella et al., 2010; DeWalt, Rothrock, Yount, & Stone, 2007; Liu, Cella, Gershon, Shen, Morales, Riley, & Hays, 2010). While this measure has not been standardized to the population being studied or to those with amputations or genital injury, the measure has been utilized with chronic health conditions such as cancer, fibromyalgia, diabetes, and asthma. PROMIS is intended to be used in the general population and in those with chronic conditions.

The sexual functioning measure assessed for interest in sexual activity, erectile functioning, and global satisfaction with sex life. For the sexual functioning and

satisfaction, the scores were expressed as T scores (mean=50, SD=10) with the mean response compared to the sexually active general population¹⁰. The measure has two types of reliability data: test-retest and internal consistency (erectile function: Cronbach's alpha 0.92; interest in sexual activity: Cronbach's alpha 0.87; global satisfaction with sex life: Cronbach's alpha 0.92) (PROMIS, 2015). Face validity, content validity, and construct validity have also been established (PROMIS, 2015).

Ethics and human subjects. When interviewing and researching a vulnerable population, considerations and implementation of ethical practice and moral integrity are vital in providing research that is trustworthy and valid (Hesse-Biber & Levy, 2011, p.59). Consent forms were given to the participants prior to the interviews (see Appendix D: Informed Consent). They contained a written informed consent and also a separate signature page. For the in-person sessions, the participants signed the consent form at the time of the interview. For the other interviews that occurred via phone and videoconference, the participants either scanned the signature page and emailed it, or they printed and mailed it directly via postal delivery. The consents were reviewed verbally again at the time of the interview, and permission was granted prior to audio recording of the session. The verbal consents included reviewing that participation in the study was voluntary, that participants had the right to refuse at any time, and that all information would be kept confidential. The purpose of the study was discussed, and the participants had an opportunity to ask questions. As previously noted, participants received a \$50 gift

¹⁰ While “qualitative related components were conducted using a clinical sample [cancer survivors] ... data from sexually active general population was used for parameter estimations” (PROMIS, “Reference populations”, n.d.).

card at the completion of the interview and, when the final research write-up is complete, the results will be shared with them.

The interviews were recorded on two devices, an iPhone app and a separate digital voice recorder, to ensure that the interviews were recorded and to assist if there were any areas that were difficult to hear on the recordings. The audio-recorded interviews were then immediately moved to a personal, password-protected computer. Any loose items, such as printed records of email correspondence, transcripts, and signed consents, were stored in a locked cabinet with an encrypted flash drive backup of all information.

All identifying information about the participants was removed. After completion of the interview, each participant received a pseudonym. Pseudonyms were used in all data going forward, and doctor names, hospitals, spouse names, and other identifying information was also removed. To further de-identify participants, pseudonyms were not connected with demographics or specific information about the details of the injury. Thus, in any final write up of the recorded information, the comorbid injuries, years in the military, and exact date of injury in conjunction with the pseudonyms were not included to further protect participants' identities. Guided by the TOUGH study, the ages of the participants were bracketed (Janak, Orman, Soderdahl, & Hudak, 2017). Upon positive completion of the research and dissertation, materials will be shredded and erased.

Ethical considerations for inclusion and exclusion criteria and recruitment were considered. Those with a clinical diagnosis of severe TBI were excluded, as cognitive abilities have been significantly impaired and may compromise informed consent.

Potential participants from fertility clinics had completed treatment. Colleagues and academic advisors were consulted when questions or concerns arose about recruitment techniques, such as with a participant who agreed to participate but had recently found out that his final round of fertility treatment was unsuccessful.

Trustworthiness and Rigor

Hammarberg, Kirkman, & deLacey (2016) examine the integrity and trustworthiness of qualitative research through credibility (correlated with internal validity), applicability (correlated with external validity), and consistency (correlated with reliability). There are several factors that can threaten the rigor of a research study, yet there are important actions that can be taken to assure trustworthiness and rigor.

Trustworthiness can be threatened by researcher bias (Padgett, 2008). My clinical work experience focuses on psychological support around reproductive health issues. I provide short-term counseling to discuss decision making about fertility treatment and the use of third-party reproduction in addition to ongoing therapy to help patients (or couples) deal with the psychological issues (e.g., anxiety, depression, marital conflict, and intimacy issues) related to infertility or other reproductive health issues. While I provide services for military members and veterans as well as their spouses who are undergoing fertility treatment for a variety of reasons (e.g., age, reproductive health issues such as endometriosis, and same-sex couples), I am not personally connected to any military or veteran facilities. I also have training and experience working with trauma survivors. This foundation helps me to effectively interview and be attuned to the issues experienced by this vulnerable population of service members. However, my professional knowledge was something I needed to consider as it could lead to

preconceived hypotheses or awareness that might bias the data collection and analysis. Thus, it was important for me to be cognizant of how these preconceptions and opinions might have influenced the research.

In order to practice neutrality, I engaged in memo writing, documentation, and jotting notes throughout the process to chronicle my decision processes as they related to my own personal reactions and biases. I kept a notebook and used a Microsoft Word document to record thoughts about the analysis and what led me to certain interpretations. These methods helped to provide confirmability.

My presence could have distorted how the participants verbalized the thoughts and experiences of their reproductive traumas and narratives, or they may have withheld information that was unpleasant (Padgett, 2008). Talking a bit about myself and the research prior to starting the interview as well as going from a more general topic to more specific inquiries about the GU injuries, I hoped to build rapport that may have lowered this misrepresentation.

I worked to achieve credibility in my data through data triangulation (using in-person interviews and a standardized measure), peer debriefing, and member checking. I consulted with my dissertation chair and several colleagues, discussing questions that arose during the data collection and analysis process. This debriefing process allowed me to have an attuned awareness about the research development, helping me to—as a research instrument—stay “sharp and true” (Padgett, 2008, p.189). As I was going through the data analysis process and considering the sample size, I engaged with a colleague who does clinical work and qualitative research in reproductive health issues to ensure that my process was accurate and thorough. In certain cases, when I had questions

about my data or what the participant was saying, I went back to consult with him to clarify remarks or listened again to the audio recording.

Bracketing and reflexivity statement. As I conducted the interviews and interpreted the analysis, my own experiences, assumptions, and biases were bound to be part of the research. Biases are not inherently negative. The idea is not to “remove all past knowledge,” but rather to put these experiences and knowledge to the side and keep it separate from the analysis of the data (Vagle, 2014, p. 67). By suspending my understandings and preconceived notions, I cultivated curiosity about the studied phenomenon and became more fully present and open to the participants during the interview and analysis process (Giorgi, 1997). Reflecting on my biases and experiences helped me to be aware of them throughout the data collection and analysis process.

Bracketing is derived from epoché, where the researcher suspends judgment and bias and engages in neutrality as a way to be attentive to the data (Giorgi, 1997). Epoché is generated from Husserl’s (2012/1913) philosophical tenants whereas Giorgi (1997) defines bracketing to better fit psychological research. Bracketing is a form of phenomenological reduction that enables researchers to unwrap the eidetic invariant structures of meaning and examine the essence of the experience through a clear lens (Vagle, 2014; Giorgi, 1997). While there are some philosophical differences, epoché and bracketing are often used interchangeably in the literature (Bednall, 2006). The differences are beyond the scope of this paper and research, but for the purposes of this research, the process will be referred to as bracketing as the tenants of the methodology were more closely aligned to Giorgi’s methodology. Bracketing is another way of demonstrating trustworthiness and validity of the data collection and analysis process

(Ahern, 1999). My goal was to be aware of how I shaped the data collection and analysis process, an important skill for researchers and clinicians.

Personal statement. Brené Brown notes, “Empathy is the skill or ability to tap into our own experiences in order to connect with an experience someone is relating to us. Compassion is the willingness to be open to it.” Using my own experiences provided me with the empathy to relate to and hear my participants, although these experiences could have potentially prejudiced the questions and the analysis process. To remain compassionate, I incorporated openness into the process. Bracketing allowed me to take in the lived experience as a separate and unique process and system of meaning (Moustakas, 1994). By bracketing my own beliefs and understanding, I became more aware of where empathy and compassion could be valuable and where they should have been sidelined so I could fully appreciate the participants’ experiences in a way that was uniquely disconnected from my knowledge.

The idea of healthy and loving children and families was always important to me as a value, a fact that contributed to my specialization in children, youth, and families in my Master of Social Work (MSW) program. Growing up, I was very aware of “where babies came from.” Pregnancy and sex were a normal part of family discussions in the Covington household. I have even seen the video of my cesarean section birth, and I remember regularly asking to watch the recording. I found a fascination with it that other parents did not appreciate in a five-year-old. As I am now in my reproductive years and anticipating starting a family of my own, I have a new appreciation of the importance of fertility and reproductive rights.

My drive to understand and help others has been in me since I was young, and the decision to pursue the field of social work came naturally to me. However, as I progressed in my career and decided to pursue a specialty similar to my mother's in reproductive health, I questioned my abilities and interests more. Because I wanted to separate myself from my mother and her work, I searched for a unique niche within reproductive health and found it unexpectedly when I met a veteran who had been injured in Afghanistan. He was the one who suggested I study this area of infertility, and I remember at the time thinking that I did not want to do this research. It seemed to be too much about the military and not enough about infertility.

Several months later, I was at dinner with a friend who had just told me that he and his wife were expecting a baby, and we started talking more about fertility and my career. We discussed Ernest Hemingway's *The Sun Also Rises* in which the narrator has war injuries that "took his manhood" and left him impotent. It was a clarifying moment for me, and something clicked. From that moment onward, I knew that it was the research I wanted to pursue. Intrinsicly, I am not neutral in my stance as an interests draw me to feel passionate about this area of study. In order to bracket this while conducting my research, I first had to recognize and acknowledge my presupposition.

After graduate school, I briefly contemplated joining the military and was in touch with a recruiter for about six months before deciding against it. The recruiter suggested that I pursue trauma and domestic violence cases because of this interest. Researching military members who had injuries that impaired fertility seemed to be the perfect convergence of my interest in the military and desire for an area of reproductive health that separated my work from my mother's.

While I do not have any personal experience or work specifically in the area of combat injuries that impair fertility, I provide full-time service in private practice around reproductive health issues and infertility, and I sometimes work with military members and veterans. A large portion of my expertise concentrates on ART and third-party reproduction for those donating and receiving eggs, sperm, and embryos or utilizing gestational surrogacy. I also employ elements of the reproductive story model (one theoretical framework for this research) with my patients on a clinical level. I have openness toward and awareness of the many ways families are made. This experience also causes me to hold some biases about the ways families are made and how people experience infertility.

Because I am a mental health therapist, my clinical skills were useful and important in the interviewing process. However, I also had to make a clear distinction between myself as a researcher by not crossing the boundary of becoming a therapist. There were certainly times at which I struggled with that boundary. With one participant in particular, I could tell that he was struggling with his recovery. In a therapy session, I probe a bit more about some of the areas in which he became reticent. At one point during the interview, he said that he did not want to talk about something. I handled this by saying that it was okay to decline to talk about things, and we moved on. However, in a therapy session, I would have examined this. This participant also called his depression “nothing real,” which was very challenging for me as a therapist, especially when hearing it from someone who was obviously struggling. As a clinician, I wanted to help him restructure the way he was thinking about his experience, so as a researcher I struggled

with being simply present with the experience he described. The lines were a bit more blurred during that interaction, and I processed through this with a colleague afterward.

The stigma and resistance toward mental health clinicians became apparent in many of my sessions, and it was something from which I had to remove myself. I used this as an opportunity to examine the underlying meaning and causes that contribute to resistances in recommended services for recovery rather than to correct statements about a therapist's role. For example, one participant mentioned that there was nothing a therapist could do about his infertility or genital injury. While I believe there are many ways a mental health professional can be of use, especially since this is what I do for my profession, I instead reflected understanding and probed a bit more to learn how he processed the information without the assistance of a mental health or medical provider.

As a therapist, in order to provide emotional support and effective communication, self-awareness and self-care become essential so that any personal issues or personal biases do not adversely impact patient interactions (Figley, 2002).

Supervision, case consultation, and reflection are essential in providing effective clinical care, and these skills were important to maintain as a researcher. To do this, I kept notes and memos about my experiences and issues that arose along the way. I also met with my advisor and colleagues as needed.

Additionally, I took time for myself when needed. After one interview, I had planned to sit down and do some more writing and work on my dissertation. However, I felt emotionally exhausted by everything this participant had told me about his experience. I decided that I should not go back to doing work and spent the duration of the day off with my family. It was a helpful self-care move and made sure that my own

feelings were kept separate from my analysis and interpretation of the veteran's description.

As I interpreted my analysis, I worked to remove presuppositions, allowing the phenomenon's themes and meaning to emerge rather than search for them (Vagle, 2014, p. 59). Before starting the research, beginning the interviews, and engaging in analysis, I wrote journal notes to detail my preexisting knowledge about the topics. The longest journal entry I wrote was prior to starting the analysis so that I could also address my own feelings that arose during the interview process as well as the other identified preexisting experiences and knowledge. The current reflection is based on that last logged entry.¹¹ With these noticed basic assumptions about how the participants may experience their recovery, I consciously decided to isolate these assumptions as I completed the analysis process. "Being patient and attentive," important skills as a therapist and researcher, allowed the data to have the space for the essences of the phenomenon to emerge (Vagle, 2014, p.68).

Data analysis

The interviews were analyzed from a descriptive phenomenological research approach. Rather than generalize, predict, or theorize, in phenomenology research, the goal was "to construct a possible interpretation of the nature of a certain human experience," seeking to understand the "what and how" of the experience (van Manen, 1984, p. 44; Creswell, 2007, p. 58). Analysis seeks to illuminate the major essential

¹¹ The journaling prior to the analysis was approximately 15 pages. This section takes the main highlights and relevant pieces, shifting from a personal account to a more academic analysis of my personal presuppositions.

themes made up of invariant contextual elements that make the lived experience meaningful (van Manen, 1997).

While concepts of the reproductive story and biopsychosocial recovery of the life course are utilized as the core organizing principles of my research question, all judgements were suspended about understanding combat-related reproductive trauma experiences “until they [were] found on a more certain basis” through the analysis of the data (Creswell, 2007, p. 59). Decisions were then made about how and in what way personal biases and experiences were introduced into the study, although the process was not always this seamless (Moustakas, 1994). Safeguards to prevent and decrease judgments and biases include writing a reflexivity statement, writing memos about the interview process and decisions in the analysis process, and consulting with colleagues to process the interview and analysis process, as needed. Considerations in the interpretation of the data included: age at the time of injury and developmental phase; years since the injury; their parental status prior to the injury and at the time of the interviews; and the severity of the GU injury.

This research used five stages for analysis of phenomenology research (Giorgi, 1997; Husserl, 2012/1913; Moustakas, 1994). The analysis process drew primarily from descriptive phenomenology of Giorgi, a modified Husserlian approach, rather than the interpretive phenomenological analysis of Martin Heidegger (Reiners, 2012; Vagle, 2016). To reveal the essence, phenomenological reduction must occur, which is the process of examining a phenomenon in a purer form as described by the participants (Dowling, 2007). The tenant of phenomenological reduction begins with describing personal experiences, fears, and biases with the phenomenon through bracketing (Giorgi,

2009; Husserl, 2012/1913). The process of bracketing helps a researcher to suspend understanding about the phenomenon and to enter with a more tabula-rasa approach, a new and fresh look to analysis (Dowling, 2007). Bracketing was the first step but continued throughout the data collection and analysis process.

The second step involved reading and re-reading the “naïve descriptions” of the participants’ firsthand accounts to view the entire experience objectively (Giorgi, 1985). This step continued the process of phenomenological reduction, unwrapping the surface, uncovering the core, and closely examining the essence to find invariant psychological meaning (Lin, 2013; Vagle, 2014). This process identified when there was a shift in the meaning of what the participant was saying (Giorgi, 2009). Each phrase, statement, or short passage depicted one meaning unit, ending where the meaning changes. Meaning units were used as a descriptive tool to continue to engage in bracketing and avoid hasty analysis (Giorgi, 1985). The meaning units started with the participant’s language and then were transformed to describe the “what” (textual description) and the “how” (imaginative variation or structural description) of the lived experience (Husserl, 2012/1913; Moustakas, 1994).

The imaginative variation is the process of transforming the “naïve descriptions” into more psychological language, through examining “different key terms, aspects, attitudes or values,” (DeCastro, 2003, p.51). This process revealed possible meaning and allowed for more manageable analysis as it reduced the meaning units into invariant elements (i.e., concepts that are constant throughout the interviews). What remained were the essential elements of the lived experience that were the same or shared (Lin, 2013; Vagle, 2014). The final step included synthesizing the textual description and imaginative

variation to provide the basis for writing the structure of the analysis. This structure and its essential elements formulated the “essence” of the phenomenon.

First cycles of analysis. Phenomenology uses an inductive approach, as one engages in bracketing and pulls out the important sentences and statements, initially all having the same weight and value (Creswell, 2007; Moustakas, 1994). Due to the lack of research in this area, an inductive approach seemed appropriate so that information was directly drawn from the interviews and bracketed to prevent unnecessary bias. Staying with the data and actual words of the participants helped to avoid missing something, making inaccurate assumptions, or engaging in a premature analysis (Giorgi, 1985).

Prior to performing the analysis, I practiced bracketing by enumerating what might prevent me from engaging in neutrality, including my academic knowledge and theoretical framework, my work background, and my personal experiences.

Subsequently, I read through each interview at least twice. During the first two times, I used pen and paper rather than CAQDAS. While I did not separate meaning units at this point, I did write memos throughout the interviews to familiarize myself with the data as much as possible and also to be aware of the places at which my own preconceptions might influence the analysis.

The coding process was not as continuous or organized as the steps discussed. While all the steps did occur, it became more iterative when I felt that I had missed something or wanted to clarify the essence of the reproductive trauma experience. I worked to restructure the meaning units, incorporating imaginative variation. After reading the interview, I utilized MAXQDA and began identifying meaning units by highlighting all of the important segments of the interviews while deleting any unrelated

to the research question (Creswell, 2007). This step helped to remove the “fluff” and select the most significant statements and areas that were specifically related to my research aim of understanding the veterans’ lived experiences with reproductive trauma and reconceiving their reproductive narratives. I initially used one highlighter (yellow) for all statements, stopping the highlight and beginning a new one when the meaning shifted. I assigned a code to each meaning unit using either an in-vivo code or one that summarized the statement’s meaning. This helped me to utilize imaginative variation. While I used MAXQDA to assist with analysis organization, I completed primary analysis outside the program by using physically printed Microsoft Word documents and a pen.

In a series of memos, I wrote my initial attempts to cluster the meaning units (see Table 6.5) (Moustakas, 1994). Upon additional examination and thoughtful consideration, I went back and considered another set of memos that I had been keeping as a rough narrative of how these statements were fitting together, taking the most memorable quotes and interactions from each. In this way, I captured more of the essence of the GU injury experience that was not being revealed in these clusters. While this initial attempt gave a context for the overall injury, the clusters lacked cohesion and contained a lot of interesting yet unrelated data that did not appropriately address research questions connected to the reproductive trauma and narrative. This process helped me to find the context in which to analyze and understand the reproductive trauma although it did not yield the essence of the GU experience. Hence, it is important to include and acknowledge this somewhat misguided process.

Table 6.5
Structuring meaning units-preliminary

Structure	Invariant Meaning Units¹²
Recovery	Experience with medical care; Ups and downs; Barriers to recovery; and Protective factors
Mental challenges and toughness	Denial; Grief and loss; Therapy services and avoidance; Change in mood; Lost identity; Working to achieve mental fitness; and Military culture
Search for motivation and direction and purpose	Changed/loss identity; Lacking direction; Finding direction; Adaptive sports socialization as giving direction; and Military culture
Meaning of GU injury	Mental impact on identity; Dealing with unknown; Testosterone impact; and Processing and talking about
Family building considerations	No (more) kids; Adoption versus sperm donation; Fertility and genetics; Barriers; and Ambivalence
New realities: Searching for normalcy	Process for acceptance; Relearning basics; Search for normalcy and independence; Needing help from others; and Memory issues
Intimacy post-injury	Not ready and barriers to intimacy; Sexual functioning and changes; and Relationship and dating experiences
Social support and interactions with overall recovery	Shared experiences; Family interactions; Lost connections; Military culture; and Vulnerability
Impact of technology changes	Technology not where it needed to be at injury; Helpful technology for prevention and recovery; and Ambivalence
School/employment/enjoyment	Lack of direction; Giving back to the community; and Search for direction
Importance of active lifestyle as a wounded warrior	Impact of aids (prosthetics, wheelchair, etc); Physical limitations and barriers; and Ways to engage in old activities
Context of injury	'Kaboom' injury; Initial assessment of injury; and GU injury and complications

Setting the larger context to the side, I went back and began to expressly examine the GU injury. I used two highlighters, one for statements specific to the reproductive trauma and narrative (yellow) and one for items related the biopsychosocial and polytrauma recovery process (magenta). I composed a memo specific to the clusters that were related to reproductive trauma and recovery meaning (see Figure 1 and Table 6.6).

¹² See Giorgi's (1997) work for further information about eidetic invariant meaning.

Figure 6.1
GU injuries and unknowns

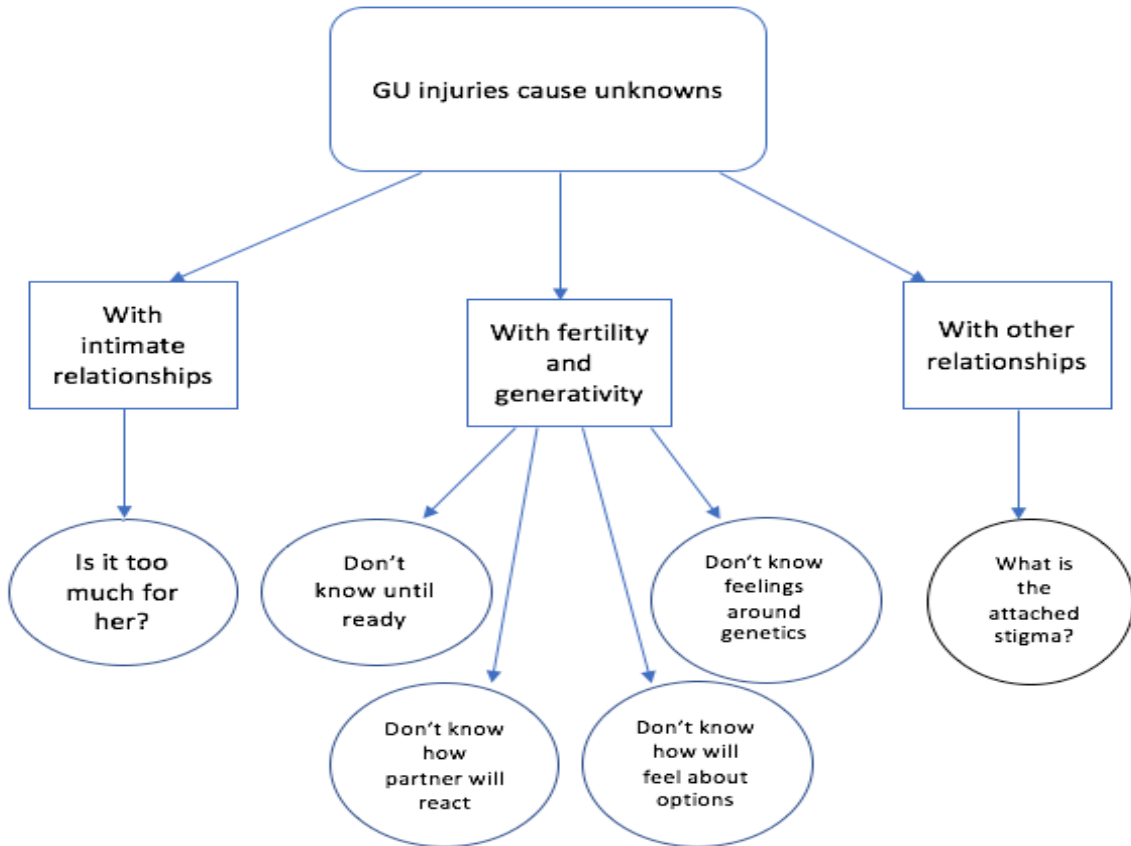


Table 6.6
Categorizing GU injury meaning units

Imaginative variation	Invariant meaning units
GU injury is difficult to describe	1. Hard to put into words 2. No one to help you-you have to do it on own-no one gets it so no true system of care 3. "I don't like to talk about it"
GU injury is a "heavy injury" and "mentally fucks with you"	1. Unknowns for future function-fertility as unknown 2. Unknowns for stigma with others (intimate and not) 3. Impacts who you are, identity, confidence
GU injury is "the elephant in the room"	1. People wonder and no one talks about it 2. People ask in unhelpful ways or make inappropriate comments 3. Nothing you can say but 'I don't want your sympathy'

Still working to distill the essence of the experience, I listened to the audio recordings of the interview again. After reading and listening, I wrote a summary of the

experience and an answer to my research questions for each participant. This helped me to think about the experience and wade through the polytrauma to extract and further dissect the meaning that was specific to the reproductive trauma and narrative.

Listening to, reading, re-listening to, and re-reading these interviews proved to be critical to the process. Sometimes the veterans talked generally about the loss of both testicles, and when I reviewed the interview, I noticed parts in which they acknowledged that it was not a total loss of both testicles. Alternatively, some participants seemed to minimize the extent of their injuries through their outlook and experience. For example, in one interview I had written that the participant incurred a minor penile injury. However, when I went back, I heard him mention that he was not able to have vaginal intercourse due the extent of his injury and that he had to sit on his pelvis because his buttocks were almost completely destroyed in the blast. He spoke about the penile injury hopefully, believing that he might regain sexual functioning, yet he is unable to have vaginal intercourse. Reading and listening to the interviews helped me to think about the overall context of how people framed their injuries and what seemed to present resilience or risk-factors.

Secondary cycles of coding

Using the two highlighters in MAXQDA, I was able to separately look at the yellow-highlighted data (reproductive trauma and narrative related) and magenta-highlighted data (the general recovery and social supports-non-intimate). This helped me to home in on the essence of my question of the reproductive narrative. Next, I considered just the yellow-highlighted data and categorized it. I then did this separately for the magenta-highlighted data. Under the reproductive trauma and narrative, I

structured the meaning units into: 1) meaning of GU injuries; 2) infertility; 3) fertility preservation and genetics; 4) family development; 5) talking to others; 6) gaps in resources; 7) sexual exploration and functioning; 8) testosterone, penile transplant, and other sexual functioning aids; and 9) impact on intimate relationships. Under general recovery, I grouped the meaning units into: 1) context of injury; 2) social supports; 3) physical recovery; 4) grief and loss; 5) new realities and normal; 6) importance of active lifestyle; 7) mental toughness and military influence; and 8) new direction and purpose.

Refining meaning units and eliciting themes

With initial attempts to construct a structure from the meaning units, it is important to stay with a participant's language, using in-vivo codes, but Giorgi (1997) suggests that as the researcher reorganizes and synthesizes the meaning units, disciplinary language can be used to re-describe the initial codes. At this time, I began to think about how I might incorporate my research questions and theoretical frameworks.

With a hard copy of my questions and my study's aim, I printed several of my memos related to the clustering process. I laid these on the table and, using my notebook, began writing notes for pulling all of these together. Thinking about my goal of understanding the biopsychosocial process of recovery in relation to the reproductive story, I examined my previous clusters again.

After completing several cycles of coding and writing multiple memos examining my thought process, I ultimately decided to use the research question and theoretical framework to structure the themes that were emerging from the data. The research question and framework helped to provide a basis for understanding and examining the reproductive narrative and recovery process. I grouped the text into five clusters: context

of the injury, quality of life, sexual health and functioning, identity construction, and reproductive health and narrative.

The process of structuring, restructuring, reading, and re-reading eventually led me to create three categories and themes (see Table 6.7). The quality of life and reproductive narrative themes were derived from the data but guided by the theoretical framework. The identity construction theme primarily arose from the data and provided additional exploration and understanding for the experience of reconceiving the reproductive narrative. These results will be explored in detail in the following section.

Table 6.7
Classification of themes

Essential structure	Basic essence	Invariant contextual elements
Changes in quality of life	<i>Recovery is ongoing and influenced by various factors.</i>	<ol style="list-style-type: none"> 1. Biological: Impact of polytrauma and physical health recovery; 2. Psychological: Mental toughness and impact of mental health recovery; and 3. Social: Impact of linked lives
Re-conceiving the reproductive narrative	<i>It is a secondary, challenging, and iterative process although often a primary concern.</i>	<ol style="list-style-type: none"> 1. Putting on the backburner: understanding the GU injury as a reproductive trauma; 2. Sexual health and functioning as different and new; 3. Impact on intimate relationships; and 4. Secondary reproductive trauma: infertility and sterility
Identity construction	<i>Realizing the new self is a process influenced by quality of life factors.</i>	<ol style="list-style-type: none"> 1. Grief and loss; 2. Realizing new realities; 3. Finding normalcy in old and new selves; 4. Importance of active lifestyle; and 5. Finding new direction and purpose

CHAPTER 7

Results

While combat and combat injuries are traumatic and provide a context for this study, the goal of this dissertation is to focus specifically on reproductive trauma that results from combat injury. Although it is impossible to examine the reproductive trauma without considering the implications of other combat injuries (polytrauma), the primary focus is the subsequent reproductive narrative resulting from this GU injury.

This chapter is organized into four sections: the essential ingredients of the textual and structural description of the reproductive trauma; the PROMIS results and discussion; a construction of the essence of the associated phenomenon; and then re-examining of the research questions. Under the textual and structural description, the themes are further explored by utilizing the participants' responses. The second part reviews the results from the application of the PROMIS measure. Next is an illustration of the essence of the GU injury experience and the reproductive narrative. Lastly, there is the research questions are re-examined integrating the results from the interviews and the PROMIS measure.

All the subjects¹³ were injured in Afghanistan between 2005-2012. Nine of the injured soldiers walked on an IED, and one of the subjects experienced his injuries as a result of multiple gun shots. The age of the subjects at the time of injury ranges between 19-38, and the time since the injury is between 5-12 years with a mean of 6.3 years. Six participants were Marines, three were Army Soldiers, and one was a Navy Sailor. All

¹³ All participants have been given pseudonyms. Any other names or identifying information has been redacted or changed. The pseudonym has been removed when limited identifying information exists in a specific quote.

were subsequently medically retired from the military. Five were junior enlisted service members, four noncommissioned officers, and one was a commissioned officer. The level of GU injury ranges from hypogonadism to total loss of penis and testicles.

Essential Elements of the

Textual and Structural Description of the Reproductive Trauma

The veterans interviewed for this research expressed diverse and unique experiences with their recovery from GU injury. There are differences based on relationships status, age at the time of injury, age currently, time since injury, support system, and education level. As Joe noted, “I always like to say that every injury is as individual as the individual.” There is “just not a cookie-cutter answer for injuries,” Noah stated. These statements reflect the many themes that emerged. While there are themes that led to saturation, the individuals’ experiences and recovery are unique, just as two people with diabetes might manifest symptoms in different ways yet have similar experiences with the disease. These textual and structural descriptions consider the “how” and “what” of the experiences by looking at the overarching essential themes and then more closely examining individual responses.

Changes in Quality of Life

During discussions of the recovery process, the idea that *recovery is ongoing and never really fully ending* became a central theme. Wyatt stated avidly, “Oh, I am still recovering” when asked how long the recovery took. While some participants felt they had “recovered,” there was also a range of what this meant since the injury and subsequent hindsight made them realize that the recovery continues. James expressed this as he noted, “I wanna say I’m fully recovered now, but I also wanted to say that, you

know, one year post-injured and three years' post-injury, now its seven years post-injury so uh, maybe I'll say it at ten years of post-injury, so.”

Additionally, there are ongoing needs and management related to the injury. Ryan noted, “I mean, technically, I’m still recovering because every once in a while, like, my leg will rip open or whatever. So I still have to, you know, stop walking and stuff and then restart all over again. So it’s always a continual recovery process.” However, Joe said:

I would say with confidence that definitely I’ve completed my recovery as far as the different aspects of life. There’s always going to be an ongoing thing—you know—things that change obviously, anything medical-wise. And with that, you're always having to deal with stuff going forward. And sometimes they're different, or sometimes it’s the same stuff you're dealing with, just here and there.

The recovery process, including efforts to improve quality of life, is an ongoing and constant effort that ebbs and flows. The changes in quality of life across the recovery process are discussed in three major domains: biological, the impact of physical health recovery; psychological, the impact of mental health recovery; and social, the impact of linked lives. These subcategories will be further explored and explained in the next subsections. Although they are broken into separate categories, there is overlap between these subcategories as they interact with one another to influence the recovery.

Biological: Impact of polytrauma and the physical health recovery. The physical health recovery is the primary task that is discussed during the recovery process. To understand the biological implications, context will be given for initial feelings when the injury occurred and followed by a discussion of subsequent acute care and rehabilitation, ongoing needs, and gaps in resources related to the GU injury. To note the range, comorbid injuries include but are not limited to concussion, TBI, mental health

diagnosis, single amputation, double amputation, triple amputation, injury to arm, loss of digits, burst eardrum, and lung injury. The results focus primarily on the GU injury and do not go into as great detail about comorbid injuries as they were not the primary focus of this dissertation.

Survival and “How’s my dick?”. A sub-theme that arose is how quickly the injury occurred, followed by a period of trying to figure out what happened and to understand the extent of the injuries. Adam explained the blast happening:

Uh, we were in [location redacted] province, Afghanistan. We were on a foot patrol. Me and my dog, [name redacted] -- frickin' me and him and all my buddies in the frickin' squad -- we were crossing over the irrigation ditch heading back to our little base, and when my team came, walking up, stepping in the boot prints of the guys in front of me, and as I go to jump, I'm pushing off with my right foot, and just kaboom. You know? A lot of dirt, and everything's black and dirt and smoke. Frickin', uh, felt weight, I mean, I went airborne. Frickin', you know, landed back in the crater. That sucked.

There was an initial sense of being surprised and not knowing exactly what happened.

Losing a sense of time or some memory of the injury occurrence was explored.

Owen reported, “I don't know if I was actually unconscious or not. Um, there's a section of time I don't remember but, as far as I know, I was never actually out. There's just a chunk that I don't remember.” Logan noted, “I really don't remember the blast or anything. I just rode over an IED, and I was sitting down in a vehicle, and I woke up in Germany, like a week later. They told me I was gonna go home. My, my testicles, my scrotum, was literally like the size of a softball.” Ryan said:

So the Afghan Army actually ended up helping us, and they drove what we called a “Danger Ranger.” So it’s just a Ford Ranger that drove across the bridge. So we were in the back of those. And uh, got driven—you know, I ended up blacking out, um, as we—once I got sat down in the vehicle and everything, that’s when I kind of blacked out. And woke up in [location redacted, in U.S.] at the hospital there.

While there was mostly an awareness of what was happening at the time of the injury, there eventually became a blank when being medically evacuated out of Afghanistan.

There was also discussion about just trying to stay alive after the injury occurred.

One participant described:

...and my penis was still intact as well, but it was also damaged. So that, they were still there but a lot of bleeding out, just a lot of blood loss. They were trying to do whatever they can to bandage me up. And I was trying to do whatever I can to try to help guide them to tell them what to do with whatever I was feeling. Um, I was trying to make sure I could survive, too.

Noah noted:

I would've been dead, you know, if I wouldn't have stayed calm. I'd be dead if, you know. There's so many things that just kind of fell in place that that's why I'm still alive...Okay, this is getting harder to breathe. It's...I've lost so much blood that it's getting kind of hard to stay awake. I told my guys, "Don't let me fall asleep. If I do, yank on the tourniquets and twist on them harder" because it's a pain I don't wish on anybody.

He tried to figure out ways to stay conscious and alive.

Immediately after the injury, the initial concern was about discerning any damage to the genital area. One participant stated:

They drag me out of the hole, and they take me to a safe spot, and they start performing all, like, the lifesaving steps. And then the first question I asked, you know, I was like, "Do I still have my penis?" You know, that was the first thing I asked. I was like, "Doc, do I still have my dick?" And he was like, "Not right now." Yeah, so I just remember asking him, and he was like, "Not right now. Not right now." And I just remember looking at him and being like—like, "You have to check now." And so he's like, "Fine." So he stops everything that he's doing, and he goes and looks. He's like, "Yeah, you still have your junk." And I'm like, "Cool."

There was a temporary sense of relief in knowing that their penises were intact after the blast. Another participant also reports,

When the smoke was clearing...that I could see...I was butt-ass naked; it blew all my clothes off. I was butt naked with a plate carrier on, laying in the crater, and I couldn't see the damage, the whole damage to my legs, so I was trying to look, but

I could see my ding-a-ling was still attached to me, so I was happy about that. But there's also blood everywhere, so I figured, you know, "You're missing at least one of your nuts."

The genital injury was often one that the veterans quickly checked or considered.

The extent of the GU injury was not always immediately apparent. One participant reported, "I was just covered in blood right up in here. And so I had no idea like how bad it was. But everything was intact there [referencing genitals] but when I woke up, they say they had to amputate everything for tissue damage and things like that." Another participant stated, "Everything looked all right, initially, but then, um, it started to swell up real bad." He continued,

I had to use a sling on my, um, on my, um, uh, on the scrotum, in order to move, because it was bigger than a softball, way bigger, closer to a melon. Um, it just...All the fluid that would've been going into my legs had nowhere to go. It went to the path of least resistance. But everything seemed to be okay. It seemed to be fine. They told me not to worry about that...Um, but, um, I ended up having a problem where, uh, both testicles started shrinking, due to atrophy.

While the experience with the GU injuries was a leading concern immediately after the injury, during the recovery and stabilization, other injuries became the primary focus to address. While feeling fortunate to have survived, the process of understanding the GU injury played an important role throughout the recovery as sexual and reproductive function were considered.

Acute care and rehabilitation: I am not dead. Once in the hospital, a second chance to examine the injuries took place. Andrew described his feelings after having learned about his GU injury:

Um, at that time it was like a shocker, and then I was like...then I just felt like, "Wow, at least I'm still alive." It was like...but I mean I was really early. I was still really lowered up on all kinds of fentanyl and stuff. So I don't think it actually really hit me until well after I got out.

One veteran explained:

I wonder if I, like, fully processed that moment and those emotions or not, or if I was still just totally in, like, soldier mode, like push forward. But I remember thinking, “Wow, that sucks. At least I still have my penis.” And my penis was burnt, so I remember thinking how weird it was that every day the nurses would rub Bacitracin all over my junk, and we started making jokes about that rather quickly, or I did at least. Um, but I don't remember it being like a big "This is terrible" moment.

On the other hand, Logan noted that upon first hearing about the injury, “I really...I was so medicated. I didn't really have many thoughts or anything at the time. Um, I was just depressed. I just...I didn't know what was gonna happen. I didn't know exactly what...I cried a lot.” There was an overarching sub-theme of difficulty with grasping the gravity of the injury, thus the more immediate physical health issues became the primary concern.

Concern about death was a reality immediately following the injury and as stabilization occurred. Wyatt discussed developing pneumonia after incurring the injury and, as a result, was unable to be transported to the U.S. Jack described an infection he developed from the parasites that entered his body during the blast. He explained:

So I accepted it. I accepted my death, whenever it was gonna happen. Fuck it. So, uh, the next thing you know, they said they're still gonna do, uh, surgeries, and cleaning surgeries, and just surgeries to try to get the fungus out as much as they can during my comfort passing, um, time frame. When that happened, all of a sudden in the morning, they tell me that, you know, the fungi was gone. It wasn't entirely gone.

Jack described being put into “comfort passing”, which he defined as “a phase in the hospital” where “they do whatever they can to make sure that you're comfortable as you pass away.” He noted, “They influenced me to keep fighting. I did. I didn't want to die. I did not actually want to die. I want to keep living, but at the same time, I understand like my service. And I understood what could happen to me. You know what I mean?”

Ryan described dealing with multiple infections and fighting off death as well. He noted, "I'm just sitting there like, 'How do I make it through this?' And it was more just like, you know, taking it a day at a time, I guess." He went on to explain "how there is no way of telling what the next real thing was going to be. If it was going to be pneumonia or an infection or, you know, reopening of a wound, or whatever." Taking each day as individual days became essential to his recovery. The process of dying prompted the veteran to put things into a different perspective, to take things one day at a time, and to have a feeling of being fortunate to be alive.

In order to address other domains of recovery, the participants discussed the necessity of relearning basic functions first, after there was stabilization and healing of physical wounds. One participant described how the recovery was difficult because he had to learn previous skills. He noted that he had to learn "just things that I couldn't do without thinking about. I had to apply myself more than I ever would have had to." He further clarified, "Like, just stepping over something or taking short, little steps, or I couldn't walk and talk on the phone for a while because I had crutches. Uh, just things you wouldn't even think about, really."

The recovery process has a lot of "progression and then backsliding, progression, backsliding, progression and backsliding," as Wyatt notes. The process is arduous "because you gotta learn how to walk and everything, and I think that's the hardest part is when you can't do everything you used to. So like you have to rely on other people. It's kind of...that's the tough part I've had," as one veteran described.

Ongoing needs. Another sub-theme that came up is the importance of staying active due to the extent and nature of the injuries and the impact of these injuries on the

body. Noah explained, “I’m a pretty active individual, um, you know, unfortunately, once you get injured, if you don’t stay ahead of the injury, it will take over and you will lose control, uh, especially with the severe injuries that I’ve sustained.”

Owen described how he expected his health to fail, noting:

I don't know. Just I guess... I mean, my body is eventually gonna break down. It's gonna wear down faster than normal. Um. Uh. I've got a lot of back issues, uh, you know, due to the legs, and chair, and everything. So... Um. Just kind of... Um. Yeah, I mean, just, just physically, you know, I'm not gonna last as long.

He continued to discuss the “expectation” associated with his body failing him and dying earlier. However, he noted, “But you know, not being active is like the worst possible thing you can do. But being active, you know, it also creates wear and tear.”

Technological advancement. Technological advancements, both in positive and negative ways, have impacted the lives of these veterans. Some of the advancements happened as a result of the increased numbers of injuries during these recent wars although at times some of the “advancements” did not actually help or they only became available after the injury occurred. For example, Adam talked about the genital protection and “complete body armor” he was wearing when injured noting, “Yeah, it's not, it doesn't, it's a flap that hangs in front of your junk, it's not, you know, it's not, like, underwear, where it's wrapped up around it and stuff.” He continued, discussing his feelings around advancement in genital protection since the injury:

But honestly, like, I saw, I read this Army, "Army Times" article that showed a new frickin' pelvic protection things that was basically like Kevlar boxer briefs. I was like, "Are you fuckin' kidding me? You've just now come out with this bullshit? What kind of ridiculous shit is that?" Fuckin', uh, it's irrit-, that was irritating as fuck, but it's nice to know they're starting to put more emphasis on that, you know.

Owen admitted that the pelvic protection probably did help prevent further genital injury, noting, “I might have had more damage if I didn't have them on.” However, Andrew said, “Um, I mean we were supposed to wear these little plates, but I didn't have mine because it would always get kicking around because...and honestly with the amount of blast and how I took it, it really won't helped anyways” due to the nature of injury that results from stepping on a direct explosive.

The advances in transplants, including arm and penile, and cell regeneration were discussed in the interviews. However, one veteran addressed these advances in terms of his own decisions around what to do regarding having a penile amputation. He stated:

I mean, I've got friends that have bilateral arm transplants and single arm transplants and the medications they've got to be on, and they're getting all these side effects and I'm like, "Was that worth it?" And again, here's the kicker: I'm not guaranteed that I can use it for intercourse.

He continued to process what the meaning of a penile transplant would be, noting, “And it's hard to really come to terms to what's justifiable and what's not.”

Another participant discussed different kinds of transplants surgeries, but he discussed them in a more hopeful way. He mentioned deciding to do transplant surgery over a skin graft for genital reconstruction, noting:

I'm kind of excited to be normal again [after the penile transplant]. Um and you know, I mean it doesn't...I mean I don't sound superficial but I mean the whole fact that they would have to take a huge chunk and kind of look like that on my forearm for the rest of my life kind of freaked me out a little bit. And I'm not gonna lie but, um, I just think it's something exciting if it just allows me to be normal again where I don't have to worry about surgeries anymore. I'm okay with that.

The skin graft would be taken from his arm to create an appendage without hope for sexual function. It is simply to build tissue for him to be able to stand while urinating.

The penile transplant has the potential for allowing the recipient to have an erection.

While advancement can bring hope and promise, it also brings unknowns. The increased GU injuries have been the impetus to increase protection and medical options, but there is still a way to go for prevention and more certain treatment.

Gaps in resources. While there have been many advances made in technology that have helped to keep these veterans alive, there are also continued gaps in resources, particularly regarding GU injuries and sexual functioning. One participant described learning how to walk again “fairly quickly,” but regarding his genital injury noted:

I have one doctor tell me there was nothing they could do and I was kind of stuck. Um, neither ones were like there's other stuff they can do so. I mean back then they didn't really have any programs. So the main focus for them was to work on my legs, and so they put all that surgery in the backburner, and I've been learning to walk and I did all that. Um, it would have been about [year redacted, a year and a half later] when finally I was able to get urology consults.

There is common sub-theme of feeling that there was nothing that could be done for the GU injury and significant time elapsing before being seen by a urologist.

One veteran described the gaps in resources and how difficult it was that people would not talk about his GU injury. He stated:

There was no real system for those types of injuries, uh, here. Uh, nobody knew how to deal with it. We basically didn't talk about it. The whole time I was inpatient, I was trying to get people to come in, and I was like, "Hey, can I get someone to talk to me about?" Because they'd send in experts on prosthetics and legs and abdominal injuries and head traumas and nerve damage and every other injury I sustained except for the penis and testicles. As a matter of fact, they wouldn't even say the word "penis and testicles." They wouldn't even brush the topic.

James noted, “I mean the VA will ask you a battery of questions like, ‘How much do you drink? How much do you smoke? Do you have any suicidal thoughts?’ But they're never, never once have they asked, ‘Are you happy with your sex life?’” Whether it was simply

avoided or there were gaps in the resources or training, the veterans described this lack of resources or discussion in many avenues.

The GU injury, as it is not life threatening, may not get the attention that it needs. While it is beginning to get more focus and support, Adam noted, “That was irritating as fuck [that there were little resources], but it's nice to know they're starting to put more emphasis on that, you know.” Owen noted issues dealing with his GU injury and the worsening of symptoms, as he described:

Yeah, because I had to go to the normal urology clinic and that is not a sexual health clinic. They don't give a shit about anything. Um, as far as most doctors are concerned, if they get...If they're gone or removed or they don't work, it's not a medical issue. It's not gonna kill you.

The lack of discussion with medical providers around the impact of the GU injury and, more specifically, on the need for testosterone, became a primary issue which had significant influence on the veterans’ physical health, mental health, sexual functioning, intimacy, and fertility. This sub-theme related to testosterone will be further explored in the reproductive narrative.

Psychological: Impact of mental health recovery. The mental health recovery from the injury takes place in tandem with the physical health recovery, but the mental health recovery brings up challenges compounded by the military culture. James described this barrier:

If you had asked me, "Hey, I'm a psychologist and it seems like you're not...no one's really addressing the psychological impact of your injuries," I would've been like, "Yeah, well there aren't any psychological impacts. Like my legs got blown off. I'm a soldier." What else is there to say? You know, I'll move on. But now as a much more mature, wiser person, uh, I look back on that and I'm like, "Man, I think that was a missed opportunity."

Similarly, as Andrew stated, the psychological aspects are “definitely the hardest part of recovery.” Wyatt further explained, “The stigma that you have problems [that require] therapy is what draws people away, especially in the military.” The desire for things to be “normal” brings additional psychological challenges to merging the old self and the new realities.

Stigma and psychological impact of recovery. There is a range of views on the psychological impact of recovery that seems to stem primarily from what is happening at the time in the recovery process. Some report to be struggling with the recovery, while others seem to have a bit more acceptance of their injuries. Overall, there is an acknowledgement that the GU injury and the polytrauma experienced are difficult to work through. Logan described,

I'm not really the same anymore. I don't...Especially like right now, I just feel like my...I don't want to do anything. I used to be, like, light, bright, and happy, want to do stuff. Now, I'm just wearing a Black Sabbath T-shirt and sitting at home, and it's 80 degrees outside. Because of it, basically. I'm basically depressed because of it.

Jack described the injury as “a very devastating blow” for which he was not prepared; it changed his future plans significantly.

There is an undertone that the veterans were prepared to die but not prepared for what actually happened. James noted:

Look, I was [age redacted, 21-29]-years old. I was an Airborne Ranger. I would've been like, "I'm not getting blown up." I mean, when I deployed I thought...here's what I thought. I thought, "I'm either going to die, or I'm gonna to be fine." What I didn't think was I get horribly maimed. It sounds silly but I think that's the way most infantry men think like you're either going to die on the battlefield or you're not going to get hurt. What we forget is this there's an in-between.

Although there is some awareness of being hurt, it is a difficult process to prepare for what an injury might mean, and it takes an emotional toll.

Noah went on to explain how he has dealt with PTSD and other mental health diagnoses: “I think I had depression initially when I was first injured. Yeah, a lot of what-ifs, a lot of unknowns, you know. And when you're overwhelmed with that, you get a lot of depression. Sorry, I don't care who you are.” Joe also described that although he has never had a formal mental health diagnosis:

The frustration of the injury, if things aren't going well with, ah, options, medications, or whatever it may be, or the fact that you lose, you know, full—basically all of your sexual function, ability, and things like that, it's definitely a lot of mental draining thing to be able to deal with.

The dealing with the unknowns apparent in the recovery process presents many challenges. Unknowns were described in many realms, including sexual functioning (Will I be able to have sex?), intimate relationships (Will it be too much for her?), socially (What is the stigma attached?), family building (Will I be able to have children?), etc. Noah noted that “compartmentalizing” helps him to manage these unknowns and trauma from combat.

The stigma associated with mental health is evident and is adverse to recovery. Wyatt discussed his resistance to therapy this way: “You know, you go to see the shrink—‘You're fucked up.’ ‘What's wrong with you?’ Or you're—or you're a bitch. Either/or.” He continued by stating that receiving mental health help is like having “a shadow” over you because of the stigma and that:

I think it took me getting out of the military and then, you know, obviously having to go through this—not even my traumatic experience for myself, but the traumatic experience of having to go through like a divorce. That's when finally, it was like, “Look, I—you need to get your shit together.”

This stigma and shame prevented him from engaging in mental health support earlier.

Once out of the hospital and stabilized, veterans feel as though the recovery should be easier at that point, and it is also where accepting new realities, finding normalcy, and becoming more independent begin. James noted:

Um, the darkest days of my injury I would say were probably the years like two to four where I have recovered from the injury in the sense that I had, you know, taken stock of all the injuries. I was out of the hospital. I was exercising. I was socializing somewhat. You know, it was apparent to my friends and family that I was going to survive and there wasn't any serious brain damage, which is a surprise for an injury like mine. Um, and so I felt on the one hand like, "Hey, I've cleared the big hurdle. Everything should be downhill from here." But on the other hand, I just didn't feel happy about life, like I wasn't good enough at walking to really take pride in that. Um, I wasn't able to exercise the way I wanted to, I wasn't able to interact with people.

Sometimes understanding how the injury is impacting the individual is hard to do in the moment and some retrospect allows for clarity.

Self-esteem and confidence issues arose after the injury that were complicated by this loss of direction. James explained:

Looking back on it, I would say I had a form of mild depression in those years. Like, I just remember sitting around my apartment a lot. I'd go to my daily physical therapy. I was still on active duty at that time for most of it, I think, so I was still getting paid a salary, you know. I didn't really have any other responsibilities than to take care of myself.

He continued, explaining how he had a tremendous support system so “like, day-to-day was easy but overall, I think I was just in like a mental funk where I wasn't loving life.”

There are changes that are hard to accept. The change in confidence and self-esteem particularly become apparent when social settings are explored, veterans meet new people, and they date. This will be discussed further under the social section and is another example of the biopsychosocial interchange.

Managing feelings. Another sub-theme within the psychological recovery is finding ways to manage feelings about the GU injury in the context of the overall injury. Some participants use humor to deal with it, while others use drugs or alcohol. Regardless of the tactic used, there is an underlying feeling of not being in control of the injury and not being able to engage with others.

James described being in the hospital after the injury, noting: "I was probably uncomfortable with the injury. I was uncomfortable with the whole thing of like, "Hey, I have no legs," and I'm laying in a hospital bed, and I'm reliant on all these people to like keep me alive." He continued:

So I think when I started making jokes about it, that's kind of always been my nature. I've always used humor to defuse tense situations or to distract from uncomfortable situations, whether in athletics or the infantry lifestyle or there in the hospital room. Um, yeah.

The humor brought out aspects of his old self that helped him to better deal with the psychological aspects of being hospitalized. James elaborated about that humor: "Like I kind of like dirty jokes and immature jokes and stuff. So I've always joked about dicks and balls my whole life. Um, and probably just because of that, like, wasn't going to stop making jokes."

Another veteran discussed using humor when he found out about the extent of his GU injuries. He recounted:

And, uh, he tells me, "Well, you're missing your penis and testicles," and he's telling me this as politely as he can, and I'm like, "This guy doesn't know they've already told me this. So I'll play along." I'm like, "Doc, just unplug me now, you know, just, I don't wanna live. I'm not a man. I can't do this anymore." And he's like, "No, no, no, you don't understand." And he's doing his best to talk to me in that "It's okay, we're gonna get through this" bit. I start to even, you know, tear up and everything.

Once the doctor realized that he was joking, the veteran responded:

“Well, what am I supposed to do? Die? I mean, you know, it is what it is, I'm still alive. I get to see my daughter still. I mean, you know, am I upset about it? Well yeah, but, you know, I will figure out how to work through this.” Again, that was early on. That was, you know, fresh after being told what my injuries were.

While he has used humor to deal with the injuries and tried to retain his identity as an “alpha male,” he acknowledged the pain around dealing with it and the loneliness of the injury, noting, “The problem was, I didn't have anybody that I could vent to” because “they didn't understand it.”

As opposed to humor, the use of drugs and alcohol was discussed in dealing with the psychological impact of the injuries. Andrew mentioned this while discussing a more difficult time in his recovery: “Uh drug addiction. Uh, like a lot of guilt from what...I mean at first, I thought it was the injury that bothered me. It was more, um, just stuff that happened over there. And so, I guess when that comes out and stuff that that really kind of bothered me. A lot of the Oxy that I got hooked on was a hard thing to have to quit.”

Jack, too, noted how he began to “drink heavily because I did hate the fact that I could no longer run as fast as I knew I could run” or be as physically active as he used to be. He continued:

And during that phase, it was hard because I just hated the fact, like I said, that I couldn't, that I couldn't chase down anything. I couldn't run. I couldn't do any of that no more. I hated that. I hated that. I did not like that. I hated that, a very powerful word. And so I started drinking again.

The use of drugs and alcohol became an outlet for the veteran to deal with the frustrations of his injuries and the lack of control and direction. However, it prevented him from engaging in or showing up for the things that were necessary for his recovery. Thus, he eventually went to a detox program and stopped drinking.

Military mental toughness. Despite some acknowledged resistance to therapy and mental health intervention, the importance of needing to address mental health became a consistent sub-theme. The use of physical activity is a main source of care for mental health. While mental health is important, there are multiple ways of dealing with and managing feelings. Adam reported:

I was just doing a lot of drugs at my apartment [laughs] when I moved to [location redacted]. Frickin', uh, then I met this retired NFL player, ran, runs an adaptive gym for frickin', you know, crippled civilians and combat-wounded veterans and shit. And frickin' involved with him, and that was one of the smartest decisions I ever made, frickin' getting, like, super healthy and all that again, physically and mentally.

Mental health issues impact multiple areas of life. Noah discussed how mental health is important for physical health:

Um, uh, anxiety. I mean, I had a little, but you learn how to deal with that and that can change by...you're in control of you. You know, you've got to remember that. The mind is the strongest muscle you have, that you've been given. We just, as human beings, have been taught that it isn't, you know, and, uh, the more that you can work on that muscle and strengthen it, then you get through anything. It doesn't matter what your body...Your body can shut down. Your mind will keep going and your body's gonna fall, so I just try and work on that as much as I can.

He also described how taking care of mental health needs to be the priority. He explained his self-awareness when helping other wounded warriors this way: “‘Why am I in this rabbit hole all of a sudden?’” and then realizing, ‘Oh crap. Hey, I got to take care of myself too.’ Um, so physically, I’ve just learned that you have to make that a priority. You have to.”

Mental health may not always be a priority in these medical settings. James described the lack of discussion around what the physical injuries meant psychologically. He mentioned dealing with his GU injury:

In addition to all the other medicines I was taking at the time, but no one ever like sat down and said, "Here's the implications. Tell me how you feel about it." But, no one did that with my leg injury either, like processing the emotional psychological aspect of the issue was not a priority in the military hospital.

The use of military culture is a factor that impacts the mental health recovery, in both positive (toughness) and negative (stigma) ways. Wyatt said, "And it was just that stubbornness that eventually carried me through. But it also, I think, also affected me negatively because I didn't recover the way the professionals thought I should have recovered," and now he is working on the psychological impact of his recovery. Noah discussed how he used the military culture to deal with these injuries and mentioned this to other veterans:

Don't ever let your injury define you as a person. If you do, you're a victim, and we're not victims. We're in the military and not victims. We're mentally stronger than the average American citizen, period. Don't allow your injuries to dictate who you are.

It is a challenge to remain mentally strong.

Social: Impact of linked lives. The recovery from GU injury is mostly an internal experience as there are difficulties talking about the injury, yet it occurs in the context of social relationships with medical staff as well as family and friends. There is worry about what other might say or think about the injury. As Adam noted, "Everyone fuckin' wonders, you know. Everyone fuckin' wonders," and there are positive and negative interactions when people ask. While overall people are supportive, it is an injury that is internally experienced due to its private nature, but the social domains also affect veterans' experiences with GU injury.

There are several positive and negative social interactions while in the MTF and during the recovery process. The vulnerability associated with a severe injury is a risk

factor. Two veterans mentioned people who tried to take advantage of them by taking their wounded warrior benefits. At the time, they were still in the hospital and on several medications that contributed to a described mental fog. Other medical and support staff intervened, and the veterans appreciated the assistance. Two participants also described intimate partners who became physically, verbally, and/or emotionally abusive.

The interactions with medical staff varied. For example, Adam explained the change when he transitioned from one MFT to another:

The second I got there, I knew this was going to be horrible. The doctors are already, they're dicks, straight up dicks, and they were like... At [name redacted, the first MFT] they were using experimental bandages and all this sort of shit, and it was healing, I was healing, like, ridiculously fast. Then I get [name redacted, the second MFT], and the healing stops, it starts getting worse. Within the first week I had, the list of issues I had with these motherfuckers was 10 times that of the entire stay up north at [name redacted, the first MFT]. They let, they neglected to clean my wounds to the point where necrosis set in -- and luckily me and my family noticed it. Fuckin' it would take them, the shortest wait to get pain meds was, like, 50 minutes.

He spoke about the original, positive social interaction with the medical team and the shift to negative interaction and miscommunication and how this impacted his recovery. James spoke about his positive interactions: "I don't think the nurses had any issues with it [the genital injury]. I think nurses are, from what I experienced, friggin' professional angels and they don't give a shit. They're just there to do their job." He discussed the ways that this positive interaction helped him to feel a bit more comfortable and enabled him to make jokes with his medical team.

In general, the discussion of medical-professional interactions concentrated on the comorbid polytrauma. Most veterans acknowledged that the sexual functioning and genital injury were not a focus of treatment as there were other primary or life-threatening injuries, such as amputations or infections. These medical interactions, in

relationship to the GU injury specifically, are mostly described throughout this text as examples of the biopsychosocial interchange that occurs in the other themes rather than as being specific to this social domain.

Spirituality as a social support is not discussed. Only one veteran spoke about God and his religion, but this was because he was considering going back to church as an alternative to mental health therapy. However, at the time of the interview, he had not returned to church. Spirituality did not naturally surface even though there were opportunities to talk about it. Questions asked included: “How has your support network influenced your recovery?” and “Have there been any specific cultural issues that have been relevant in your recovery?” which included probes about spirituality and religion.

What others know and how they respond. All ten participants noted that most people who were close to them knew about the injury, but the veterans shared few details about the specifics of their injuries or the feelings behind them. There was also embarrassment and fear of stigma in talking to others about a GU injury. Andrew noted his hesitancy with talking about the GU injury:

How will they kind of view it I guess...I kind of, I'm afraid of that I guess. You know maybe be like, I guess, I'm just, what I mean, I guess I'm afraid of like when people go, “Oh man, that really sucks.” You know, yeah, I kind of know that I mean I just kind of don't wanna have to hear it I guess. Plus I just...I don't know kind of how to talk about it sometimes, like you know, if you were to tell somebody that, you know, what are they supposed to say back to you? You know.

Talking about the injury can be difficult because others don't know how to respond, and people often respond with sympathy, focusing on the negative and difficult, when the veterans try to focus on the positive of having served their country and still being alive.

Noah described his experience with sharing his injury story:

I've gone and done public speaking events in there and I ask, depending on the group I'm talking with, I ask, "What do you want me to talk about? How do you want me to broach this topic?" And then some of them are like...most of them are like, "Well, just say it, however you wanna say it." And pretty much every time I do that, everybody cries. Everybody wants to come up and make me feel like I need to be a baby or something and I'm like, "Why are you crying? Why are you sorry? There's nothing to be sorry about. I'm not sorry. I'm alive. I'm above ground." You know, and I thank 'em. I know where they're coming from, but I don't need to be treated with pity. I mean, but that's how people automatically default to.

There is a common thread: challenges with speaking about the injury stem from people often not knowing what to say in return and the difficulty others have with receiving the information. As Noah noted, "Our society isn't educated enough to have those conversations yet."

It is difficult to broach the conversation and for people to ask questions, and it is difficult for the veteran to raise the subject on his own. Wyatt reflected, "I had my very first conversation with my mom about sex [the other night], and the situation that I was going through with my wife. And that's because in my family we just—we didn't talk about that kind of stuff. And so even at that time, she didn't ask. She knew. She didn't ask." The difficulty with talking about sex roots back childhood and social forces.

There is a level of ambivalence with talking about the injury. A number of the participants note being asked to talk about their GU injuries for the media; however, there is some hesitancy in doing so. While the veterans desire to talk about and de-stigmatize the GU injuries, it continues to bring up feelings. Owen discussed being asked about it unexpectedly by the media and he noted, "So I had to talk about it, which I don't really tell people." He continued, "That's just kind of weird, and you basically have to admit

you got something wrong.” The GU injury is viewed in a different context than other physical injuries, such as amputation, as being “something wrong.”

The participants showed some desire to talk about the injury and recognized that it is important to talk about their experiences while also holding conflicting feelings, expressing levels of discomfort that made them not want to talk about it. Logan noted this as he mentioned the difficulty with others—particularly his social support—not understanding the GU injury and not being able to relate. He noted, “Um, that'd be something you might talk about your...talk about with your dad, maybe, but I'm not really in touch with him. I don't want to talk about it with my mom. So, I just don't want to talk about it.” He clarified, “It's different talking about it with a guy than it is with a woman.” However, he also expressed that he was having difficulty talking about it with other men, including his brother, and articulating the challenges with why it is “different.” Finding the words is difficult.

There were a few factors that helped the participants talk about the injuries. One was having a partner who is comfortable with it. Another was having sexual functioning. A third was the successful completion of IVF (having a child). Lastly, the more the injury was talked about and acknowledged, the easier it became to do so. One participant noted this as he talked about the loss of penis and testicles with others. He observed:

Oh, people get nervous. People freak out. I'm open about it now. I mean, when I initially was starting to talk about my injuries and talking to other guys about it, it was very hard for me to talk about it. I'd be like, "Yeah, and I lost, you know, stuff down there." That's how I'd talk about.

He continued, “But, um, you know, now, it's just like, this is what it is. It's very matter of fact. Um, there's nothing to be upset about. It's not...it doesn't change who I am. It's, I have to accept it and move on.” However, while it becomes easier to talk about each

time, he still struggles with finding people to talk about the emotional impact of the injury. His discussion of it remains matter-of-fact and scientific.

Military systems and culture. The individual's military identity is tied to his injury and often guides recovery. Sharing experiences and values with other military veterans helps. The military identity can be a motivating force in recovery whether it is viewed as a "mission" or "duty" to be accomplished or when its values provide a guide going forward. Finding this military motivation can take time and often requires seeking alternative systems, such as adaptive sports. The use of adaptive sports is explored in detail under identity construction, and it is worth noting here that adaptive sports return pieces of the military identity and culture to the veterans as well.

Using the recovery process as "a mission to fulfill" provides motivation to recover as James described:

Um, and then, you know, I was still, I got injured in just my first month into the deployment, so my soldiers were in Afghanistan for a 12-month deployment. I was only there for one month, so my soldiers were there for another 11 months. So for the first 11 months post-injury, I still very much felt like I had a responsibility to, uh, you know, persevere and be as successful in the recovery as I could be because I owed that to my soldiers.

He went on to say, "I felt that as a wounded soldier I had, um, you know, a responsibility to not let this destroy my life." He views the recovery as his job and obligation.

The shared experience, particularly with fellow wounded warriors, allows for more openness when talking about the injury. Andrew described his squad leader who was there when he was injured and the guilt he felt for Andrew's injury. He described seeing him during the recovery and discussing the GU injury with him, one of the few people in whom he confided. He stated that the squad leader:

kind of, like, felt real bad about it, and I just kind of let him know it wasn't his fault, kind of one of those things that happen. Let him know that I was doing well, even though, with it. And so, I kind of put his mind at ease.

Owen added, "I don't ever talk to my dad about it because he wouldn't understand. You know? It'd have to be somebody that would actually understand what the hell I'm saying."

The transition from being deployed with comrades to being injured and immediately disconnected from this group impacts both the wounded warrior and the remaining service members. Just as Andrew discussed above, reconnecting with these other service members post deployment can be helpful. One veteran described this:

You know, especially when you go from being in this tight-knit, close unit to all of a sudden you're medevacked and gone, there's not really that transition period and stuff. All of a sudden you're going from a battlefield area to a rehab facility. And that was definitely difficult to deal with. And a number of the guys I lost touch with, but it's—with social media and things like that, definitely reconnecting with a lot of guys over the years. And it's interesting talking to a number of guys. One of the guys that was in my squad, he was one of the guys working on me after I was wounded. And he helped carry—he was one of the guys helping carry the litter down the mountain, down to the medevac helicopter. And at one point while they were carrying me, I remember they—one of the guys—or I guess he tripped and fell and the litter dropped, and I hit the ground. And he, actually, always, until I was able to talk to him, he always blamed himself for my spinal cord injury because he thought that's what caused it or made it worse, or something like that. And I was able to, a number of years later, kind of clear things up. Like, "No, you—the damage was already done. You didn't cause this." That's been really good. Reconnecting with a number of guys, too, it's been good for them.

The group mentality and impact of the injury have a bidirectional effect on the wounded warrior and his comrades.

While the GU injury is a difficult one, there was also some discussion of it being "more of, like, a badge of honor" when telling others, particularly other service members, as Adam noted. Another veteran explained his experience with a bilateral orchiectomy and penile amputation:

Their minds get blown because they just can't believe that I'm as active as I am and engaged as I am and still doing, and being, a leader and being out there and doing the things that I'm doing with those injuries. And so it definitely changes the way they look at me.

He described it in a positive way. He takes pride in himself for being able to be active despite having lost his genitals.

Another issue that arose throughout the interviews was the difficulty of transitioning from MTFs to outpatient facilities to the VA or to other systems closer to home. The difficulty in accessing care creates challenges due to isolation and being required to do things independently without the help of an inpatient care team. As Owen described, "I wasn't in inpatient anymore, I think is what it was also. I'd just become an outpatient, I think within that month, and so it was different, and I had different doctors, and I couldn't go find or see the other people. I had...the contacts I had were gone." This disconnect creates potential unaddressed medical problems or complications and imposes additional stressors on trying to navigate a bureaucratic system of care.

Biopsychosocial interchange. While the biological, psychological, and social aspects are reported separately, all interact and influence one another. For example, as previously mentioned, Adam noted improved recovery when he was at one MTF where the medical staff was more innovative, professional, and friendly. He noted that his recovery took a downward turn when he moved to another MTF, where he described the medical staff as bullish and not interested in his needs, stating, "Within the first, the second I got there, I knew this was going to be horrible. The doctors are already, they're dicks, straight up dicks." He continued:

Like, this one retired Air Force colonel just started talking shit, and I'm looking over at my dad and my mom like, "I'm about to fucking literally murder somebody." Like, literally, if I wasn't so frickin' weak and helpless, frick, because

I weighed 87 pounds at one point...for being...Yeah. They literally would come up, they would come up and talk shit like, "I'm a fucking retired Air Force lieutenant colonel. You need to show me respect, and blah-blah."

The social environments of his family and the medical team interacted to influence his physical recovery and mental health. His perspective of the interaction with the medical staff influenced his mental health and vice versa. Because of the described poor medical interactions and feelings of helplessness, his physical recovery changed as he arrived at the new MTF, "The healing stops. It starts getting worse." At the new MTF, he "considered suicide a lot, frickin' insanely depressed constantly, just from those piece-of-shit staff members, and pretty much feeling completely helpless and alone." The deterioration of his physical state also impacted his mental health.

Adam noted an upward shift in his recovery after this medical team "disappeared." He discussed a new team working with him that considered his needs, such as a request for a reversal surgery of a colostomy bag which was previously denied by the Air Force lieutenant colonel in charge of his medical care. This is one way the biological, psychological, and social pieces interact to shape the recovery process. Keeping this perspective in mind is paramount to understanding the recovery process. The interaction in turn impacts the ease or difficulty veterans experience with rewriting the reproductive narrative.

Reconceiving the Reproductive Narrative

A secondary theme encompasses the process for dealing with the GU injury, or reproductive trauma. There is a consistent theme that this was difficult to fully address as it impacted many areas of their lives (i.e., intimate relationships, sexual functioning, and fertility) but could not be dealt with until there was some physical injury stability and

basic activities of daily living (ADLs) were achieved, such as being independently mobile. Yet, there is a special significance granted to the male anatomy, as one veteran describes:

I mean, it's, it's my frickin' junk...you know. I mean, I [laughs] definitely would get...if I had the choice between, like, you know, you could either lose both your legs and your dick and keep both your arms, or lose both legs and one of your arms and keep your dick, I'm like, "Goodbye left arm." You know? Fuck that.

Reconceiving the reproductive narrative is a challenging and iterative process that is impacted by various outside forces.

Putting on the backburner: Understanding the GU injury as a primary reproductive trauma. While immediate grief around the GU injury occurs, there is a sub-theme of not being able to process this particular injury because having a child or even sexual relationships is not an option during the immediate recovery. There are other needs to be addressed by the doctors before considering sexual functioning or fertility, yet they remain an important priority for these veterans. Andrew discussed “putting it on the backburner” when he first found out about the GU injury “but, yeah, I mean slowly it became more apparent” that it needed to be addressed. One veteran with a bilateral orchiectomy noted:

Um, in terms of the genital injury, I don't know. It's such a weird thing where like, fortunately, I still have my penis and I can still have sex. I just can't make a baby right now, but I don't want to be making a baby right now, but I definitely look forward to the idea of making a baby in the future.

Although sexual functioning and fertility are not immediate needs, they help with recovery. As Joe notes, “But down the road, [not addressing sexual health and fertility] it’s going to cause a lot more problems if it’s not addressed early on.”

Impact on self. The meaning of the GU injury takes varying forms for different individuals primarily because of the individuals' developmental or life stages and the location of the veteran in the recovery process. For example, one veteran explained:

I mean, initially it was kind of daunting and stuff, and it kind of—it hit my—my self-esteem a little bit, just knowing that I got injured in the groin area. But after kind of going through the processes that I did for rehabilitation and everything, you know, I realized I could still do everything sexually that I wanted to, and you know, with a little bit—you know, a process, and stuff, I could do IVF for a family.

Being able to receive treatment that addresses genital injury helps to decrease anxiety and give hope.

The GU injury alters the sense of self and impacts confidence. One veteran described how the GU injury impacts his sense of self, which subsequently bleeds into other areas of life. He noted:

And that was also the same thing with like, you know, my injuries to my genitals. Like, I was like, “No, I’ll be fine. We’ll get through this.” But in actuality, there was a lot more underlying to all of that. The actual loss of not being able to have kids has, you know, ruined my sex life, especially with, you know, my wife. My wife was, you know, a very intimate person, and then after I got hurt, like, I was just—I felt broken.

The GU injury makes him feel “broken” biologically, psychologically, and socially (intimately).

Isolation and shame. Andrew discussed feeling alone after the injury due to the gaps in resources:

There wasn't a whole lot on it, so nobody really would come out and say anything on it. Everybody was pretty honest about it, which that kind of got to me a little bit. Because sometimes they be like, “Wow, there isn't anything in there,” and so it's, like, you're kind of thinking you're the first person have to go through it, like...

A lack of options for treatment generates feelings of isolation as he has to deal with it by himself, without resource supports.

The GU injury is one that is often thought about but difficult to acknowledge and hard to discuss. One veteran noted:

I think it was just little things, like not being...you know having to kind of...you know you can't really tell people why you're always going in [to the bathroom] and sitting down. And, like, as you get better, just things like that, it always seemed like had to kind of keep an extra going. So that was the thing because it's not something you just tell people about. So if you're, like, you're doing something different, and you know people wanna ask you about it, but it kind of just always, like, felt like an elephant-in-the-room kind of thing to me.

He also discussed how he keeps the conversation about his injury and the treatment “very scientific, I guess, if you will” and avoids discussing his feelings about the injury.

There is a consistent sub-theme that this is the type of injury in which a veteran “kind of [has] to deal with it and figure out how to accept it on [his] own,” as Andrew described it. It is an isolating injury as few others understand the experience, and it is unknown unless disclosed yet often wondered about. One veteran with a penile amputation explained:

I couldn't vent. I couldn't complain up because they didn't understand it. I couldn't complain down because I'm leading them. I'm teaching them. I've got to be the example. I couldn't, you know, vent to my peers because they don't have the same injuries that I did. So I wound up finding that I'm all by myself on this mountain going, um, I just need help, like, who do I talk to?

He went on to explain that there are few supports and resources. He has to deal with and problem solve around the injury:

I need someone that can give advice or give constructive advice or, you know, because sometimes you need that and especially when it comes to an injury like that. To this date I haven't, nobody. Uh, people that are, you know, have best of intentions, but it just, it's not there.

He described looking for shared experiences but having trouble finding commonalities with others' injuries. He noted:

When we have problems, we tend to draw people that are having similar problems and go to them and talk to them about those problems because they've experienced them. Who am I supposed to go to? And so that becomes a problem because there are people who wanna help, but they don't know how to help because they are not in the exact same situation. So I think just somebody that would understand, and that's hard to find somebody.

This sentiment is true across severity of GU injury and becomes more isolating the worse the injury, especially when it impacts sexual functioning.

There is embarrassment related to talking about sexual function. Wyatt discussed going to couples therapy with his wife and the difficulty he had talking about sex and his relationship:

And [pause] and uh [pause] it kind of just brought me back to my childhood. Like, I just shelled up. Like, it was just like, "Oh no, everything's fine. Yeah, we have sex. OK!" Like, it was just like weird, you know what I mean? And so it was a problem, but—but I just think, you know, just the way I was raised, you know, overrode that. And then at the same time, like, it was just very uncomfortable to talk about. And then there was really nothing that was going to—at least I thought there was nothing that they were going to tell me that was going to change what was going on. And so, even when we'd go to therapy, you're not doing therapy. You're just going through the motions.

The discomfort with talking about sex leads back to his childhood, creating further isolation and shame.

Significance and stigma of genital injury. The GU injury is something that cannot be changed and can have a negative impact on sexual functioning and fertility. A common discussion centered on being able to have prostheses and other aids to help with mobility addresses some of the physical challenges, but there is little recourse for veterans with GU injuries. One veteran noted:

With most able-bodied people that you talk to that—oh, you'd think that—you know, the number of—if you had spinal cord injury, the number one thing you would want to get back is the ability to walk. That's actually—you know, you ask most people who have spent a lot of time in chairs, and have, depending on their level of injury and spinal cord injury, that's actually number five on the list. The number—it's kind of tied usually—sexual function is number one. If they could get something back, it would be that.

He then discussed how there are adaptive sports and aids to help with getting around which are “just fine,” but the only way for him and his wife to have a baby is through IVF due to the GU complications. Another veteran said:

And so, when she [the doctor] told me that [I probably wasn't going to be able to have children], I was just like devastated. It's like I had this master plan and, you know, one thing led the wrong way, and it just like destroyed everything. And so even to this day, like I tell everybody, I tell everyone that the biggest injury that I've had isn't losing my legs or fingers or the scars on my arms. It's the actual ability to not have kids. And so that was actually—that's actually been the biggest—my biggest obstacle since. Because there's nothing I can do that can change that. Walking in prosthetics, you have to train. You have to do this, you have to do that, in order to get better. But with—if you lose the ability to have kids, you're not getting it back.

Another participant noted a similar view, reporting, “Yeah that one, the GU, it was... [the worst injury]. No, it's above because my legs, I was able to at least learn to walk again.”

There is also a lack of preparation for a GU injury compared to the other injuries. Jack discussed his GU injury noting, “I was, I was prepared to do that [serve my country and die]. So yeah, you know, I mean, it is devastating. The truth is, I'm not gonna hide anything. This is the truth. It is devastating. It's devastating to know that you can't procreate no more.”

For many, the significance of the injury or what it will mean for the future of building a family is an unknown, and they have no control over this. One veteran noted, “It's frickin'...yeah, that's like, yeah, [the GU injury] that's definitely the worst one....Well because I like children and it's not, even though I have the important part of

my left testicle, it's still not guaranteed, you know?" Logan described the lack of control over the injury but also the lack of direction he now feels due to the genital injury, especially with dating. He noted, "It's kind of like the whole point. You know? You want to have kids and stuff." Yet another veteran described this in a different perspective when asked, "Okay. And, um, let's see. So you talk a little bit about the, uh, GU injury. Um, what would you say is the order of importance of that injury compared to your others?" He replied:

That's tough. Um, like, would I trade one for the other? Um, I don't know. I don't... I can't yet fully appreciate the magnitude of my GU injury, I suppose. To me, my injury is I can't have my own biological children...Um, and that I'm sure is a disappointment but, on the other hand, I just feel like, I mean, I don't know. Had this injury not occurred, maybe I was going to be infertile anyways. Maybe I was gonna marry a woman who's infertile.

He tries to restructure the way he thinks about this injury to decrease the importance of the injury that is causing his sterility.

The degree of the GU injury impacts how veterans rate the injury. The most important aspect involves having a functional penis. Three participants rate the GU injury as having lower significance in comparison to others. All three of those participants report having satisfying sexual relationships. Two of them also already have children (one pre- and one post-injury). The other participant is in a committed relationship, has a longer post-injury time, has a strong support system, and has an advanced degree. He is an outlier.

While the GU injury may be rated lower for some individuals, they still experience difficulty discussing the injury because of embarrassment or stigma. One veteran discussed being interviewed for an article on GU injuries but not wanting to be

identified, so he used a pseudonym. Even he, who reported to be less bothered by this injury than others, noted a level of self-consciousness in talking about it:

Um, just because, I don't know, like, on the one hand, I am inclined to view my GU injury just like, look. It's just a physical injury, you know? It was just like, my legs are gone. So are my testicles, and that's the way it should be. But, for whatever reason, as you're very aware in our society, like, fertility and genitals in general are just a sensitive subject.

This illustrates how on some level the injury is significant for him, even if it is rated lower than his leg amputations.

Overall, the GU injury is a unique injury that plays an important role on the self and in relationships. As Andrew described:

I don't think people realize...Um, personally, one thing I hate is when people are like, "Oh, it doesn't matter. You know, that's not gonna affect you." And the thing is, if you hear from somebody and they're married to somebody that's normal or they're normal themselves, like, dating somebody normal, it's like you know you're...it's just words, you know. Like, I mean, it's not lost on guys on that. And I think that's one thing like...because it is a...it is...because when people say well it doesn't matter, if they're not put you at ease, I felt like they're saying, "Well, you know, your injury doesn't really matter." But it's like there's more to it than that. It's like...you know, and I know people are trying to write it off, so I would feel better, but I think somehow there's gotta be a bridge to try to kind of let them know that it is, it is, that people understand how heavy of an injury really is.

Andrew's reflection illustrates some of the disconnect he feels about the experience with GU injury and its impact on linked lives. Another veteran added, "Um, and then the other thing is, is then it...not having your penis or testicles, as a man, because of our society, that weighs on you heavily. Mentally, it fucks with you every day."

Acceptance. Although GU injuries have a significant impact and consequence in the veterans' lives, there is also an overarching sub-theme of acceptance. Andrew noted, "But as I've gotten older and just got through everything and got, you know, more—like I

said—like learn to walk again, I got all that independence back. That [GU injury] hasn't bothered me as much as it once did.”

One veteran explained his experience of acceptance this way:

And they, they ask me, you know, "Can, can you have kids? Can you have sex? Can you, you know, do all that stuff?" And I said, "No." I said, "No." And, and I told them, you know, "Hey, you know, it's, it's, it's my service, you know. It's, it's what I chose to do." I told them...I gave them...I gave them the impression I have to live with it, no matter what you do in your life. Even in, in your life, you have to live with the decisions you make.

Ryan noted the shift in his thinking and the importance of talking about the GU injury:

But as soon as I was more comfortable with it, I was like, okay, yeah. It's not a big deal. It happens. There's other people that probably have the same thing right now and are going through a rough time about it, and it probably would be good if I could talk about it. So that's kind of how I try to look at it is, yeah, not being selfish and more helping out other people with it.

Accepting the GU injury and talking about it can help the veteran and others.

The veterans perceive that there is little that can be done for a GU injury but accept it. Ryan described his impression of the little that can be done about the genital injury and the process of family building, noting, “So, because I was really—I was already pretty accepting of it. Like, there's not much else you can do except accept it, so I kind of took it as it is, and went from there.”

Sexual health and functioning as different and new. Sexual health is a primary issue for veterans during recovery, and getting answers and guidance instead of dealing with unknowns can help with the recovery. As one veteran noted with his first sexual experience, “I mean, knowing, knowing that that was all good to go again was just phenomenal.”

Testosterone challenges. The impact of testosterone deficiency and management related to the GU injury is a primary sub-theme, too. Several veterans spoke about how

testosterone administration is often not appropriately addressed, whether they began treatment well after stabilization occurred or simply did not discuss the impact of testosterone on fertility or mental and physical health. There are ongoing challenges with getting access to treatment and being able to utilize the form of administration that works best (gel, pellets, injections, or patches).

Whether it was a lack of preparation for the increase in GU injuries or viewed as non-life threatening and—therefore—not a priority, the commonality is that the provision of testosterone is often neglected. Joe described moving out of the military and veteran services due to barriers, noting, “When I initially went to the outside urologist, that’s one thing they also did, too, was measure my testosterone level. That the VA had never done. And it was very, very, very low.” However, testosterone also “suppresses sperm production,” which can lead to further fertility complications. Little was discussed about its impact on fertility, and the three veterans who spoke about this were the only three who had been through IVF.

Various veterans had difficulties with different forms of testosterone, which needed to be tested. Owen noted, “My body didn’t accept the gels. Um, I had an absorption problem. I actually...testosterone actually dropped when I took it.” Wyatt commented:

I think we went from—I started with the injection. Then we went to, like, patches, and then from patches—I swim a lot, so I couldn't do patches. And then we went to gels. And then gels felt just weird because if I put it on and the dog played with me or my wife wanted to touch me, like it was—it was just something that wasn't, just didn't feel organic. And then, so eventually we moved to the shots, and the shots seemed to work.

Self-advocacy to have testosterone levels addressed is central.

Often there are only limited conversations to help with understanding of testosterone. One veteran explained:

I was focused on: "Well, maybe I just don't have as much muscle as I used to, or my libido isn't as high as it used to be." But having the right hormone balance affects your personality and can contribute to depression which, looking back on it, as we discussed, I think I was depressed at the time. Um, so yeah, like there was no in-depth discussion of the implications of the injury, and there really should have been. It was very, very surface level. It was like, "You lost your testicles. Here's a bottle of gel. Put some on every day. Good luck."

The education about and understanding of the side effects of low testosterone help a veteran to be aware of when readjustments and doctor's appointments might be needed.

James elaborated about testosterone:

When I first realized I had this problem, I said, "We're doing monthly checks." And the endocrinologist was like, "That's totally overkill, but okay." And I was like, "No dude. I think I just broke up with a girl because my level is way too low. This is, this is important." So, I just managed it on my own...What I've learned now is that I can. I'm experienced enough where if I start noticing a drop in my libido or I notice that I'm not exercising much anymore, instead of just being like, "Oh, I must be tired," all the time, now my response is, "Oh, something's wrong with my testosterone." I'm just aware enough now. I know what right looks like. So, to answer your question, now I'd be comfortable getting my testosterone checked once every six months, but that's because I'm just constantly doing my own non-scientific check. Um, I get my blood drawn once every six months, but I try to pause every couple weeks and be like, "Hey, do I feel the way I wanna feel?" If the answer is no, that means there's a problem: my testosterone.

Low testosterone can cause low libido, erectile dysfunction, fatigue, decreased ability to focus, memory issues, and mood changes such as dysthymia, depression, and irritability. The veterans described experiencing all of these symptoms. After Owen achieved the right doses and form of testosterone, he noted, "My memory got better. Everything globally got better with increased testosterone. Um, my mood got better. I was less cranky. Everything was way better." Logan added, "It can affect your mood. Physically, it can affect the way your muscle develops and recovery." Ryan said:

Yeah. So when I don't take it, I get really, really tired all day. Kind of just really groggy and—I mean, I guess the only other way to explain it would be kind of like a hangover would feel. Like, I don't have the headache, but I have, like, a total mental fog, and I'm just kind of not able to really do anything, really function. And then in addition to that, kind of just energy levels are really down. Focus is really down. And then with it, I can tell that my focus is a little bit higher. And then working out, like, I can get decent muscle tone if I take it consistently versus when I don't take it consistently. And then just all-around energy levels are higher, so I'm able to participate in the day, you know, fully... Without it, I'm pretty wiped by five or six at night, just completely wiped out.

Testosterone treatment needs to be individualized. James described what he learned about this by doing self-advocacy:

I've got to do all this research on my own. He didn't explain that, you know, we measure testosterone essentially at the 700-point scale... If you're at this level, you're good to go. At below this level, you're bad. It's different for every single guy, every single guy you know. A hundred 20-year-old guys could have a hundred different testosterone levels, so he never explained that their scale is an average.

Despite the prevalence of these individualize testosterone levels, there are generalized measures in place that raise significant barriers to accessing testosterone. Joe reported:

But now going forward, we've checked my testosterone levels again, and my current testosterone levels are like right on the edge, just over the lowest point on the scale. And they're like, "Oh well, it's still above that, so you're good." I'm still low but trying to get them to—they don't really, for some reason, want to put me back on testosterone injections. That's a fight for another day with them so [laugh].

These veterans have to make choices in what to advocate for. However, Joe noted:

[My wife] definitely noticed a difference just in mood and things like that. It helped immensely with that, and sexual drive, things like that, definitely were better than when you're not on it. It's one of those—yeah, given a choice, I'd like to go back on them, because of the benefits, even though the injection really sucks [laugh]. But the benefits definitely outweigh the cons.

While testosterone is important, it is one of many needs, and accessing doctors and facilities that will provide needed testosterone requires persistence, time, and— frequently— going outside of military care and the VHA. This can be hard when you are experiencing the side effects of low testosterone. Logan describes:

So I kind of just let myself get even more depressed, and I was taking testosterone for a while, and VA wouldn't give it to me anymore because they said it was a controlled substance. So I went to other places to get it, but the place I went to was in [city name redacted, major city near him], and that's a five-hour round-trip, once a week. So I didn't feel like going anymore. So my testosterone levels have been up and down and all over the place.

He noted how this has impacted his functioning, stating “Hormonally, I'm thrown off.”

Exploration, functioning, and adaptation. With a GU injury and significant polytrauma, sexual functioning is a top concern for veterans shortly after injury.

However, there is little known or understood about it, even with the rise in GU injuries caused by this war. It is complicated by the fact that each injury is individual and unique. Sexual relationships will not be the same as they were pre-injury which makes GU injury hard for veterans to understand and accept.

Joe talked about the difficulty and importance of addressing sexual functioning as there was anxiety with not knowing about it. He stated, “And I wish that more places would put more emphasis on it because, you know, it’s the big three of sexual function, bladder, [and] bowel that were affected. Those are big things, especially psychologically, for someone who’s fairly young at the time, too.” He also talked about being young and desiring sex but having to navigate his sexual functioning in a new way:

I’m [age redacted, 21-29] at the time I got out. What are the options available, and “Okay, well yep, there’s Viagra. Try that, and if it doesn’t work, get back to us and let us know.” And then okay, well then, you know, “How do I use it? What do I do?” and all that. And it’s not really addressed. And when that doesn't work, what are the other options? And they don’t deal with that until that point.

Joe went on to discuss how, if the medications did not work, he “was then put on a nine-month waiting list to get in to see a urologist.” Little focus is placed on sexual function.

There is difficulty broaching the topic and talking about sexual function with medical personnel. Wyatt described how even when the questions are asked about sexual functioning, it is difficult to discuss:

So that was part of the problem, too, is that every time when I saw Dr. [name redacted], he was like—his things would be—“Are you eating, pooping, peeing, sleeping, and having sex all right?” And so, since it was a bam-bam-bam-bam “Yes,” that was the end of the conversation. That was the easiest way for me to avoid that conversation, was once he got to the—he’d name four. I was saying, “Yes, yes, yes, yes.” Boom! He asked me that question. “Yes.” It’s out of the picture. I don’t have to answer questions about sex anymore.

Talking about sex and dysfunction brings up psychological deficiencies which exacerbate the overall injury.

While there are shifts within the military medical system to address talking about sex, addressing sexual function presents challenges, as Noah described:

You run into that whole re-education for a couple if they stayed together. Well, well, this is the new norm, and so it's just not a topic that we here in America talk about. So it's one of those taboo things that you don't discuss, you know, or talk to especially with the damn lights on, um, and you don't talk with anybody unless you're getting ready to have intercourse. Um, and so that was one of those hard topics to have with people in public, you know.

Discussion is difficult with medical staff, intimate partners, and others.

When there is sexual dysfunction, it can have a diffused effect on recovery: the injury can cause sexual dysfunction, and the sexual dysfunction can cause negative psychological implications that also impact intimate relationships. One veteran discussed an example of this psychological interaction, noting the difficulties with accepting the new sexual relationship while acknowledging that there are some positive aspects:

I couldn't even have sex with my wife. [Exhale] But I don't know if it's just the injury itself, or if it was just, like, a lot of things. You know what I mean? The depression, the injuries, the no legs. Not being able to do it the way I used to do it. That was a big issue when I—when we first started having sex. It would frustrate me that I would try to do the things that I used to do and I couldn't do anymore. And so, but at the same token, what was exciting was that we had to try to like figure out new ways to do things, so that was pretty cool. But some of me, part of me, always wanted to do it the way I was before. You know?

Even after working with his doctor and utilizing medication to help with sexual functioning, he noted:

It was—I mean it was—it was selfishly satisfying because I was able to climax. But at the same time, you know, my wife wasn't. And so there was a lot of like, um, guilt. There was a lot of like, "I hate myself. I can't even do this for my wife." Not only can I not get her pregnant, which is very big for her, I can't even, you know, please her.

One veteran noted that the challenge of facing sexual dysfunction immediately after the injury made coping with the injury even more difficult. He noted, "I mean, for the first bit in recovery, between all the pain meds and depression and this and that, I wasn't getting hard at all, which was making it—everything worse and more depressing." Another veteran described a similar experience:

And then on top of that, you know, the depression, the drugs, the like prescription drugs, the trauma, all that kind of stuff, hindered performance. And so, um, I've always been very performance-based. You know, that's how you get promoted. If you perform well, you continue, you want—it's addictive. You want to continue to perform well. And then I remember just, you know, having sex and the first—the first couple times after injury, it was expected—like I didn't—it just—it—I—I was like, "It's going to hap...like that happens. I haven't had sex in forever. I just got blown up, blah blah blah. It happens." And then eventually a little bit of the stuff—a little bit of the performance got better. And then it just kind of, like, went away. And so then that always, like, was in the back of my mind.

Sexual functioning and fertility can impact the psychological recovery and sense of self.

Most of sexual functioning recovery is achieved through self-discovery and self-advocacy. One veteran noted his personal work to regain sexual functioning: "I still have

my penis with me. I still have...that. So, uh, it's very vague. The life condition of it is, is... I'm still trying to recuperate it” to regain sexual pleasure. He talked about this in a hopeful manner but noted that little has been recommended medically related to reconstruction.

The self-discovery began for one veteran shortly after being injured when he was in bed with a woman he was dating:

I hadn't been around women and their smells and all this stuff, and now I'm back here, and I'm seeing America versus being in Afghanistan, and we're sleeping in the same bed together. Of course, we're not doing that but, you know, it's on your mind. I start having wet dreams. I hadn't had a wet dream in freaking forever, and I'm thinking I'm ripping something because it's a sensation I hadn't felt in ages, and I freak out. I go to my urologist, Dr. [name redacted] and I'm like, "Hey, something's wrong, like, I think I destroyed something down there. Like, I'm waking up like every night and this is happening." He goes, "Oh, you're having wet dreams." And I'm like, "Huh?" I said, "Doc, I'm [age redacted] old. I don't have wet dreams anymore. And he goes and he explained why: if you haven't had intercourse in a while, you're sleeping next to her or, you know—hello—you know, it's gonna happen.

He is thinking about penetrative intercourse in this description and, because of this experience, his doctor encourages him to experiment. He continued:

Obviously, I can't insert anything in, and obviously the typical, what we call intercourse, I can't do that, but I can still stimulate a female enough that they can ejaculate, uh, and that I can actually ejaculate, which scared the crap out of me the first time I did it. Again, I thought, "Oh crap! I just broke something. I just gutted myself." Something's wrong, um, because it's a different sensation because I don't have testicles.

While this was a new and different experience, it is a positive one that enables him to continue to reframe sexual interactions in a way that is more helpful for his psychological recovery.

Although the experience of having sex post-injury is daunting because of the unknowns, being able to engage in sex and intimacy is a positive and important part of

the recovery. Knowing that sex, even in different forms, can work is helpful. One veteran described his first sexual experience post-injury: “It was like losing my virginity but 1,000 times better. And it was frickin' crazy intense when a frickin' organism came.”

Sex requires adaption and change to a concept broader than vaginal intercourse or penetration. This redefinition can help with acceptance around the GU and overall injuries. One veteran discussed this: “Even though I couldn't use my penis for sexual activity, you know, you can still make love, either way, you know.”

One veteran talked hopefully about being able to regain sexual functioning with a penile transplant. He noted, “With the surgery, with the doctors, I think I could get back to normal again, according to what they say. They're pretty confident, so I am, too.” However, he added, “You know, I mean, there is a desire for it [a penile transplant]. But at the current, if I really had no other choice how I had to live my life, I think I would be fine. I could do it. I would be pretty much happy, I'd say.” Adaptations include medical intervention, such as penile implants, and changing the way one thinks about sex to include a more expansive definition.

Satisfaction and just different. Polytrauma has implications for sexual function and changes in the bedroom. One veteran said:

Like if I had to use a wheelchair for the rest of my life and never walk on prosthetics, but I could father my own children, I don't think I would take that trade. Um, and in terms of day-to-day, what annoys me more, GU injury or leg injury? Leg injury by far, and even when it comes to, like, sexuality, when I'm in bed with someone, I'm not thinking, “Man, I wish I had balls right now,” but when I am in bed with someone, when I am thinking, "I wish I had two knees I could lean on right now." Like, there's just kinds of sex that I, I don't get to enjoy anymore, and kinds of sex that I can't offer to my partner anymore, um, and that is frustrating.

Wyatt added, “You know, like, I can’t pick up my wife and have sex with her like before, or certain positions.” He noted how the injury has slowed him down so that having sex takes much more effort and thought. By the nature of the polytrauma, sex subsequently and inherently becomes less spontaneous.

While there are changes in the sexual relationships, the changes can be new and different but still positive, as James noted, “But [the injury] has had an impact [on sexual functioning] for sure. It doesn't mean that it's worse. It just means that it's different.” Joe described the sexual functioning changes, saying he was “just trying to figure out things and what being intimate was going to be like going forward. And it kind of eventually got back to what it was before injury, I guess, just in a different way.”

One veteran, a penile amputation, explained, “I’ve had to get better doing other things, um, to please women, um, and then I had to learn how to, um, stimulate myself enough to teach a woman on how to please me, um, because that's completely different now.” He described sex with a partner: “We had sex quite a bit, but it wasn't the typical sex. It was different. Um, it was very satisfying, obviously, for both parties.” He continued to discuss sexual function, answering this question from the interviewing researcher: “On a scale of 1 to 10, where was your sexual functioning, pre-injury, with 1 being terrible and 10 being perfect?”:

Who's perfect? Anybody who says they're perfect is lying. I, I would say that I was...I was very sexually active. Um, and, oh yeah, this is the best way to answer. I was very limited at what I was good at [pre-injury]. After my injury, it broadened what I was good at. Does that make sense?

He did not give a score but rather used words to explore his cognitive restructuring about sex. The GU injury allows for exploration and expanding of meaning of sexual relations and satisfaction.

Overall, and even with the acknowledgement of certain challenges or dysfunction, there is an optimism that was conveyed about regaining sexual functioning. This allows for hope and promise that give meaning to the future.

Impact on intimate relationship. The exploration of dating and intimate relationships is an important part of moving forward. However, the initial exploration occurs at a time when the veteran is in a vulnerable state, being on many medications and physically dependent. This creates the potential for both positive and negative experiences in an intimate-partner relationship.

The GU injury brings consequences in dating, particularly regarding how, what, and when to tell a partner or person about the GU injury and meaning. Navigating the fears, unknowns, and dynamic changes results in much new travail.

Dating changes and difficulties. Dating post-injury is a new and different experience. Owen described this:

It's just a completely different dynamic because the leg thing draws attention. Everybody wants to talk to me, but that doesn't mean they want to do something else. So they want to come and talk to me. It doesn't mean they're interested. And I just haven't been able to figure that shit out, uh, either.

There is a shift in navigating what a person's intentions are, and there are also times when a potential partner may take advantage of the veteran in a vulnerable state, perhaps by trying to take his wounded warrior benefits. Owen noted needing to watch out because "they will come after you just for the benefits. They'll... They'll hunt for benefits. Veteran benefits."

Becoming comfortable with the injury as a whole helps the veteran with dating. Ryan explained:

So, like, it was just really early on that I was just really good about, you know, dating women and stuff like that. I just got really comfortable with being fine with the injury and stuff. And then the genital injury just kind of carried up with that. I didn't really see it as a separate piece.

Andrew also described this feeling: "When I was younger I thought maybe I couldn't, relationships won't happen for me." He noted a shift in his comfort with his injury that has given him more hope that a relationship and marriage could be a possibility.

There are many changes that must be addressed in dating that can be uncomfortable. Joe discussed the change:

Definitely a mixed bag, that's for sure. Dating, especially for someone in a wheelchair is—I mean dating is hard enough as it is. You've got that layer of things. It really gets interesting. Where it's—it was always hard for me to meet people and stuff, because of any reservations I had with the chair, myself, or any self-esteem issues or anything like that, as far as confidence goes. I'd usually just like—usually chat online and stuff like that and meet some people that way or through mutual friends or something like that. And it was very similar almost every time, where it was just kind of the same kind of—you know, kind of what you'd follow, as far as you could tell when—there was always that awkward conversation comes up because somebody doesn't really know the extent of injuries. And being in your twenties: "Okay, well how much sexual health is affected?" And you know: "What's still possible? What's not possible?" And kind of every time—it never got any easier than the first initial one. And you—like, I'd get a lot of women that were definitely standoffish a little bit after you try to explain things. And others, you know, some extra steps need to be taken, and it's just different. And not everyone—you know, I don't really blame people too much. Not everyone can deal with such things. And it is different. And it can be difficult to deal with. And it was—dating was definitely difficult, and filled with a number of awkward conversations that you had to have early on. Because one of those—I don't want to waste somebody's time, and I don't want to get into something and then all of a sudden—"Oh, well I can't do this"—and then you've got to deal with that. Which if any connection has been made or anything, then all of a sudden that gets thrown into the mix, and then, "Oh, I don't want—I can't deal with this," which happened quite a bit. But you try to minimize that by being honest and open early on, even though it would be fairly awkward.

The GU injury is a significant one that needs to be addressed at some point with an intimate partner.

One veteran noted that the worry for him has to do more with his leg amputations than the GU injury. He uses the leg amputation as a segue to the GU injury:

I mean, what I have to bring up when I date women is that I don't have any legs so like once that hurdle gets cleared, uh, I feel like that in itself is a hurdle. Like, if I can start a relationship with a woman that is okay with me not having legs, she is probably, you know, more than 50% odds going to be okay with my GU injury. Um, I know they're not directly the same but, but to me the...the filter that if a girl wants to go on a date, on a date with me knowing that I don't have any legs, like, to me, that filters out a certain kind of person.

The overall injury acceptance is somewhat of a litmus test for dating and reception of the GU injury.

Andrew too described that anxiety about needing to self-disclose the injury to a potential partner:

It's like you know this is a huge injury. Like, I didn't, you know...you can't be honest like that too, and I think this...and I know, like, they mean well by it, but you know it's just, it's hard to put into words. It's really a...it's an injury that really messes with your head a lot, you know, and I mean there's just...I mean in all the years the...years I've been hurt, I don't think it's ever gotten...it's gotten easier to deal with but it's still always kind of pokes at you, if you will. You're always gonna be nervous about, like, when you have to tell someone about it.

The injury's being described as "hard to put into words" makes it even more challenging to communicate it to a potential partner.

Noah described trying out different ways of talking about the injury in an intimate relationship:

Um, and then after that, I just...it was hard for me to...I'm a very confident individual. I can talk to anybody in any situation. Um, when it came to women, it was difficult. I—it became a challenge. It was obviously, I was, you know, I'm a male. I have a sex drive, you know, wants, desires—that happens. But it became an unknown of how do I breach the subject with these women? Do I just tell them upfront, or do I just hide it and then wait until we get into a sexual situation and then go, "Oh, by the way..."? And so I tried both, and both ways, I had a lot of women that was like pissed, you know, like, "You waited all this time, and then now you're telling me?"

Ambivalence toward dating. Negative experiences with dating and stressors related to having a GU injury can cause a shift in energy to something other than dating or ambivalence toward dating. Andrew explained:

There was another person that came in as an acquaintance from there that time that kind of took advantage of me for a while. But other than that, like, after those kind...that incident, I kind of swore off relationships for a while 'til I was kind of getting myself right and, like, fixing my leg issues and anxiety and that.

Joe described difficulty with dating and the injury, noting, "When's this injury not going to be this huge cloud following me? And yeah, it was definitely difficult a number of times, and it would be hard to not let that kind of influence you in a negative light."

Noah noted a change in focus for him from dating to being a parent:

I'm not...I don't...I'm single. I don't date anybody. I just, yeah, it's just...I don't know. My head's not there. I don't...it's not fun for me anymore. I'm too old for that, I guess, is how I look at it. So I really enjoy being a father and anything I can do to be a father. I enjoy that in my downtime even so.

Dating and relationships tend to be a priority, but a GU injury can lead to a shift in thinking and energy. Owen, too, discussed a similar experience of not doing much dating post-injury and spending time with his children instead:

Not really much [dating]. I just [inaudible 00:16:02] wasn't really all that interested. I've started going out and just kind of gradually exposing yourself to just people, because I never really... Well, I didn't meet... All I did was I, I went to work and I went home. Occasionally I'd go out with the guys. I would maybe do that once a month, you know, uh, go out somewhere and, and drink at night. Other than that, all I did was come home. I did stuff with my kids, and that's it.

While there is a shift in attitude and some ambivalence about dating, this does not mean that the veteran does not desire a relationship or long-term partner as Noah notes:

I have to convince myself that I'm fine by myself which is hard because the one thing I truly, really, really want is that relationship. I want to be able to come home to somebody. I want to be able to have a life together with somebody that I can share, you know, life with, you know, the experiences with, but I, I turn that

off and just focus on being a dad and focus on helping others, and that's all I do now.

The fears and the unknowns of dating can cause a veteran with GU injury to vacillate between pursuing his desire for a relationship and simply putting his energies into other, more certain areas of recovery.

Fears and unknowns. Bringing up and knowing when to tell a partner about any sexual dysfunction or infertility can be difficult and anxiety-provoking. Andrew noted:

I think at first [the GU injury] did knock out a lot of confidence out of me. Um, I kind of didn't know how you approach somebody or still this day it kind of makes me nervous about relationships. Just like, when do you tell somebody? How do you...you know, you know, and plus you don't know how they're gonna take it. So it's one of those unknowns that I guess kind of gets to you, but at the same time it's not something I've had to worry about yet. So I kind of just leave it at that.

Andrew has not yet had a conversation with a potential partner about his GU injury.

Noah described “actively trying not to be in a relationship” as he is unsure how to broach the topic of his GU injury:

Yeah, because I don't know how to. I don't know what the answer is. I still don't know what the answer is. Um, yeah, I still have women that are attracted to me that are interested and show interest, but I know how it always ends up, so I just don't even broach the topic. I don't wanna open myself up to it again because of my track record, of everything that's happened in the past. It's like, “Well, why?” It's just gonna wind up in a failure already, you know. I mean, so I mean, you know, I'm sure there's someone out there. I just haven't found them.

While there are fears, hope still does seem to persist.

There is fear or even expectation that a relationship will end—or never begin—because of the GU injury. Logan said, “I don't think I can have kids. That's kind of one of the goals in the relationship. So I sort of just stick to myself.” Andrew stated, “I think the biggest ones is always fear that they wouldn't be able to handle and they'd walk away.”

Jack discussed a relationship ending: “Maybe she wanted a man that can give her

children.” He went on to describe, “the real truth, the politically incorrect truth, the reality is, who's gonna be with a cripple? Who's gonna really be with a cripple? I accept that. I really do accept that. I have to accept it. No doubt about it.”

Looking for positive intimacy. While dating creates challenges, there are many positive stories of dating post-injury. The notion of unconditional love, unrelated to sexual organs, sexual function, or fertility, has the ability to present itself in a new way.

One participant described an experience and talked about having a penile transplant:

I had finally met one girl, and her and I actually had gotten engaged. Um, there was other complications to our relationship which is why we didn't get married, but she was the only woman that I had ever been with that I told her. I said, "You know, I'm really nervous about, you know," because I had just started the [name redacted, medical facility] whole trial [related to the penile transplant]. And I said, "I'm nervous because it's just another surgery. I'm not guaranteed I'm gonna be able to use it for intercourse. You know, I may only be able to pee and that's it." And she was the only person that ever sat me down and was like, "Do it or don't do it. I support you no matter what." She goes, "I love you because of you. I don't love you because of what you have down between your legs." Only woman I'd ever heard ever tell me that.

There is a search for finding mutual respect and unconditional love in a relationship.

Owen discussed dating a woman and her comfort with the injury: “The girl I'm seeing right now, the legs don't really... It's not a big deal for her at all, um, and, um, she seems to be genuinely attracted to me.” Wyatt described a similar incident:

But I've never, I've never, I've never heard [my wife] say something like, “Your legs are sexy” or “I love your scars” or something like that. And so the other night my brother had a girl over, and she had a friend over. And the girl right off the bat immediately was like, “Oh my god, can I check out your scars?” And I'm like, I was like, kind of like taken aback. I was like, “What?” She was like, “Yeah, can I look at your scars? I love scars.” And so she's touching my scars, and I'm like almost to the point where, like, I'm freaked out because I'm like, that's never been—my wife doesn't even do that.

There is a direct acknowledgement and engagement with the injury and scars. This experience is a positive interaction that contributes to building confidence in the injury and self. The experience can be normalizing for a veteran.

Dynamic changes. Owen described the change with his wife after he was injured:

We had... We had our issues, but nothing like, nothing bad. Um, and um, it kinda... like, actually with the, with the, with the decline of not having sex, it's just everything just got more and more distant. You know, I guess our, just our relationship was really, uh, physically based, and I just didn't know it.

Owen continued, explaining how his relationship with his wife significantly changed after the injury: "I guess, apparently, I disgusted her after my injury." His wife never touched his scars or his legs post-injury. This type of relationship and changed dynamic can place additional stress on the GU patient's recovery.

Wyatt discussed these changes as well: "But then I get hurt, and now my wife becomes my immediate provider. And so she's no longer—I don't—no longer see her in the light of as my wife. I see her as someone who takes care of me. And so the intimate setting can kind of take a backseat." Not addressing the intimate relationship separately from the caretaker role creates challenges, too.

Ryan discussed the dynamic changes of his wife now being his caregiver and mentioned utilizing additional support and resources through counseling to manage them:

Just because, um, since she's my caregiver, that kind of—it changes our dynamic a little bit. So we're still a married couple, but by technicality, like, I'm, you know, quote unquote, "her boss" or whatever, because she's my caregiver at the same time. So, we had to go to counseling so that I could figure out ways and strategies, that, you know, bring stuff up that I need for, you know, my injury and all that fun stuff, in a way that doesn't, you know, demean her or make her feel like she's not doing enough. And not to, you know, mess with our marriage too much or anything like that.

Relationships, even newly established relationships, post-injury bring about different dynamics and an inherent need for dependence upon and help from others.

Sex and procreation. In an intimate relationship, two things are often important: sex and procreation. When one or both of these things are taken away, it leads to challenges and redefining relationships. Ryan said:

But the genital injury itself, it's still really difficult just because it decreases your ability to have a family, if you want to have a family. And then for certain guys—you know, I know a few guys that have really bad ones, where they don't even have anything there anymore and stuff. So, I can't imagine that kind of thing going on. But then there's other guys where they need, you know, constant help to have, you know, any kind of sex or anything like that. And so that part's gotta be pretty difficult because it's hard to have anyone, you know, in a relationship or anything like that, if you can't do, you know, one of those things that they want to do, which is, you know, have family or have sex or whatever.

One purpose of sex can be for procreation and, when one has infertility or sterility, sex can lose some of its meaning and importance. One veteran described the cyclical interaction that the infertility has on his relationship and sex life:

So for me growing up, sex was always about procreation. Right? And so, um, I might [crying], I might cry through this part because it's the hardest [tearfully]. And so when I, when I got hurt and they told me I couldn't have kids, it was just, it felt like either A) there was karma, or there was something that was like, that God took that away from me. And so I was like [tearfully] devastated. And then when the problems started happening with my wife wanting to have sex, like it [pause] there was almost like a "Why?" It was like, "Why am I going to have sex?" Like, pshh. And then—so then I—so then eventually, you know, like, that led to masturbation. And then I think that also triggered poor performance. Because now, like, you know, I'm not performing with my wife but I can go in the bathroom and masturbate and be done and not have to worry about the guilt of not pleasing someone else or, you know, all those things. And so that could have compounded it, not wanting to have sex with my wife either.

Sex tied into procreation and fertility loses some meaning and enjoyment.

Secondary reproductive trauma: Infertility and sterility. The experience begins with overall injury that includes polytrauma. The veteran then begins the recovery

and re-learning ADLs. While sexual functioning is important, it is something that is narrowly addressed, often after some time elapses and even though the veteran may think about it from the moment the injury occurs. As an often tertiary experience, because it can take a while for a veteran to be ready to expand his family, infertility eventually becomes an issue (with the overall injury being primary and the GU being secondary).

James described these feelings about becoming infertile:

So that's, you know, in terms of that injury, I feel like it's sort of delayed. Um, like the repercussions of that particular injury don't affect me yet, um, but will in the future. Um, but the good news about that is that I've had, you know, [several] years to kind of come to grips with it and wrap my mind around it.

One veteran noted the injury's significance shift from being about the actual GU injury to encompassing the infertility:

Um, see, I'm not really sure because, I mean, not being able to be, like, sexual intercourse can't do that with the loss of my penis. But I also couldn't have kids but...so, I mean, it's one of those injuries that, I mean, I know...but at the same time with this surgery or in the doctors, you know, I'll be normal in that aspect again. However, I have thought, like, more nowadays. Back then when it first happened I thought...you know, being younger might have been the penis. Now I think it might be more the not being able to have kids because now I'm a little older now. So that could, I think, be the one, I think, where in all reality, I think that's one that would impact it more nowadays.

The injury is multi-faceted, having impact in distinctive ways during various developmental phases. It can negatively affect self-esteem and identity, sexual functioning, intimate relationships, and family building.

Understanding of fertility. Because fertility is not a priority at the time of GU injury, discussing and processing its implications is a challenge. Thus, questions are not asked to clarify, and resources for the future are unknown. One veteran described being told of his likely sterility this way: "I went and saw a, uh, urologist, a Colonel in the Army, when I was still at [name redacted, the MTF], and he told me I probably wouldn't

be able to have kids. So I started crying again. And that's basically all I ever heard about it.” He continued, “I didn't really ask too much beyond that. So they probably could have helped more, but I didn't really like them.”

There is an overall lack of understanding of where individual fertility stands, unless they have already gone through fertility treatment or have a bilateral orchiectomy. There is also an inconsistent understanding of how different medications, and particularly testosterone supplements, can decrease sperm production. Having an understanding of fertility and options is favorable, but fertility may not be known until fertility treatment starts. One veteran explained:

I didn't know how much it impacted until [name redacted, wife] and I actually, like, looked into IVF and started storing my sperm. Initially, when I was going through urology and stuff, we had—or yeah, so we didn't know like the degree of my fertility or anything like that. But we did understand that, like, the more testosterone I took and the longer I had testosterone patches, you know, the less fertile my sperm will be and the more that they will just die off. So we understood that part. But once we started actually, like, storing the sperm, you know, I got tested to see, like, what percentage would be viable.

Understanding the implications an injury or treatment has on fertility is important for the future and should be explored with the service member.

Fertility preservation and genetics. The primary sub-theme that arose is the lack of preparation for fertility impairment as a result of an injury. While death and amputations are considered to be a risk of war by veterans, there is little awareness around infertility. Andrew noted, “I never even really thought of that like [needing to bank sperm]. That never crossed my mind going over there. Even with all the explosions that people lose arms, legs, but you never think that would happen just because it's talked up you know.” Ryan too noted:

I think the biggest thing is not really—I didn't really contemplate that, like, "Okay, my junk could get injured." And, um, so obviously, like, with the job that we do as a [inaudible 0:37:05] and stuff like that, or any kind of combat MOS, I understood, like, I could get injured or blown up or whatever. I didn't really contemplate the groin injury.

Wyatt is the only participant who had contemplated the importance of banking sperm before deployment. He banked sperm under a previous deployment but ended up getting rid of the sperm because he did not want to pay for storage and had ended his relationship with the person he was dating at the time. Wyatt explained:

I actually thought I was going to get hurt in [the prior deployment] because it was really, really, really, really bad in Afghanistan. And I actually went—so the only reason—what changed—what changed me from banking sperm from this deployment and last deployment is that when I went out in [the prior deployment] and I banked sperm, I went out as a combat replacement. So someone already had died.

He went on to note, "So when you're going into your deployment, the one that I get hurt on, obviously there's still dangers out there, but it wasn't like, 'Oh, I'm going to die out here.'" Yet again, the focus is on death and not being injured. Because it had been there in the past, the lack of preparation for this deployment made the injury more difficult to understand. In order to get service members to consider their fertility, this needs to be regularly discussed prior to deployment so they can influence each other to act.

The consideration of genetics and fertility perseveration has significance in the future. Noah talked about his feelings around the use of donor sperm:

I feel weird if I were to be with a woman and try and do a reproductive way without my seed. To me, it wouldn't be my kid. I know that I would accept it and all that, but in some way, shape, or form, I would still know it's not my kid. Whereas, if I was using my sperm in the whole process, then I'd probably feel different. I'd have a bigger, obviously, different connection to it.

There is a mixed reaction to using a brother or other relative as a donor for sperm.

While some felt like this was a viable option, others felt like it was too much. James

discussed this: “You know, my ex-girlfriend [name redacted], when...one of the first conversations we had with this issue was like, ‘Your brother can just donate sperm.’ And I found that to be a very weird proposal and not something I think I'd be comfortable with.” He went on to explain:

Well, so, like, I mean, in a very, in a colloquial term, I'd be raising my brother's kid. It'd be my kid, right? It's my kid. I'm raising them, but genetically it's my brother's kid. I always think, they'd like, we'd go over to my brother's house for Christmas, and they'd be like, "James is my dad, but [name redacted, James' brother] is also my dad." I just think that'd be weird.

Wyatt also mentioned the pros and cons of using a brother as a donor. He spoke of a half-brother, with whom he was not raised, and compared him to a brother who shared his home in childhood as well as now:

And I have a brother that looks exactly identical. Like—and so in my mind, I was like, “Yo! I think it would be easier for me to be like, ‘That’s my kid,’ if I can have my brother’s kid.” Like, it wouldn't have been as weird as if it’s the brother that lives with me, because I know him, know him. And then that would be like he had sex with my wife, even though he didn’t have sex with my wife.

Wyatt went on to explain the importance of using a family member to feel a connection and “feel like it was mine, part of me,” but he also wanted some separation and distance by using his half-brother, who he did not know as well.

What is challenging about dealing with and thinking about fertility and genetics is that it does not just impact the veteran; the partner or spouse as well as any potential child are also important considerations. Understanding and processing fertility options is particularly difficult when one is single, and thoughts about it are hypothetical. However, knowing options can also help decrease anxiety and give hope. Logan described thinking about his infertility and options. He discussed asking his brother whether he would consider being a sperm donor: “Uh, he said it was a little...He said, ‘We'll cross that

bridge when we get to it,' basically.” Logan continued, “I'd like to have at least family if, basically my brother, if he would do it. But I'd understand if he didn't want to, and I wouldn't put it all on him. So.” He continues to struggle with writing this piece of unknowns in the reproductive narrative.

One veteran described how—after he was told he likely would not be able to have children and when the doctor helped to provide options—it gave hope and relief:

And Dr. [name redacted], you know, had suggested that we wait down the road when—further down recovery, when my hormones are balanced out, I'm not on all the narcotics, not having to do all the other immediate stuff like inpatient stuff. He was like, “Once you get to a point in your recovery where you feel like you can handle this, then we'll start this process.” And that's—you know, that gave me a timeline, gave me an end state, and it gave me something to look forward to. And it didn't close the window on me.

Getting answers and understanding decreases anxiety regarding fertility, as he noted, “And then when I—by the time eight months came around and I found out that it didn't work, I wasn't as devastated, because I felt like we did everything that we could do, try to fix it, and it just didn't happen, and that's just the way the cards were dealt.” While he appeared to reach a resolution with this statement about the infertility, he continues to struggle with his reproductive narrative and what will be next in terms of children and his intimate relationships.

Impact on path to have a child. Internalizing and processing the meaning of infertility can be a challenging and slow process. Although there are other options available, there are certain provocations that arise from these. Andrew noted:

Um, in the beginning I was kind of really tore up inside about it. So, like, you know, I was like, “I don't wanna adopt.” I mean, you know, I would be looking at it like that. I just...anything that I could do because people would always give you another option. But for me it wasn't good enough because I wanted the old way. I just wanted that.

He proceeded to mention having anxieties about being a parent in general, stating, “I think it's, you know, it is a responsibility. Kind of makes me nervous just because you're responsible for raising a decent human being. So, I mean, that's a big job. I don't know if I would even be cut out for it.”

James’ experience seems to be a bit unique from the other veterans’ experiences:

Um, you know, I've always been aware of adoption and sperm donation and... and I don't know—I —I’m very glad that I'm my father's son, but I don't catch myself all that often going, "Man, I'm really glad I got my dad's genes." Like, I'm very glad that my dad raised me, that my parents raised me. Uh, and of course they gave me their genes but, like, I would prioritize the way they raised me over the genes that I got from them, and so I just assume that that's the way I'm going to be as a parent. Like ideally, I'd like to be able to pass on my genes and raise my own kid, but in terms of which is more significant, my—in my uneducated opinion, I figure raising my kids is more important than passing on my genes to them. So I don't think that aspect of the injury will be a huge problem for me, but of course I can't say that with confidence until I actually experience it.

While James seemed to express a bit more acceptance of and place less significance upon the genital injury, the sub-theme that becomes apparent and is still true for him is the idea of not being sure how he will feel until he experiencing that phase of his life. He acknowledged that he cannot fully appreciate what this means as he is not ready to have children yet. However, while he discussed that genes may not be the most important, he acknowledged that he would like to be able to raise his “own child” and pass on his genes. James reported that genetics is less important to him, but it is something he knows he cannot control. Thus James harbors a contradiction about the genetics.

As he progressed through the recovery process, Andrew moved toward relative acceptance regarding his inability to have a genetic child because it was beyond his control:

I overthink things a lot. That's a big problem I used to have. So when I got hurt, that was kind of my worst enemy was myself. So I would think like, “Well, what

if they [children] hate you one day?” and they are like, “You're not my [father].” You know, that kind of stuff. I would think, and it was kind of a pointless thought at that time, but yeah, there were some things, like, that scared me. But, like I said, that's kind of one thing that may never happen.

Andrew began his recovery journey having fears about infertility and starting a family, and he moved toward being ambivalent about it because it “may never happen.” Seeing different sides allowed him to protect his feelings about having children.

Another participant described going through IVF unsuccessfully:

[The urologist] went in and tried to see if he can, like, take any sperm out, and he just went in there, and he said there was nothing in there. So I was a little relieved after that just because, like, it was over. Like, I knew that there was no possibility. And so then we started talking about options as far as adoption, surrogate mothers, or artificial insemination and stuff like that. And so initially I was okay with it. I was like, “Yeah, we can do that. That’s fine.” But a lot of the—there was just a lot of that in me that was like, “Yo! Are you really okay with that?” Like, “You're not okay with it.” Like, “You really wanted to have...” I really wanted to have a kid, and so it was just—that was just devastating.

He described the conflicting feelings he experienced as he moved through his reproductive narrative.

Several veterans note having delayed the search for a partner and starting a family because they were in the military and wanted to be at a more stable place in life. Now, with a significant injury that caused infertility, it became frustrating that they had intentionally delayed this process and the chance to start a “genetic” family was taken away. Jack discussed waiting:

You never know, so I knew that I was going to produce a child. I was planning for that. And I was gonna make sure, I was gonna make sure first that I was financially stable and, and mentally right to, to raise a child, to, to make sure that they understand that they were raised the right way. And I was gonna raise them the right way like my father raised me. Do the right thing, and be a good person. Fight against crime...

He continued, “So I made the decisions to not, to have anybody involved in my life. I was gonna do that after I got out.” In relationship to delaying children and being told that he would not be able to have a child, Wyatt discussed this devastation:

And it was already—had already been through a traumatic experience, so it was just ready for—to calm down. And so I just remember coming in and she told me, you know—straight-faced and all, she was like, “I’m sorry, but um, you’re not going to be able to have kids.” And I was like—I was [age redacted, 21-29] years old. Like, I had literally had spent the last ten years of my career in the military pro—like trying to, you know, delay the kids thing, because I didn’t want to have kids and be in the military at the same time.

His plan is now forever changed due to this reproductive trauma.

While it can be important to understand fertility for recovery, it is something that is hard to actually think about until one is ready to procreate. Even if there are known options, the options just become something in the back of the mind. One veteran explained:

Funny, it’s interesting because I didn’t really think a whole lot of about IVF even up until right before my wife and I decided to do it. I knew little bits here and there, but I knew it was always there, and I knew what it was in a general sense, and that I was told early on that “Yeah, if you want to have children, good news is you could probably still do IVF, but that’s the only option.” So I always had that in the back of my head, and one of those things that if the conversation came up, it was more, yeah, the same general statement of, “Well if we were to want kids, IVF is there as an option.” And I didn’t know the extent of things, or what it all entailed and things like that. It never really got past that kind of conversation. It was just that, “Oh, it’s still possible. There’s this option.”

The experience of infertility treatment was different than expected but still remained a possibility, yet it was not for other participants.

Going through the IVF experience and having a child or being ready to have a child also creates other feelings. IVF is expensive and emotionally demanding for veterans, and the female partner is the one undergoing treatment. The veteran explained, “I mean, it’s such a taxing process on the body and the mind and everything, such a hard process.” He continued:

It’s kind of—it’s definitely been a hard topic of discussion as far as what to do going forward [in terms of growing a family] and just so many factors. Which goes into the point of, it’s definitely hard to—we have friends that, you know, the types that look at each other and they’re pregnant again kind of thing. To be happy for them and stuff, and you know, you deal with these issues and everything. So it’s very much a mixed bag of emotions and everything.

Factors to consider include finances to pay for fertility treatment, the physical toll on the body from IVF, the ethics of treatment, the uncertainty with outcome of treatment, and raising a child while the parent has a disability. While IVF provides an option, the veteran also joked about the difference between IVF and having a child through natural intercourse:

And we joked around—I remember telling [name redacted, wife] in the room when we did the [embryo] transfer, “There’s a heck of a lot more people here than I thought there was going to be when we were conceiving our child.” You know? A lot more people in the room! [laugh]

Personal histories play a role in veterans’ views of growing a family. The veterans spoke about personal adoption stories, other family members who were adopted or used a donor, a biological father leaving at a young age, and the impact of ethnicity, religion, and experience with the military. Wyatt discussed several of these factors:

I mean, maybe some people—um, some people, um, aren’t that family-oriented. Maybe they’re job-oriented or they’re self-oriented or whatnot. But I’m [ethnicity redacted], and I come from a pretty big family. So we’re really family-oriented. I grew up with a stepfather. My father left when I was early, so I was like, I don’t want—I don’t want to be out my—the picture of my son’s or daughter’s life. Like, I want to be in that picture. And so, I just, you know, with the experience of

the military and people divorcing and stuff like that, like, I just knew that it was going to happen. And so, I put [having children] off. So, I created that pressure on me. So, I don't even know how someone could have told me, "You can't have kids." I don't know if there would have been an easier way. However, I do know that just walking up to somebody and telling them after a couple days of treatment that they're not going to have kids is not the right way to do it.

Steps should be taken to discuss the infertility in a safe and empathetic environment.

Infertility does not solely impact the veteran. With the concept of donor sperm, questions arise such as: Does it mean or feel like my partner has slept with another man? Am I not the "real" father? What is the role of the donor whether it is a family member or anonymous? What would this mean for me? How will the child feel? As James noted, "I do have a slight concern about, you know, the psychological impact for the kid. Um, I want them to be comfortable and happy with who they are and how they're raised."

There are significant complexities to growing a family outside of "normal" conception through intercourse.

There is a need to consider the biological inequality when a spouse is genetically related and the veteran is not. What does this mean for them, individually and as a couple? This idea was not mentioned probably because no one who would need donor sperm had gone through the process.

Identity Construction

The final theme that emerged is the process of regaining normalcy, direction, and purpose. Realizing the new self post-injury is a way to re-construct the reproductive narrative.

Grief and loss. James discussed the loss he experienced after the injury:

Like, my identity was very much wrapped up in my physical capability. I mean, I was an infantry officer. Part of my job was to be physically capable and stronger, more capable than the average person or even more than the average soldier, and

then all of a sudden, I woke up in a hospital room and, you know, just had been beaten to shit and then had no legs.

Joe similarly noted, “And you go from being in the best shape of your life and being airborne infantry to fighting for your life, and then all of a sudden you're dependent on a lot of other people, and basically you're relearning how to dress yourself...”

There is also grief over a losing a “normal” life and the old self as life is now different. Andrew discussed this as he described his experience with his GU injury, noting, “But I just never could tell anybody. I just kind of lie about it or something like that. So that was kind of the most difficult part, I think, just because life is different I guess.”

There is a general loss of direction and career as the injury affects their ability to do their job in the military. Even for those who did not plan to stay in the military, ideas of their careers were tied into physical strength. Logan described not knowing where to go in his life since the injury. He lacked direction in his intimate relationships due to his probable sterility and uncertain career. He noted, “I'm like an identity crisis. I'm like trying to find out who I am, basically. ...It's like I'm starting over.” James noted going to mental health therapy and realizing his loss:

They helped me realize this and then we explored it, but the issues were essentially, like, I lost a career that I had worked really, really hard and gone to a lot of school just to begin. It's like I made it to the major leagues in baseball and then got injured in my very first game. Like all that effort and then it was gone. Um, so I talked about that.

One veteran described his ongoing grief related to being an amputee:

Um, so the injury is tough to deal with at the beginning and then, look, every single day it is tough. I mean, each morning I wake up and I just think, "Man, I still don't have any legs. I've still got to use a wheelchair and rely on prostheses, and I can't just grab my running shoes and go for a jog anymore."

As is true for grief, it never fully goes away. It may be easier to manage over time, but there are certainly moments in which the realization becomes apparent again, especially with the irrefutable realities and limitations of regularly not being able to “grab [your] running shoes and go” causing grief to resurface.

Another veteran described being told that his leg would need to be amputated:

When they first told me I was gonna lose my leg, because I didn't...I didn't think I was gonna lose it, I started crying. And then just some days, every now and then, you know, couple days a week. In the beginning, it's harder, and then just more good days than bad days after that.

The lack of preparation makes it difficult to process in the moment. The grief continues, and veterans still grieve their injuries, searching for meaning and direction in life.

Realizing new realities. There is a path to realizing new realities, those that are more permanent. However, recognizing these changes does not happen immediately. Andrew explained, “So, like, you have to rely on other people. It's kind of...that's the tough part I've had.” He continued, “Yeah, because there are certain things you just can't do anymore. That really was the thing that bothered me the most.” Another veteran noted the realities: “The legs blown off and stuff, I mean, that's all healed and stuff, but it's just a pain in the ass being an amputee.”

There is a need for ongoing maintenance of physical and mental health, and there are new realities that are tied into the physical injury. Joe noted:

There's a lot of planning that goes into just kind of everyday stuff, where every week I'm looking at my calendar like, “Okay, these days I have to do this and that. I've gotta...” You know, I've got to basically set aside these blocks of time just to get my self-care done. And it's just time-consuming and not something that you really want to do, but you have to do because I'm very, very adamant about my self-care, to be healthy.

Noah, too, mentioned the importance of self-care: “Again, I do have bad days, and I have to realize those bad days and recognize when the warning signs sometimes and reach out because I have to do self-care. I can't do...I can't do buddy care, help anybody else out, if I'm not doing self-care.”

Every day takes more time and requires dependence on others due to limitations with the extensive injuries and polytrauma. Wyatt explained:

Like, I can't pick up something heavy if I'm standing. I can do it in my wheelchair. I can do it if I'm sitting on the ground. I can do—it's not that I'm not strong enough. It's just that my legs won't allow me to do it. Climbing—I used to go hiking all the time. Like, I loved hiking. What else? Like the outdoorsy stuff. I can do it, but like I have to do the research, and I have to be, like, “Is this...?”

Veterans with this type of polytrauma injury must plan and prepare to be able to be involved in physical activity.

There are other ADLs or chores that need to be completed that were easily possible pre-injury and now are more difficult. Ryan noted:

I think the biggest thing that we always talk about that it would be really nice if I could do is just, like, the manual labor stuff. So like, you know, the sink. You know, I fix part of it but I can't do a lot of the different handyman stuff or whatever now. And so that's kind of a big deal for us, because you know, one, I used to be able to do a lot of that, because I did carpentry.

He also described difficulties with not being able to drive and run errands as easily by himself. James expressed similar sentiments:

You know, I, we just moved into this house, and you know, there's little things that we've needed to fix all around the house, and it's like I can't, I literally can't climb a ladder and change a light bulb. Like, if it's above my arm's reach, I'm shit out of luck. Um, I have to rely on my girlfriend to do that, um, and that's frustrating because, one, it's not fun to have to rely on another person period, no matter who that person is and to like, you know, I like being a kind of helpful, typical guy. Like it's—maybe it's a silly gender role but, like, I like being the guy who can fix things around the house, and it's, you know it, it teaches me a little humility to have to sit back and watch my girlfriend fix things around the house.

There is a new level of dependence and need to ask for help that was not true pre-injury.

Everything takes a bit longer with these polytrauma injuries, and the pace of life is slowed. As James described:

Everything takes more effort in my life whether it's grocery shopping or exercising. I'm just reliant on, uh, mechanical devices, you know: wheelchair, prosthetic legs, a hand cycle to bike, a racing wheelchair to run. The only thing that doesn't require any effort is swimming because I just swim without any attachments in a pool. But in order to do that, I gotta have a wheelchair with me and you know it's just, uh, everything seems more complicated. Um, I'm slower and I'm less capable, you know. I just moved into this house. I can't climb a ladder and, you know, fix a messed-up shingle on the roof, like something that would require five minutes of effort. For me, it's just impossible, so I gotta call a friend or get my girlfriend to do it or something. Um, so everything is manageable, it just takes more—more time and more effort.

Gradual acceptance. The pathway to embracing these new realities—recognizing and accepting them—is a long process. It takes time to discover what one can and cannot control throughout recovery. Noah explained:

You really have to reassess that on a daily basis, on what's too much and what's not enough. Um, but I try and push as much as I can to be a good example for the other veterans that I go and try to help, uh, to show 'em you don't have to be a victim of your injuries, you know. Y-, y-, you dictate what type of mood you have. You dictate what type of day you have, so...

Making attitude choices and accepting certain limitations helps to make polytrauma more manageable. One veteran changed his thoughts about his prostheses:

They don't bug—they used to bug me. The actual [pause] the actual me not having legs doesn't bother me. Like I'm—when I'm in prosthetics and I'm walking around—I got blown up and I was 5'10". Two hundred and—I was like 205 pounds. I got blown up. I'm 190 pounds now, but I'm six foot. So when I go out now, like, I feel like I'm six foot.

This shift in attitude helps with acceptance.

Recognizing that life is different and that there is a new person who will emerge from these injuries is an integral part of recovery. As Wyatt stated:

And anybody that thinks they can go back to the way they were before is just—they're in denial. Like at some point in time, like, you're going to have to figure out that yes, you are different. It's okay that you're different, but—and you're going to have to figure out how to get along with it.

James reported that this is an often daily thing as he described the shift in identity responsibilities with his girlfriend:

Now we split chores up. Like if there's anything that needs to be fixed that's, like, waist level and below, like, that's all me. You know, I do that. She does the high stuff. So we painted our bedroom as soon as we moved in. She did all the high stuff, but I nailed all the low stuff. Um, so you know, we make do, and I just have to, I just have to consciously remind myself like, “Hey! Just because some of my physical identity is gone, it doesn't mean that I'm not still a good person or still an impressive person.”

Joe also described the process of understanding and realizing the new realities of his injuries:

I accepted it pretty early on, especially those long nights and days in ICU when—where it felt like an eternity. But you're just kind of laying there, half drugged up, and you've got a lot of time to think and kind of reflect on things. And I kind of pretty much kind of accepted it at that point, just even within the first few days of my injury, that this is the new reality. So it kind of—I mean, I like to think that it kind of helped me accept a different direction in life, and “This is the way it's going to be.” I had a lot of time to kind of just, kind of think about it by myself in my own head, very early on.

While he reported accepting the injury, there is still a process needed to fully understand what all of it means. Initial acceptance allows veterans to engage in the recovery process.

There are many things that can come up during the recovery and day-to-day processes as James described:

The physical injury. The, the lack of legs. Like, I want to be able to be more active with [name redacted, girlfriend]. Um, I think it brings us closer, so let me go off on a slight tangent which is: my injury sucks, and it's very frustrating on a day-to-day basis, and sometimes hour by hour, it's frustrating. Um, that said, I think it is making me a much more, like, compassionate and understanding person. I think it has forced me—I would say taught me—but really forced me to

be more patient. Um, you know, I can't just get things done the way I used to, and so the choice I'm presented with is, well, I either let it frustrate me to death—the fact that I can't do things, or I can't do things the same way I used to—or I learn to accept it. And learning to accept it hasn't always been easy, but I think it is something that I've done.

The path to acceptance includes challenges to recognize the new realities and the ongoing implications of the injuries. Andrew discussed his difficulties with recovery and the overuse of opioids: “I was pretty much aware of it. I mean a lot of it was denial. I didn't wanna accept it at first, so I can be stubborn in that way.” He further explained his process with accepting the GU injury:

It's a long road. It's hard but, um, it is what it is, so I mean—It was. It was hard, but I mean the biggest thing is just time helps you. Because the longer you have it, you—you know—you realize it won't grow back, so you just need time, and eventually you figure out ways around it and how to have a successful life, if you will.

With personal acceptance, there is a need to feel accepted both with and in spite of the injury. James described the injury and what he has learned from it:

And it's just, I mean, it's going to sound completely cheesy, but I appreciate life a little bit more. I don't think that I'm invincible anymore. Um, I think that human beings are a little bit more fragile than we often think we are. I just kind of apply that to society in general. Um, you know, I appreciate [name redacted-girlfriend] because she appreciates me. Like, the injury doesn't bother her. It's not like she's not aware of it. She's very much aware of it, but she chooses to be with me anyways. And I think in the same way that I've kind of grown to be a slightly better human being from my injury, I think [name redacted-girlfriend] has grown to be a slightly [inaudible 01:04:59] human being from dating me, and together [inaudible 01:05:04] we grow to be a little bit better.

James explained this concept in relationship to an intimate partner while Wyatt described being remembered and accepted by a volunteer mentor at the MTF, which helped with this recovery:

And then I had a mentor who I got after, about a year after recovery who has been amazing. Yeah. I don't know. Without him, I don't know what would be going on

right now. Like, he was just able to help me connect a lot of the dots that were different from military dots and recovery dots.

Comparing injuries to other wounded warriors is a natural occurrence. This comparison helps to keep the injuries in perspective, whatever they may be. As one veteran described:

I still have use of my hands. I've met a lot of quadriplegics and things like that. They're a lot more dependent on others. You know, blind or any of those things. I just can't really stand to sit on my butt all the time. That's really it. If there's other ways to adapt and do the same things in life, as opposed to, you know, dealing with severe burns or traumatic brain injury or quadriplegic or whatever it may be, I can handle this. You know, you can still do a lot.

Adapting to the realities and adjusting attitudes help veterans to accept their injuries.

Finding normalcy in old and new selves. There is a new normal and expectation that is different from that of pre-injury life, and it is difficult to understand and appreciate that life “couldn't have been back to normal” post-injury, as James described. There is effort to get “out of patient mode” and find “normal.” This comes as the veteran tries to locate pieces of his pre-injury self. As Wyatt described:

And so I'm pretty self-conscious about not having testicles and being in a wheelchair. So when I'm not in prosthetics and I'm in my wheelchair, that's when it affects me. Because then now I—now I know I don't have legs. When I'm meeting someone and we're not eye-to-eye, it's like now I'm back in patient mode. You know what I mean? My whole recovery is trying to get out of patient mode.

Wyatt discussed wanting to build up his self-esteem, connecting it to getting testicular implants so he could have something that looks “not out of the ordinary” because “as long as they're there, I think it's like out of sight, out of mind.”

Figuring out the new self in relation to the injury can predominate the thought process. Joe explained finding ways to not have the injury be his whole life:

Especially early on and up until the last couple years, basically it was 100 percent the identity. Especially in between, it was just that always attached, the wheelchair plus the combat-wounded...injury, was always there. You couldn't escape it, even if you tried. And [my wife] has been a huge help with kind of breaking that, where before, yeah, it was like all my identity surrounded the chair, surrounded my service, everything 100 percent around those. Now it's, you know, I self-identify no longer "Joe Hodges, combat-wounded, [need wheelchair]." It's "Joe Hodges, father, student, business owner." All these other aspects of life, not just those. Yeah, they're still there, but they're not all of my identity. Now it's—like I said, getting into adaptive sports helped shift that focus as well. And now it's this chunk over here along with all these other things, not the whole picture. It's just part of my life, not the whole life.

James explained that in the first few years after the injury:

My life was still very much the wheelchair, and I was uncomfortable out in public or uncomfortable out at bars, whether on legs or in a wheelchair. And so being in my [age redacted, 21-29], I just felt like my ability to move around the world and to interact with people was, uh, very limited and that was not what I was used to experiencing.

He talked about the shift to finding a new direction and career.

Need to achieve independence. Because of the dependence associated with being in a hospital and relying on medical professionals to stay alive, as recovery progresses, veterans must develop ways to regain some independence. Thus, veterans often ask their mothers or other family members to leave. Finding independence even from a partner or spouse also becomes important.

Wyatt described the process of finding independence and the difficulties associated with this effort:

It was a while. It was probably half a year or so...before I could even think about, you know, I wanted to be independent. And then about a year after that, it was like, there's a lot—there was a lot of progression and then backsliding. Progression, backsliding, progression, and backsliding. And the only time that I really didn't have a lot of backsliding was when I was playing hockey.

He described how the hockey brought independence:

However, by doing that and becoming more independent, like it kind of, like, pushed my wife out of the—out of the equation. It wasn't like I was pushing her away, but I was like, "Look, I can do all this." I'm excited. She's excited. But at the same time, she's like, "Well, he doesn't need me anymore." Like, "He can do everything on his—by himself."

Navigating the competing needs of relying on others and asserting independence can make finding a satisfying compromise challenging.

Joe described struggling with using a wheelchair to get around:

For years it was just one of those where I'd be out and about and you'd see—you'd be on top of a curb. "Well, crap! Now I've got to go find a curb cut to get around this." Because I didn't really know how to jump a curb. But once I actually learned all these wheelchair skills, that's no longer an obstacle. I'd say now more than ever, it's—I've never been more independent than I am now.

The mastery of getting around by himself helps to build confidence and acceptance related to the injury.

Independence is a primary task of rebuilding a more confident sense of a self and moving forward as Andrew noted:

Growing up, get to where I am today, just, you know, living my life pretty much normally where I don't need anyone else kind of take care of me. Getting that independence back has helped me a lot more. And I think those things have kind of put that injury kind to the back runner, like I don't—It may not matter as much anymore.

Importance of active lifestyle. Determining ways to re-engage in old interests and hobbies can be challenging due to injury-imposed limitations. It takes shifting the mindset and imagining a new normal to participate. Joe noted:

After I had had that bad relationship, and I was kind of going through kind of a self-evaluation phase, deciding I needed to make a change in my life for the better. Because I was so active growing up and through the military and everything and lost a lot of that, I wanted to get back into some things and get in better shape, lose some weight and whatnot. Because being in a chair all the time, you're a little more—you don't get that cardio. You don't get the "I'm just going to go for a walk." You know, it's more difficult than that, and you can't really get the cardio workout and everything. And I knew what a hand cycle was. I knew

about them a little bit, and I thought, “Well, maybe I’ll get a hand cycle and go from there.”

The benefits of adaptive sports are multi-faceted and can be “hands down...the best part and the most beneficial part of my recovery process” as Joe noted. It helps veterans to find normalcy and regain ways to engage in old activities as well as connect socially. It provides an active outlet and a way to work on the physical and mental recovery while giving lives structure and focus. Wyatt described how playing adaptive sled hockey helped his recovery to “skyrocket”:

And that was just—because it was almost like being in the military. It kept me occupied. I was with a team. We had a common mission. Everybody that was playing wanted to get better and wanted to, you know, train and wanted to evolve from when they started. And it’s the same thing in the military: you’re going to war, so you want to train to be the hardest fighting enemy for your enemy. And so it was just like—I just fell right in seamlessly.

Adaptive sports provide paths to becoming active again and to finding some of the old self and direction. Joe stated:

So I got to a point in my recovery and in my life—you know, I was about [several] years post-injury, and just kind of—especially in a wheelchair and things like that, you’re—it’s a more sedentary lifestyle, and it’s harder to get active, especially if you don’t know where to go for especially adaptive sports. You can’t just go jump on a bike. You can’t just go for a run. You can’t do all that stuff. So I got involved in adaptive sports, and that’s where [my wife and I] met. We like to joke around that it was definitely not love at first sight because she was kicking my butt on a hand cycle.

He talked about trying “skiing, mono-skiing, everything from adaptive rock climbing, mountain biking, road biking, and then, you know, kayaking. All kinds of—you name it, I’ve probably tried it.” He concluded that participating in adaptive sports helped him to “regain that freedom again.”

Adaptive sports provide motivation in other areas for recovery. Wyatt described how playing hockey helped him:

And so, that was positive, the hockey thing. I've always been a positive person. Even before I was injured, I'd never complain about a whole lot of things unless it was really bad. I'm at a place now where it's still hard. Like, it still sucks to walk. It still sucks to walk when it's hot. It still sucks to have to take your legs off and stuff like that. But I'm at a place now where if someone said, hey, they want to do something, and I'm like—in the back of my head before, I'd be like, "No, that's too long. That's ridiculous. I'm not going to do that." Now I'm like, "I can do the—yeah, it's probably worth—it's probably worth being in legs for 12 hours." Yesterday, 21 hours to go look at Moab. Like, I think that's pretty cool now. Before I never saw the end of that tunnel, and so now, like I said, every day less and less, but you get to push the limits a little bit further, and that's a lot—that's a lot of fun.

Finding direction and purpose. Determining a direction and path in life—whether through changing careers, finding a partner and building a family, or giving back to the community—is a central sub-theme that veterans directly and indirectly acknowledge throughout recovery. Noah described how the injury caused a shift in thinking: "I think that it gave me a greater appreciation for having somebody else in your life after being blown up. Um, you know, just like it changed my perspective on being a father as well, you know, after being blown up." New things become important that may not have seemed significant previously.

Being a parent is something that can give purpose and motivation when moving into the next phase in life after injury. As one veteran noted:

Yeah, [having child(ren)] definitely solidified, like, moving on from the injury, and then also it gives me, like, a little bit of an extra motivation to get my stuff in gear and keep moving as hard as I can for the babies. You know, making sure walking gets done and stuff, so that way I can walk around with them and stuff. And then where we live, they do a lot of father-daughter dances. So that'd be one pretty cool thing to be able to do with our little girl and stuff. So there's a lot of different extra things to look forward to now that the babies are here.

Joe's experience with his recovery and finding adaptive sports provides him the motivation to help others, as he explained:

And I came back as a volunteer with some of the new guys coming through the clinics and helped teach them and be one of the volunteer peer mentors. That is one thing I try to do here and there as often as I can is doing peer mentoring. Because I know that there wasn't really that around when I was doing my rehab, and when I was early on in my injury. So I always wanted to kind of get back, and if I could teach some people that are where I was [directly after being injured], and if I could save them effort and some of the bad experiences I had by teaching them to avoid those, then that—all for the better with that.

Finding a new career is also another thing that helps with the mental challenges of being a wounded warrior, shifting the focus from the injury to work. Although he has a “mild” diagnosis of PTSD, Ryan said:

I mean, just like the—the mental side [was easier part of the recovery]. A lot of guys have a lot of trouble with that side of things. But for me, I just really dove into what I'm doing now, which is basically investments. And I just kind of dove into that, really hard core. So I just bought tons of books on it, took a lot of the money that I had made from being—getting an injury and getting my lump sum payment from the military. I just kind of took a lot of that and dumped it into the market and was basically trading my, my money that I got from getting blown up and everything. And so that's basically what I focused my time on was that, and you know, playing games or whatever, or going out in town.

Having a purpose for living provides motivation to deal with the hardships of being injured and the recovery process. One veteran described finding motivation in his daughter. Specifically, he noted that she is a reminder “just to remember why I'm alive, why I'm, excuse me, why I'm continuing to fight the fight that I'm fighting, uh, to remember why it's worth being alive.” He described thinking about his daughter's future and walking her down the aisle one day, noting “I lean back on my mental toughness to keep me pushing and keep me going as much as I can.” The veteran continued, discussing how moving closer to his daughter “is the worst decision I could have made medically. It's the worst decision I could have ever made financially, but it was the best decision I could have ever made for my daughter, for being around my daughter and for me to be a father.”

Getting involved in the community provides a way to give direction to life and expands the possibilities of becoming generative. One veteran noted:

After, you know, after I've come to the idea that I was—I wasn't going to be able to have kids, um, that didn't mean I couldn't have kids, I saw it as. And so when I was playing hockey, there happened to be a 14-year-old at the time who played with us. So he was a young kid. He was a good hockey player. He had been playing for maybe three or four years before, so he was—he had all the fundamental down. He had all the things that I didn't have down. What he didn't have down was all the other things that—you know, like a father figure, a coach, or something like that, with you to teach you. And so just being able to spend time with him and then give him advice, or have him come to me with a problem that he's having that doesn't even have anything hockey-related to do with hockey. Like, he would still come to me. Like, I felt like that was pretty cool as well. I was like, you know, there is—you don't have to be a dad to do dad things.

A shift in thinking helps Noah to begin to rewrite his reproductive narrative. The importance of the community and finding ways to give back can be seen as he described the military community:

Uh, so what I try and do every day is, I try and make sure that I'm giving back to the veteran community. I help other veterans that are transitioning out of military, help with suicidal issues whether that be over the phone or going to their location, wherever that in United States or getting them support where they need it.

Being involved in the community helps veterans to formulate alternative ways of being generative outside of growing a family.

PROMIS Results and Discussion

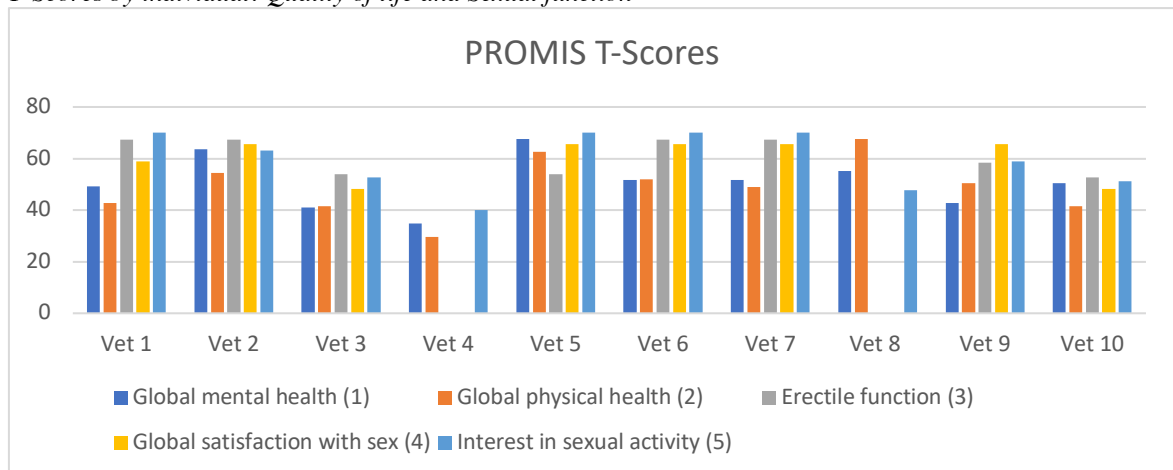
To further understand, explain, and interpret the qualitative themes that emerged, each veteran completed a measure that assesses quality of life (examining physical health, mental health, social health, fatigue, and pain) and sexual functioning. Quality of life is divided into two domains—physical health and mental health (with social health incorporated into mental health)—while sexual function is broken into interest in sexual activity, global satisfaction with sex life, and erectile function. This measure provides a

standardized way to report and visualize quality of life and sexual functioning. The data are reported for the measures and then it is explored in relationship to the individual veterans.

The quality-of-life measure—compared to the general population—and the sexual functioning measure—compared to the sexually active general population—automatically generate T-scores. The mean is 50 with a standard deviation (SD) of 10. One SD below the mean for these measures indicates mild impairment, two is moderate, and three is severe.

The results, as indicated in Graph 7.1, are first considered in relationship to the comparison populations. For quality of life, seven of the veterans in this study scored at or above the mean for global mental health with two who were one SD below and one who was two SDs below. Six participants are around or above the mean; three are one SD below and one was two SDs below. For sexual functioning, eight of the veterans are around or above the mean. The remaining two veterans are the ones with penile amputation, thus some sub-scores were null, as indicated by missing columns.

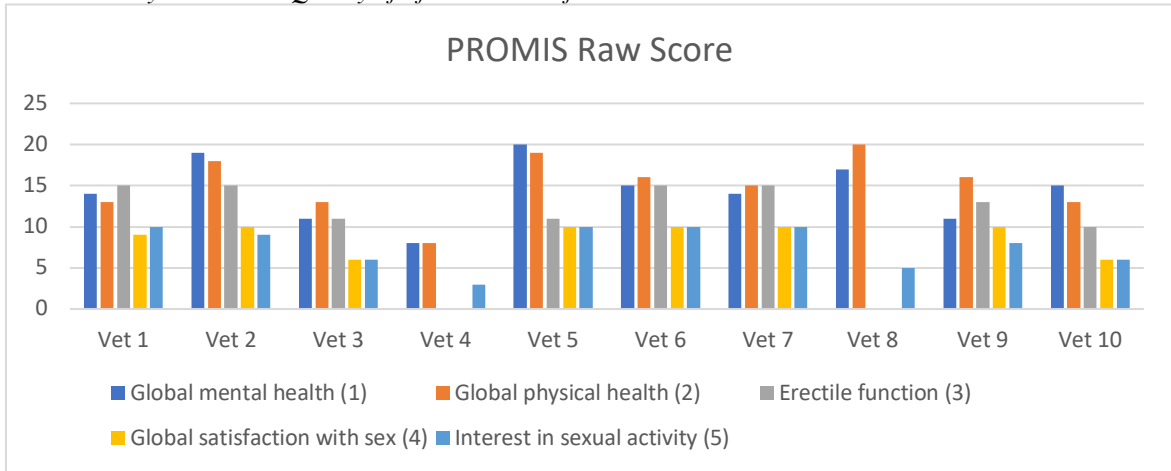
Graph 7.1
T-Scores by individual: Quality of life and Sexual function



The results from the comparison populations seem to be of limited usefulness with this population and this small sample, particularly with the sexual functioning aspect. While these are subjective reports, the purpose was to see, and more fully understand, veteran self-reporting. Some veterans who during the interview experience reported sexual difficulty still rate themselves highly on sexual function. What is confusing and misleading is that Veteran 4—who rated himself as rarely wanting to have sex and having no interest—scores a T-score of 40, which is only one SD below the mean. The sexual function measure also does not account for a penile amputation. The context of this sexual function is based largely on erectile functioning due to some physical ailment (e.g., cancer) and does not consider it in the context of an actual injury to the GU system.

To consider another context, the results are then viewed through the raw scores. While it does not provide statistical results in comparison to a standardized population, this assessment tool does allow a look at individual veterans' reported quality of life and sexual functioning. Graph 7.2 shows all domains from the measures and views each veteran individually. Both quality of life domains are rated with a total raw score of 20 while erectile function is out of 15, and global satisfaction with sex and interest in sexual activity are out of 10.

Graph 7.2
Raw scores by individual: Quality of life and sexual function



Veteran 1 has scarring and shrapnel attached to both testicles. He is married and conceived via IVF. He rates the GU injury secondary to his other comorbid injuries. He has significant polytrauma. His quality of life is at an average to slightly below-average range with above-average sexual health. On the scales, he reports a 14/20 ($t=49.3$) for mental health and 13/20 ($t=42.7$) for physical health. His global satisfaction with sex rates a 9/10 ($t=58.8$), interest in sex is a 10/10 ($t=70$), and sexual function is a 15/15 ($t=67.3$). The reports seem consistent between the interview and the measures.

Veteran 2 has a bilateral orchiectomy and scarring on his penis. He maintains sexual function and has a committed partner. He rates his genital injury as secondary to other comorbid injuries. He is an outlier in his view given the severity of his GU injury. He has begun a new career path and has a strong support system. The measures suggest both his quality of life and sexual health are above average. On the scales, he rates his mental health a 19/20 ($t=63.6$) and physical health an 18/20 ($t=54.4$). His global satisfaction with sex rates a 10/10 ($t=65.6$), interest in sex is a 9/10 ($t=63.2$), and sexual function is a 15/15 ($t=67.3$). The reports seem consistent between the interview and the measures.

Veteran 3 has a unilateral orchiectomy and had significant atrophy to the remaining testicle. He is separated, and he and his wife were unable to conceive via IVF. He was talkative and engaged in wanting to discuss the impact of the infertility and his genital injury. He is engaged in community activities and adaptive sports and has a strong support system. The measures suggest his quality of life is slightly below average and his sexual functioning is average. On the scales, he rates his mental health an 11/20 (t=40.9) and physical health a 13/20 (t=41.6). His global satisfaction with sex is a 6/10 (t=48.2), interest in sex is a 6/10 (t=52.7), and sexual function is an 11/15 (t=53.9). His quality of life seems consistent between the interview and the measure, but the report on sexual function in the interviews described more difficulties. Although veteran 3 was actively engaged in talking about sexual function, he also endorsed difficulties in talking about it and saying his sexual function was fine, even when it was not.

Veteran 4 has a bilateral orchiectomy and total loss of penis. He has a child or children from before his injury. He is articulate and insightful when talking about his genital injury. However, he notes that it has impacted relationships, and he continues to struggle with this aspect. He is skeptical about treatments for his GU injury. He reports that he does not want any more children. He is actively engaged in the community. He engages in self-care and refocusing his energies in more positive directions. At the time of the interview, this veteran had an impending medical surgery that he needed to address wounds that had reopened. The measures suggest his quality of life and sexual health are below average. On the scales, he rates his mental health an 8/20 (t=34.9) and physical health an 8/20 (t=29.7). His interest in sex rates a 3/10 (t=40.1). The global satisfaction with sex and sexual function could not be calculated as questions were inapplicable. His

quality of life on the measure seems lower than his presentation in some ways, but the impact of GU injury on sexual function and subsequent difficulties with relationships might influence the quality of life in some regards.

Veteran 5 has a bilateral orchiectomy and damage to his penis resulting in the inability to have penetrative sex. He is engaged in the conversation and expresses acceptance of his injury. He discusses having a lot of hope of recuperating his penile function. He discusses the frustration and sadness over not being able to have a child, and he reports he does not feel hopeful about finding a long-term partner. He has an adaptive sport he engages in and is employed. The measures suggest his quality of life and sexual health are reported above average. On the scales, he rates his mental health a 20/20 ($t=67.6$) and physical health a 19/20 ($t=51.6$). His global satisfaction with sex is a 10/10 ($t=65.6$), interest in sex is a 10/10 ($t=70$), and sexual function is an 11/15 ($t=53.9$). The measure and interviews are in some ways consistent, but his sexual function reports seem to contradict the extent of his GU injuries.

Veteran 6 has a unilateral orchiectomy with damage to his remaining testicle. He is married but not ready for children yet. He places a lot of importance on the genital injury. He maintains hope about being able to have a biological/genetic child but also has anxiety about the unknown. He continues to look for a new career. He is involved in adaptive sports. The measures suggest his quality of life is average and his sexual health is above average. On the scales, he rates his mental health a 15/20 ($t=51.6$) and physical health a 16/20 ($t=52$). His global satisfaction with sex is a 10/10 ($t=65.6$), interest in sex is a 10/10 ($t=70$), and sexual function is a 15/15 ($t=67.3$). The reports seem consistent between the interview and the measures.

Veteran 7 has significant secondary atrophy to both testicles. He has a child or children from before his injury. He rates his genital injury secondary to his co-morbid injuries, primarily his TBI. He notes that he does not desire to have any more children. He is active with adaptive sports. The measures suggest his quality of life is average and sexual health is above average. On the scales, he rates his mental health a 14/20 ($t=51.6$) and physical health a 15/20 ($t=48.9$). His global satisfaction with sex is a 10/10 ($t=65.6$), interest in sex is a 10/10 ($t=70$), and sexual function is a 15/15 ($t=67.3$). The reports seem consistent between the interview and the measures.

Veteran 8 has a bilateral orchiectomy and total loss of penis. He feels hopeful about an operation to regain sexual functioning. He has not done much dating post-injury, but he reports hope for the future and for GU injury treatment options. He is engaged in community activities and is actively pursuing a career path. The measures suggest his quality of life is above average and sexual health is below average. On the scales, he rates his mental health a 17/20 ($t=55.2$) and physical health a 20/20 ($t=67.7$). His interest in sex rates a 5/10 ($t=47.6$). The global satisfaction with sex and sexual function could not be calculated as questions were inapplicable. The reports on his quality of life seem to be a bit higher on the measure than anticipated when compared to his interview in some regards, especially given the severity of his injuries.

Veteran 9 has a unilateral orchiectomy with significant atrophy to his remaining testicle. He reports much sadness and lack of hope over being able to have biological/genetic children in the future. He reports during the interview experiencing a loss of direction in dating and in his life course as well as a decreased sex drive. He did not report to be involved in community activities. The measures suggest he reports

average to slightly below-average quality of life and above-average sexual health. On the scales, he rates his mental health an 11/20 ($t=42.8$) and physical health a 16/20 ($t=50.4$). His global satisfaction with sex is a 10/10 ($t=65.6$), interest in sex is an 8/10 ($t=59$), and sexual function is a 13/15 ($t=59$). Both measures seem to represent higher reports than he indicates during the interview.

Veteran 10 has a spinal cord injury with hypogonadism (decreased testosterone levels), neurogenic bladder and bowel, and erectile dysfunction. He is married and conceived via IVF. He reports to be doing well overall and engaging in community activities and adaptive sports. However, he continues to struggle with the impact to his genitourinary system and rates this to be more problematic than not having use of his legs. The measures suggest his quality of life is average to slightly below average and his sexual health is average. On the scales, he rates his mental health a 15/20 ($t=50.4$) and physical health a 13/20 ($t=42.6$). His global satisfaction with sex is a 6/10 ($t=48.2$), interest in sex is a 6/10 ($t=51.1$), and sexual function is a 10/15 ($t=52.8$). The results seem consistent between the interview and the measure.

What these results provide is a perspective that, overall, these veterans experience both a positive quality of life and positive sexual functioning. While the results seem higher for some of these veterans than anticipated and lower for a few others, they offer an alternative, standardized way to view a subjective experience. This measure offers a viewpoint to reconsider what the veterans are saying. However, certain reports seem to be incongruent between verbal and written reports. For example, veteran 5 notes that he cannot have penetrative sex yet rates his sexual health as above average. Additionally, veteran 8 rates a high quality of life but discusses unresolved physical needs (i.e., a penile

transplant) and an ongoing need for mental health services for his anxiety. Yet in some ways, this is compatible with the sometimes contradictory statements that occurred during the interviews that also seem helpful or protective in dealing with unknowns (e.g., “This injury is the worst and ruined my self-confidence” and later, “I am okay with the injury.”). The disconnect between oral versus measure reports may be worth further exploration and will be discussed in the following discussion chapter.

Essence of the Phenomenon

The purpose of this section is to coalesce the similarities and overlapping themes and results from the interviews into one story to help convey the essence of the experience. It is intended to provide a short and general overview without acknowledging individual differences, such as the severity of genital injury, whether there are children pre- or post-injury, or relationship status. It uses certain words, phrases, or gist from the research participants’ interviews and is constructed by using a culmination of all ten veterans’ experiences. This combined and condensed story provides the essence of how the phenomenon of a reproductive trauma informs the recovery from combat-related injury while not individualizing the stories. The essence provides an average (comparative to a mathematical mean) for the experience and does not cover the range of injuries or experiences.

“Kaboom!” I was injured. When it first happened, I kept asking my medic, “How’s my dick?” And when I looked down, I saw it “was still attached to me, so I was happy about that.” It all happened quickly. I was “prepared to serve my country and die,” but I wasn’t prepared for this to happen. “Look, what I thought is, ‘I’m either going to die, or I’m gonna to be fine.’ What I didn’t think was, ‘I get horribly maimed.’”

When I got back to the hospital in the U.S., I had a lot of infections and surgeries. Once I was stabilized, I had to relearn the basics, like getting around with my new injuries. I found out the extent of my genital injuries, and I was upset but thought, “I am lucky to be alive.” There was nothing they could do about my genital injury, so I put my energies into other things, like learning how to get around with my new aids. There were gaps in resources to address my genital injury, and I knew “it won’t grow back,” so I dealt with it on my own.

It was “really devastating,” but I viewed my recovery as “a mission to be fulfilled,” so I concentrated on getting better, not thinking about the GU injury. I did not want to talk to a shrink, so I found other ways to deal. Initially, I used humor and prescribed drugs or alcohol to deal with my feelings and discomfort with the injury, but I realized they were getting in the way of the recovery. “I am in the military and not a victim. I am mentally stronger, period.” I continued to put my energies into other things to help me cope.

This GU is the worst injury because there are so many unknowns, and I really can’t process what each means (visual scarring and physical change, sexual functioning, and fertility) until I need to. It is really difficult to process the GU injury, so it gets “put on the backburner” as I address the other injuries. Relearning basic needs and regaining health comes first, and when those stabilize, the issues of the GU injury move more to the forefront.

The GU injury took a lot of confidence out of me. It’s “a heavy injury,” and it “pokes at you.” You first think about the injury in terms of the sexual nature—how is this going to impact my intimate relationships? Then the impact of the fertility comes in.

It is often hard to know the significance of impaired fertility because I don't really know to what level it has impaired my fertility until I try to have a child.

How are you supposed to process this? Who are you supposed to talk to? Nobody really seems appropriate. "It's really a hard topic for me to kind of breach, you know." I am not comfortable talking about it with just anyone. There is not a whole lot that the medical or mental health team can say or do.

"Everyone wonders" about my genital injury. "It's the elephant in the room," but what are people supposed to say? I worry about what others will say—"I don't want sympathy." It's "hard to describe" and talk to others about. I am not really sure what the appropriate response is. However, there are definitely inappropriate responses. People just don't know how to respond. I mostly just don't talk about it. Some people know about it, but I don't talk about how I feel about the injury. The only people who maybe understand a little are other wounded warriors or other people from my unit who were with me when I was injured. It is just something I need to kind of figure out on my own.

In relationship to my sexual functioning, it was again something I mostly had to figure out on my own. They had some sexual health programs that started after I was injured, but I never got to be a part of those. I wondered if I could have sex, and I really had to do a lot of self-exploration to figure out what worked and what didn't. What I learned was that I also had low testosterone because of the injury. It now makes sense because I was just kind of depressed and tired all the time. When I got on testosterone, globally everything improved—my memory got better, I was able to work out, my sexual functioning improved, and I just felt all over better.

The injury had a definite impact on my intimate relationships and engaging in sex was just different. There were adaptations that needed to be made. There were dynamic changes within my relationship too, as my partner would have to help with things I used to be able to do independently pre-injury. I often wonder, “Is this injury just too much for her?”

Thinking about my infertility is something I don’t do much until I am ready to have a child. I never thought, before or during my deployment, about losing my fertility. No one ever talked to us about this or banking sperm, just in case. Maybe I still wouldn’t have banked sperm, but if enough others were talking about it and doing it, I probably would have. It is “really devastating,” but there is nothing I can do about it. It “tore me up inside” at first, but in order to think about having a child, I need a partner. I do wonder what the child will think about it and how I will feel about being a father if I am not able to use my own sperm. Having answers about options for building a family and an understanding of my fertility has helped to decrease my worry about it, too.

I grieved the loss of my career and the loss of physical capabilities. I have been trying to get out of patient mode and get some normalcy back. I had to accept my new realities, but I have still tried to figure out ways to do things I used to do. I also had to figure out how to gain some independence. “Things just take longer now.” As a wounded warrior, physical activities are really important, and adaptive sports have been integral in my recovery. They give me direction, socialization, independence, and help me to be active, like I was pre-injury. Adaptive sports have been a tremendous help, but I have also looked at other ways to move forward. I thought about becoming a parent, but I don’t know if that will happen. I am looking at finding a new career and ways to give

back to the community. “Life is just different,” and I need to accept it and figure out “how to live a successful life, if you will.”

Overall, “I am still recovering” because there are always maintenance things I need to address with my injuries. These injuries “just suck” and are difficult on a day-to-day basis. I’ve begun to accept it and figure things out. It’s a “long, hard road,” but the “biggest thing that helps is time.”

Variance in the Essence

This narrative represents the overall “average” story of recovery from GU injury, but there is also a range of experiences and issues each veteran must face. It is important to recognize the source and consequences of the variance. Some causes are related to the GU injuries, ranging from scaring and shrapnel attached to both testicles to total loss of genitals. The range also includes atrophy of testicles, hypogonadism, unilateral orchiectomy with damage to remaining testicles, and bilateral orchiectomy.

The severity of the injury influences how the individual experiences the injury. Three participants rate other injuries over their GU injuries; the other injuries for the three individuals included TBI (and associated memory issues), “a good hand,” and bilateral leg amputations. Two of these three participants retain both testicles but have impaired function. Other comorbid injuries make for additional variations in the GU experience.

The desire for a child or more children and the relationship status also influence the experience. Two participants report that they do not want any more children, so the reproductive trauma has less impact on the fertility aspect and more on the genital injury itself. Of those who want children in the future, one individual with unilateral

orchiectomy with damage to remaining testicles reports to have hope in being able to have a biological child while another participant feels there is no hope. The one with hope is in a committed relationship while the other participant is not. One participant with loss of penis reports to feel hopeful about his recovery with a penile transplant whereas the other participant shows less optimism and describes the surgery as not being a guarantee. Some of these variations may impact the different possibilities for difficulty or resilience.

Re-Examining the Research Question

The goal of this study is to construct an understanding of veterans' experiences with a military-related reproductive trauma and re-conceiving the reproductive narrative. Within the reproductive trauma and associated narrative, the biopsychosocial factors are considered in relationship to quality of life, and the impact of intimacy and sexual functioning are explored.

The reproductive trauma, and subsequent editing of the reproductive narrative, is complex and multi-layered. The recovery process is ongoing as veterans navigate the changes and re-adjustments required to achieve a higher quality of life. Immediate physiological needs must be addressed prior to understanding and attending to reproductive trauma. In order to grieve losses and realize new realities, veterans work through ways of finding normalcy through adaptive sports and discovering new direction and purpose. The process of understanding the reproductive narrative is iterative and may be revisited at certain developmental milestones or life phases.

Some biopsychosocial factors contribute to risk or resilience after injury and the human agency that is involved in the recovery process. The biological, psychological, and social domains interact and overlap throughout the recovery process and beyond. The reproductive trauma meaningfully impacts biology by changing testosterone levels that affect psychological wellbeing and the ability to engage in social and intimate relationships.

Engaging in sexual relationships is primarily done through self-exploration and self-advocacy. While overall the veterans expressed satisfaction with their sexual function, the sexual nature of a relationship is different post-injury. The reproductive trauma and overall injury can impact self-esteem which, in turn, impacts intimate relationships. Positive intimate relationships as a resiliency factor help with the recovery process while poor intimate relationships can be harmful. The vulnerability experienced post-injury can put veterans at risk for engaging in unhealthy intimate relationships. Acceptance of new limitations and reality facilitate growth in the self and in relationships.

This chapter has discussed the results of the research as well as the preliminary impressions of its meaning and significance. The first section provided a structure for the themes which emerged from the ten men who experienced combat-related GU trauma. The second part reported the information retrieved from the PROMIS measure. A short excerpt then described the mean and reveals the essence of a veteran's lived experience with GU injury and his reproductive narrative. The chapter concluded by revisiting and considering the research questions in relationship to prior results.

CHAPTER 8

Discussion and Implications

To briefly summarize, GU and co-morbid injuries affect physical, psychological, and social changes in veterans' lives. Recovery ebbs and flows with patients' ongoing needs and as veterans grieve the significance of their injuries. The GU injury recovery is postponed both intentionally, due to more critical physical health needs, and unintentionally, as there is a lack of medical resources to reverse testicular dysfunction. Once stabilization of life-threatening injuries occurs and when survival is more certain, the reconstruction of the reproductive narrative can begin. This process involves understanding the GU injury as a reproductive trauma, addressing sexual health and functioning, reconnecting with intimate relationships, and confronting the secondary reproductive trauma of infertility. Realizing the new self post-injury through the grief process and finding new direction and purpose is a way to re-construct the reproductive narrative.

The goal of this research is to understand how these veterans with severe combat-related GU injuries experience the recovery process and how recovery impacts their views on subsequent family development considerations. While exploring veterans' experiences rather than seeking to theorize or to develop generalizations, this study supports the hypotheses that (a) GU injury is difficult to discuss, thus, often ignored; (b) the injury alters intimate relationships due its direct and indirect impact on sexual and reproductive functions; and (c) it affects service members in different ways depending on severity, age, reproductive history, and marital status at the time of the injury.

This chapter aims to convey the significance of the results from this phenomenon and its implications for learning. Several noteworthy thoughts about the GU experience were derived from this study. These include four main points: GU injury as influential and meaningful but insufficiently addressed; ongoing consequences; the commonalities of unique, individualized needs; and overall positive coping. Genital injuries, placed within the context of polytrauma, are discussed with a specific emphasis on reproductive trauma and subsequent infertility. This discussion considers the biopsychosocial exchanges, resilience factors, and interaction with the life course and reproductive narrative frameworks. The relevance and implications of the study related to social work practice, policy, and future research are discussed, followed by limitations and a personal reflection about the research study and the future.

Interpretation of the Results

Overview

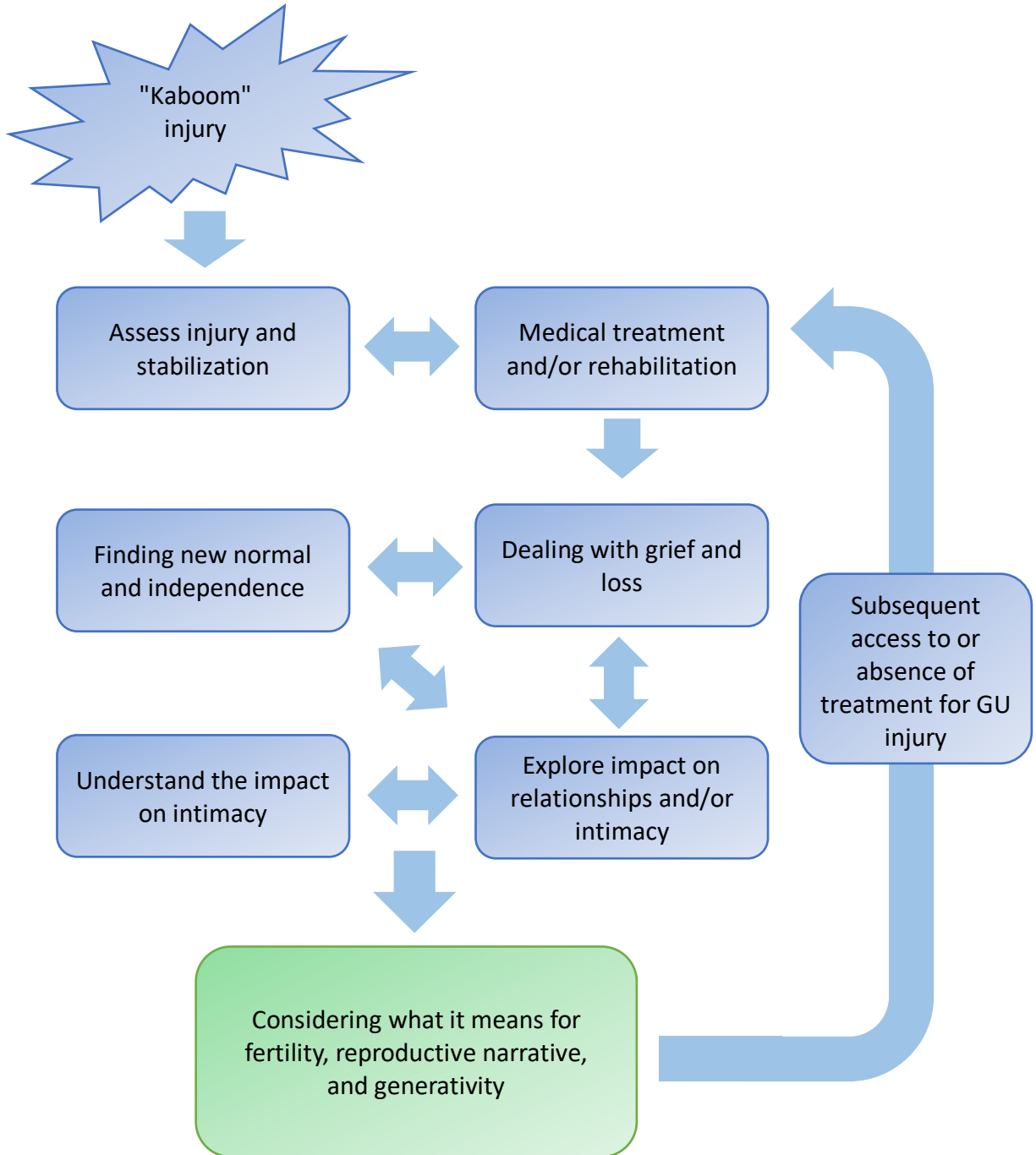
The recovery from combat-related injury is an ongoing process guided by various biopsychosocial factors. Various aspects of quality of life frame the process of realizing and accepting the new self. While the reproductive trauma is often a top concern, the recovery is a challenging and iterative process that occurs as different developmental tasks and life phases are entered. Recovery needs include: personalized care for unique, individualized needs; continuing care for ongoing needs; and a multidisciplinary team to address these needs. Figure 8.1 illustrates the process of recovery from a GU injury. To address the reconstructing of the reproductive narrative, Figure 8.2 expresses the iterative process and interchange experience with a GU injury.

As a basis for the chapter, Figures 8.1 and 8.2 offer the foundation for how the reproductive narrative is reconstructed. In Figure 8.1, the process starts with the injury. In that moment and afterward, the service member assesses the injury, trying to understand the extent of harm as injuries are stabilized. In the beginning, the service member is likely interacting with multiple emergency care systems (i.e., military unit, battlefield care, base camp emergency room, LRMC) in an effort to transport back to the U.S. There is decreased mental awareness due to the nature of the trauma and the necessary pain medications. Once off of the battlefield, veterans are treated via surgeries or necessary interventions and medications while continuing to assess their injuries.

Once back in the U.S., these veterans require inpatient hospitalization that lasts about two to six months before transitioning to outpatient care while often still living in housing at the MTF for several more months. The service member begins to deal with the grief and loss associated with the injury during this time. He engages in relearning basics, dealing with this new normal, and finding independence while simultaneously interacting with peer and intimate relationships. The outpatient rehabilitation occurs over a one- to three-year period, often ending with retirement. With the exploration or consideration of intimate relationships, the service member has a better understanding of how the injury fits into and impacts intimacy and sex. The exploration and understanding then make way for understanding what it means for the future and reproductive narrative. It does not stop with this as these injuries have an ongoing impact on the individual, particularly in relation to testosterone treatment. The testosterone supplement is one treatment that can facilitate effective engagement in recovery as it affects physical and mental health.

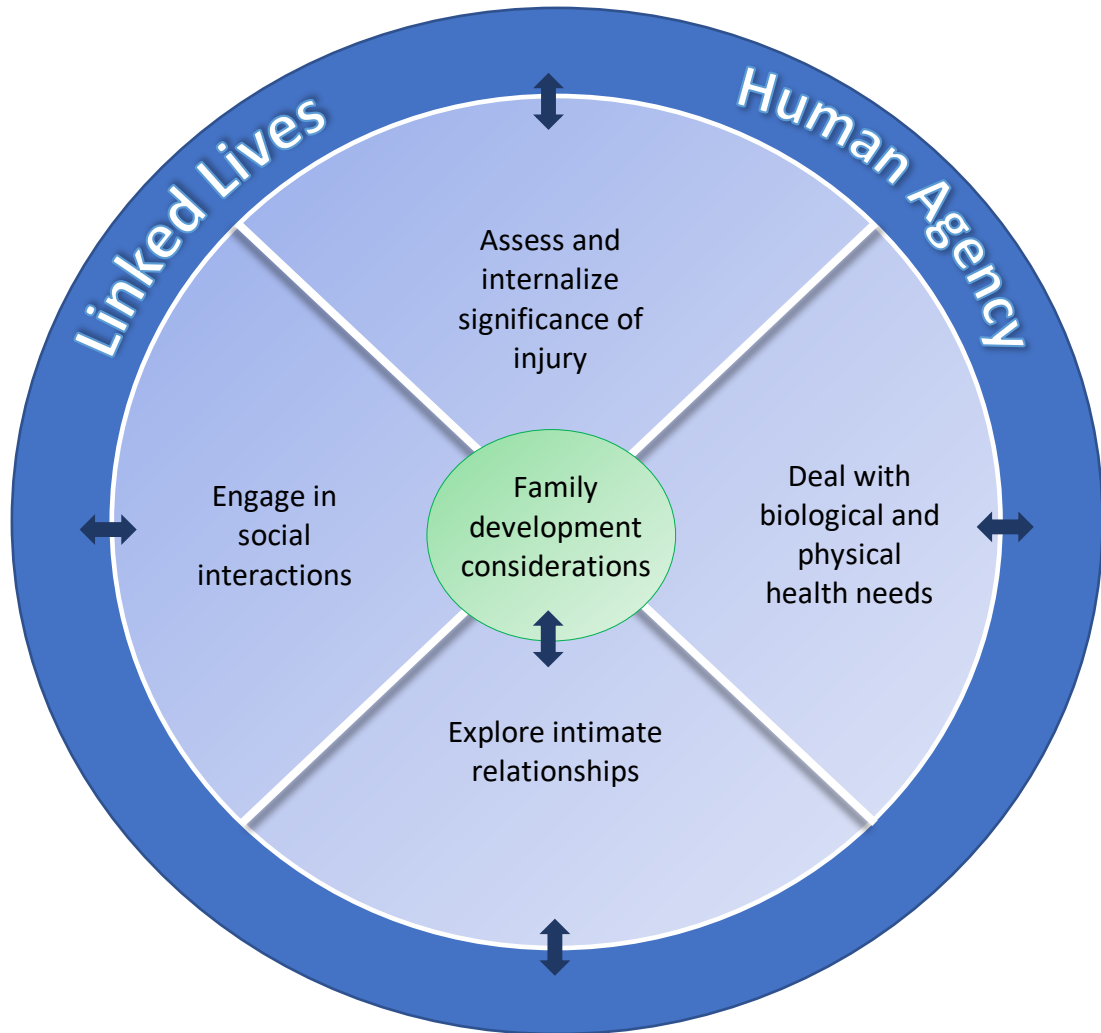
Through this process, the service member is able to put into action his reconstructed reproductive narrative.

Figure 8.1
Recovery from GU injury



In Figure 8.2, there is ongoing interplay between understanding the injury internally (psychologically), dealing with the biological and physical health needs, engaging in social exchanges, and exploring intimate relationships. Outside forces influencing these interactions are linked lives and human agency. Linked lives include those who might not have a direct interaction with the service member but affect him nonetheless. An example includes policymakers who discuss and determine veterans' financial compensation and medical services, such as the temporarily overturned ban on IVF within the VA. The concept of human agency allows the possibility and the power to choose ways of engaging with treatment, and this agency as well as any subsequent choices impact how the four primary factors interact. This agency can include decisions to participate (or not) in mental health services or to take testosterone or other recommended treatment. As the service member engages in intimate relationships, this helps him to consider and begin to edit his reproductive narrative. If the service member is not involved in intimate relationship, it may limit the ability to adequately and effectively address the reproductive narrative. However, even simply considering future hopes and dreams about intimate relationships and family building can assist in the construction of the story.

Figure 8.2
Reconceiving the reproductive narrative



GU Trauma as Influential and Meaningful but Insufficiently Addressed

All of the veterans in this study placed some level of significance to the GU injury. When told “Of all your injuries you have listed, place in order the importance of your genital injury compared to the others,” seven of the ten participants rated the genital injury over other comorbid injuries. Two of the three remaining have children (one pre-injury and one post-injury). The other veteran noted that while he rates it lower than his other injuries:

I don't know. I don't... I can't yet fully appreciate the magnitude of my GU injury, I suppose. To me, my injury is I can't have my own biological children...Um. And that, I'm sure, is a disappointment, but on the other hand I just feel like, I mean, I don't know, had this injury not occurred, maybe I was going to be infertile anyways.

The primary reason most veteran rated the GU injury as more important than other injuries was their belief that they could do little or nothing about it. There was also some acknowledgment of the impact on gender identity as one veteran notes: “Um, and then the other thing is, is then it...not having your penis or testicles as a man, because of our society, that weighs on you heavily. Mentally, it fucks with you every day.” However, gender identity was a less discussed issue overall which is a bit in contrast to Lucas et al. (2014) where GU injury was rated higher because there was lost gender identity with the loss of testicles. While there may have been some covert suggestion of loss of gender identity, GU injury was more about being anatomically different or not normal. Without testicles or a penis, he looks different but doesn't necessarily indicate that he feels like less of a man. Although there is little empirical data regarding the impact of genital injury on an individual's self-image and identity, the prior findings are consistent with the Lucas et al. (2014) study—the only other found published study (Van Der Horst, Martinez-Portillo, Seif, Groth, & Junemann, 2004).

In her anthropological study on wounded warriors' recovery from polytrauma, Wool (2016) writes:

Manhood, in its fleshiest sense, becomes the apotheosis of rehabilitation at Walter Reed because it seems to produce liberal persons, persons who must, as a condition of the “self-sufficient” personhood in this historical and political moment, at least have bodies that are properly sexed even if they aren't properly limbed and who can be made whole through intimate attachments. (p.411)

This illustrates the importance of sexual functioning over limb loss and is in line with the current findings presented here, highlighting the impact of sexual functioning and what it means for recovery. Most veterans expressed concerns over the degree to which their injury would impact sexual functioning. These were concerns expressed from the onset of the injury and—as one veteran notes—given the choice between losing both legs and his penis or both legs and an arm, “I’m like, ‘Goodbye left arm.’”

There was some relief when sexual functioning was assured or regained, and this provided positive steps in the recovery process. One veteran noted, “I mean, knowing, knowing that that was all good to go again was just phenomenal.” He added, “I mean, for the first bit in recovery, between all the pain meds and depression and this and that, I wasn't getting hard at all, which was making it—everything—worse and more depressing.” This is an example of the bio (sexual functioning), psycho (a depressed emotional state), and social (intimate relationships) interchange. Intimate attachments, particularly as expressed through sex, are important for the recovery process. Moreover, another veteran expressed:

I couldn't even have sex with my wife. [Exhale] But I don't know if it's just the injury itself or if it was just like a lot of things. You know what I mean? The depression, the injuries, the no legs. Not being able to do it the way I used to do it. That was a big issue when I—when we first started having sex. It would frustrate me that I would try to do the things that I used to do, and I couldn't do anymore. And so, but at the same token, what was exciting was that we had to try to like figure out new ways to do things, so that was pretty cool. But some of me, part of me, always wanted to do it the way I was before. You know?

The diffused effect of sexual functioning on recovery can cause negative psychological implication for intimate relationships and have a cyclical impact. For example, sexual dysfunction can cause additional psychological distress, impeding intimacy, while psychological distress can result in further sexual dysfunction.

The experience with GU injury is isolating. It is difficult to discuss and describe and brings a special significance to the injury. As one veteran noted:

So that was the thing because it's not something you just tell people about. So if you're, like, you're doing something different, and you know people wanna ask you about it, but it kind of just always, like, felt like an elephant-in-the-room kind of thing to me. And so...but I just never could tell anybody. I just kind of lie about it or something like that. So that was kind of the most difficult part, I think, just because life is different, I guess.

This thought parallels the concept of the mum effect, which refers to social psychological research indicating that people are more hesitant to share good news than bad (Dibble & Levine, 2010). Part of the reason for the mum effect is related to how the information will impact the recipient of the news. While this research is related to an example, such as telling a friend that he did not get a job which will, in turn, cause the friend to be sad, it can be applied to other areas of consideration. The research concentrates on the bad news delivery. With the reciprocal exchange, the bad news makes both the recipient and the deliverer uncomfortable. This phenomenon can translate to grief and loss (Sandberg & Grant, 2017). This veteran is uncomfortable with sharing about his genital injury not only because of the feelings it brings up for him but also because of the feelings that may arise in the receiver. How is the receiver supposed to respond? Are there any good or helpful responses? As this veteran noted:

You know maybe be like, I guess, I'm just, what I mean, I guess I'm afraid of like when people go, "Oh man, that really sucks." You know, yeah, I kind of know that I mean I just kind of don't wanna have to hear it I guess. Plus I just...I don't know kind of how to talk about it sometimes, like you know, if you were to tell somebody that, you know, what are they supposed to say back to you? You know.

This reciprocal exchange between the veteran and the potential recipient of the news is an example of the mum effect. The mum effect also becomes the "elephant in the room," as this veteran describes the GU experience, and is enforced when questions and

conversation are not asked about these sensitive injuries by those connected to or interacting with the service member.

The isolation associated with this injury continues because of the lack of understanding and the relatively few numbers of GU injuries. In addition to the shame and embarrassment associated with the injury, there is a feeling that others do not understand what it is like to have this injury. One veteran illustrated:

I couldn't vent. I couldn't complain up because they didn't understand it. I couldn't complain down because I'm leading them. I'm teaching them. I've got to be the example. I couldn't, you know, vent to my peers because they don't have the same injuries that I did. So I wound up finding that I'm all by myself on this mountain going, um, I just need help, like, who do I talk to?

The available resources to provide support around GU injury have been limited.

The unprecedented number of GU injuries found the military (and even civilian) systems unprepared to provide the necessary physical, psychological, or social support. While there have been tremendous strides to add resources and support for these veterans, such as the Sexual Health and Intimacy Working Group at WRNMMC, many of these advances came after the veterans were already out of the military system and no longer in one centralized rehabilitation center (such as WRNMMC).

What this current research suggests is that there are larger reasons for these injuries not being addressed. A primary reason is a discomfort that occurs when talking about genitals and sexual functioning. One veteran said, "I mean, the VA will ask you a battery of questions like, 'How much do you drink? How much do you smoke? Do you have any suicidal thoughts?' But they've never, never once have they asked, 'Are you happy with your sex life?'" However, if and when this question is asked, it may not fully address the need because of the discomfort. As another veteran discussed:

So that was part of the problem, too, is that every time when I saw Dr. [name redacted], he was like—his things would be—“Are you eating, pooping, peeing, sleeping, and having sex all right?” And so, since it was a bam-bam-bam-bam “Yes,” that was the end of the conversation. That was the easiest way for me to avoid that conversation, was once he got to the—he’d name four. I was saying, “Yes, yes, yes, yes.” Boom! He asked me that question. “Yes.” It’s out of the picture. I don’t have to answer questions about sex anymore.

The issues with sexual functioning continue to go unaddressed, and questions about sexual functioning are inconsistently examined.

A general feeling is described that there was little that could be done to address the genital injury, particularly in comparison to the limb loss or paralysis. Most veterans spoke about how they had prosthetics or wheelchairs that helped them to get around, have independence, and be active. However, with a genital injury, there is no prosthetic or aid that will help. One veteran spoke about getting a testicle implant to help him at least look more anatomically correct, but there was an acknowledgment that this did not solve the infertility. IVF is an option, but it is not a guarantee; it is not an option with a double orchiectomy.

Research is underway to produce regenerative cells that can grow sperm and functioning penile tissue from skin cells (Kime, 2016). When discussing this with one veteran who has a penile amputation, he mentioned this cell regeneration research noting, “Problem was, they can only grow it like three inches. It's as big as they could get it because it was just too complex of a...of a cell structure to grow. I'm like, ‘Hey doc, I'm sorry. I mean, that's great now,’ but again, I wasn't guaranteed that I can have intercourse.” The research is not there yet.

Even in relation to psychological or social supports, there is little that these veterans perceive can be done. As one veteran noted, “There’s no way a therapist can do

a solution for what's going on with my genital stuff, or like our process of having babies or anything like that." The psychological implications are hard to discuss and consider.

GU injuries are put to the "backburner," as one veteran described, during the recovery process. Another veteran noted:

Um, at that time [finding out about the genital injury] was like a shocker, and then I was like...then I just felt like, "Wow, at least I'm still alive." It was like...but I mean I was really early. I was still really lowered up on all kinds of fentanyl and stuff. So I don't think it actually really hit me until well after I got out.

The research suggests that this happens for a few reasons. First of all, as noted above, there were very few resources at the time of these GU injuries. Thus the research and resources needed to become available before it could be addressed. Second, there were often more pressing and life-threatening physical and biological issues to address before the discussion of GU injuries could be breached. Third, because of the traumatic nature of the injury (polytrauma and separately GU), there is a lot that needs to be processed, and the overall injury comes before being able to think specifically about what the GU injury means, especially since it was felt that little could be done for it. Finally, the GU injury has a direct relationship to intimacy (sex) and procreation (reproduction), and these are hard to fully process until the veteran is in a place in life to do so, such as having a partner or being ready to have a child. The challenge is that when a veteran is at a place where he is ready to talk about sexual functioning and reproduction, he is usually no longer in outpatient care and no longer has easy access to the necessary resources to address these issues. As access becomes more difficult, veterans may not know who to go to or how to ask for help about such a private subject as sexual functioning. This research is consistent with previous research that also shows that patients with a physical trauma reported an unmet need for mental health services, either because service members felt

they could get better on their own or were unsure where to go for assistance (Archer et al., 2016).

Ongoing Consequences

The most salient point that arose regarding ongoing needs related to GU injury was related to the availability and use of testosterone supplements. All ten subjects explored this issue, and seven discussed this as both a primary need and huge challenge in their recovery. Three others who only briefly spoke about testosterone needs are unable to engage in vaginal intercourse. Thus, sexual dysfunction was more of a primary ongoing concern to address for these three individuals. There were three main themes within the conversation around testosterone: 1) impact on physical, sexual, and mental health; 2) impact of testosterone on fertility; and 3) challenges to regularly obtaining the testosterone.

Testosterone impacts many facets of life. While testosterone is important in order to address physical and mental health issues, taking testosterone supplements can have adverse and unknown effects on fertility. One veteran talked about his experience with taking testosterone soon after the injury:

And she [the resident doctor] had explained that I was low on testosterone and that we were going to have to do kind of testosterone treatment. And so I remember she—the very next day, she came in, and she was like, “Hey, I’ve got good news. We’re able to give you testosterone injections.” And at that point, at that time, I was like, “Sweet! I’m about to be able to take some testosterone!” Like, it’s gonna be cool. And so I remember, like, taking a picture as she’s giving me the shot and, like, thumbs up and everything. And then I remember about, like—I remember about a week after that or so, I’d taken some labs and stuff like that. The testosterone was working. However, it caused my other testicle to stop working. And so it started—it started to atrophy. Just like, “Hey, your body has testosterone. We don’t have to produce. I’m just going to shut down now.” And it was already—had already been through a traumatic experience, so it was just ready for—to calm down. And so I just remember coming in and she told me, you know—straight-faced and all, she was like, “I’m sorry but, um, you’re not going

to be able to have kids.” And I was like—I was [age redacted] years old. Like, I had literally had spent the last ten years of my career in the military pro—like trying to, you know, delay the kids thing, because I didn’t want to have kids and be in the military at the same time. And so, when she told me that, I was just, like, devastated. It’s like I had this master plan and, you know, one thing led the wrong way, and it just, like, destroyed everything. And so even to this day, like, I tell everybody, I tell everyone that the biggest injury that I’ve had isn’t losing my legs or fingers or the scars on my arms. It’s the actual ability to not have kids. And so that was actually—that’s actually been the biggest—my biggest obstacle since because there’s nothing I can do that can change that. Walking in prosthetics, you have to train. You have to do this, you have to do that, in order to get better. But with—if you lose the ability to have kids, you're not getting it back.

While the veteran did need testosterone, it ended up having an adverse effect, and he reports it further impaired his fertility. Two other veterans, who have gone on to successfully conceive with IVF, also spoke about either freezing sperm prior to going on testosterone or needing to get off it and take other medications to try to stimulate sperm production with potential unknown outcomes.

Access to testosterone supplements continues to be an ongoing issue for this population. One veteran discussed figuring out a way to continue to get his needs met by finding a civilian doctor who was close to him and obtaining regular monitoring until the veteran had a better understanding of how he feels when being administered regular testosterone. He continues to assess his mood, and if he starts to notice changes, including fatigue and generally lowered affect, he knows when to go to the doctor to adjust testosterone.

In addition to obtaining testosterone, it is important to know and understand when testosterone levels might be off, and this takes time and strong individual advocacy skills. One veteran spoke about being unable to get testosterone at the VA. As a result, he had to drive “five-hour[s] round-trip, once a week” in order to acquire the testosterone.

However, the drive came to be too much, and he stopped going, increasing his depression and further impairing his recovery process.

These ongoing needs from GU injury have an impact on psychological well-being and relationships, particularly intimate relationships. Jackson (2017) described the ongoing effects and nature of having served in combat:

The experience of war, of direct combat, is trauma. It leaves a psychological residue on each veteran; call it mental plaque. Veterans carry this as baggage throughout their lives. The mental trauma experienced determines the level of encumbering psychological residue. It is a sliding scale, but at some point along the continuum, it reaches beyond mental baggage and enters the horrific and debilitating realm of post-traumatic stress disorder. But make no mistake, all combat veterans carry a lasting, indelible imprint of the horror of war. (para. 2)

There is a continuum of how the veteran experiences the trauma of war. For some with the GU injury, the psychological effects are more challenging, and all these subjects continue to experience lasting psychological effects from their injuries. This sentiment sums up the experience of these veterans: the reality is that their “continuing sacrifice” is apparent as they deal with what it means to be a wounded warrior. This is particularly true with the fertility aspect to the injury. There is a continued sacrifice that happens and is front and center when the veteran is ready to start a family. There are persistent needs that arise with GU injury that remain well after a patient is out of the military system and has ended acute care rehabilitation.

The Commonalities of Unique, Individualized Needs

Each veteran has a unique experience with his GU injury. In this study, the GU injuries vary from injuries directly related to the blast to atrophy as a result of other medical issues or treatment. The GU injury creates various issues of impact on the relationship. For example, for some there is still a chance to have a genetic child if they

want to, even if they need IVF to conceive while for others there is no hope to have a genetic child and alternative family building options may need to be discussed.

Interestingly, those who are sterile (with a bilateral orchiectomy) and know that they cannot have children seemed to demonstrate decreased anxiety about the infertility injury compared to those with less severe GU injuries and who still desire children. There is not enough information in this study to draw inferences about this as there was evidence of psychological distress for most who had a double orchiectomy, but there also seemed to be positive coping among these veterans. However, the two individuals with a single orchiectomy and significantly atrophied or damaged remaining testicles seemed to present with the most anxiety about infertility.

The veterans spoke about not always understanding who the different people were on their care teams or what their roles were. Different supports were put in place and not always wanted. There were times when the veterans encountered many different people, and the veterans reported that people (including volunteers in the hospital) did not always remember them as individuals. What has been taken from these experiences is a need for veterans to be part of a more consistent and permanent comprehensive care team and to have the opportunity to self-identify needs. There is a need to feel heard, remembered, and to understand the care being provided as well as the options that may be available. A lasting multidisciplinary team is important, and it seems critical that team members explain their individual roles throughout the care process, especially with regard to any further referrals for additional care and services. Providing veterans with an understanding of each person on the team and his role is helpful for both immediate engagement as well as for knowledge of needed resources after leaving the military.

All ten veterans reported to either be taking testosterone or needing it. However, there are unique considerations for various forms of administration and drug levels. As one veteran explained as he realized these unique variations:

I've got to do all this research on my own. He didn't explain that, you know, we measure testosterone essentially at the 700-point scale...If you're at this level, you're good to go. At below this level, you're bad. It's different for every single guy, every single guy you know. A hundred 20-year-old guys could have a hundred different testosterone levels, so he never explained that their scale is an average.

Yet, the levels are not always individualized as another veteran explained: “But now going forward, we've checked my testosterone levels again, and my current testosterone levels are like right on the edge, just over the lowest point on the scale. And they're like, ‘Oh well, it's still above that, so you're good.’” He continued, explaining that he feels the impact of the low testosterone, but “that's a fight for another day with them so [laugh].”

Overall Positive Coping

While the GU injury is significant, the overall experience with the injury and the care received seems to suggest positive coping. As was suggested by Lucas et al. (2014), humor proves a useful skill in talking about the injury with others. Although generally the veterans report that they are doing well, there seems to be some discrepancy between different reports in the interview as well as in the comparison with the PROMIS measure. There are several unknowns throughout the recovery process with sexual functioning, intimate relationships, social interactions, and fertility/reproduction. When specifically dealing with infertility, the idea of protective ambivalence arose from the veterans' reports. Protective ambivalence means that there are contradictory feelings about becoming a parent that are helping the veteran to cope. For example, while one veteran expresses acceptance and less importance around the sterility as compared to his other

injuries, he may not fully appreciate what this means until he is ready to have children. There is some contradiction as he recognizes he would like to be able to raise his “own child” and pass on his genes. It has not always been easy for him to discuss, and there is some self-consciousness or embarrassment about the injury as he mentioned at certain points in the interview, such as requesting a pseudonym when being interviewed about his genital injury. Although reportedly less important, the genital injury is beyond his control. Thus, there is ambivalence about the genetics, and there has been a process for him to feel more comfortable with being sterile.

Another veteran expressed a protective ambivalence as he described the recovery process in relation to not being able to have a genetic child. He mentioned how the injury and infertility “kind of really tore [him] up inside” because he didn’t want to adopt and wanted “the old way.” However, at another point he said, “Um, I just can't have kids. Um, I don't know if it really does bother me all that much. I guess beforehand I wasn't married or anything, so I didn't know if I really wanted kids one day.” It is helpful to be able to see and understand both sides of the infertility, such as feeling sad about not being able to have genetic children and being accepting of the uncertainty that exists in deciding whether children are even wanted. Although infertility may play an important role for him, his ambivalence is a protective factor in dealing with this uncertainty, and he reports high on the quality of life measures overall.

As Frankl (1946) notes about his trauma of living in concentration camps during World War II, “...everything can be taken from a man but one thing: the last of the human freedoms—to choose one’s attitude in any given set of circumstances, to choose one’s own way” (p.6). This sentiment can be seen in the veterans’ protective

ambivalence, as well as in other areas. Noah described this: “Don't ever let your injury define you as a person. If you do, you're a victim, and we're not victims. We're in the military and not victims. We're mentally stronger than the average American citizen, period. Don't allow your injuries to dictate who you are.” The psychological construction of the injury can help or hinder in the recovery process.

While the GU injury is meaningful for the veterans, some rated the GU as less significant than others did. Similar observations were made to those of the Lucas et al. (2014) study as factors that contributed to rating the GU injury lower (see Table 8.1). While a hand injury was described by one veteran and a TBI by another as rating over the GU injury, there were other factors that were observed that seemed to help lower the score of the GU injury. These two veterans have less severe GU injuries on the spectrum as both have injury or atrophy to testicles but still have intact testicles. The other consideration is that the more the veteran talked about the GU injury, particularly because of the support of an intimate partner, the more comfortable he became with the injury.

Table 8.1
Factors observed in those who rated the GU injury as less significant

Lucas et al. (2014)	This study
Going on to conceive a child post-injury	Going on to conceive a child post-injury or having completed family building prior to the injury
Being able to achieve intercourse post-injury	Being able to achieve complete sexual function post-injury
Sustaining disabling hand injuries that impact day-to-day functioning more than GU injury	Having a partner who is comfortable with the GU injury and infertility

Resilience Factors: What Helps with Recovery

Choosing one’s attitude and own way can be challenging, and there are several noteworthy resilience factors that were observed and should be considered. The first one

is taking the recovery one day at a time. As one veteran noted, “I’m just sitting there like, ‘How do I make it through this?’ And it was more just like, you know, taking it a day at a time, I guess.” This sentiment helps with dealing with the overwhelming nature of the polytrauma. Taking it one day at a time prevents jumping too far ahead with the recovery and trying to answer unknowns.

The second factor is finding independence—being able to get around and engage in social interactions in ways parallel to pre-injury life. Adaptive sports are a primary and useful way to regain some of this independence. As a veteran once said, “You join the military because you enjoy the outdoors and being active.” An injury can dramatically change the ability to be outside and active. Adaptive sports help with recovery as they provide some freedom and facilitate regaining an active lifestyle.

All veterans spoke about the importance of staying active, and only one veteran discussed not currently working out or doing some sort of adaptive sport. That one veteran reported having more difficulty with his recovery, being “depressed,” and having difficulty finding motivation. Other veterans discussed using adaptive sports, such as skiing, ice hockey, biking, and skydiving. These returned structure to the veterans’ lives and offered parts of the old life. As one veteran discussed:

And the only time that I really didn’t have a lot of backsliding [in recovery] was when I was playing hockey. And that was just—because it was almost like being in the military. It kept me occupied. I was with a team. We had a common mission. Everybody that was playing wanted to get better and wanted to, you know, train and wanted to evolve from when they started. And it’s the same thing in the military. You’re going to war, so you want to train to be the hardest fighting enemy for your enemy.

He also noted feeling the social support from other individuals who are dealing with their own injuries as well as needing to participate in adaptive sports that possess elements of the military culture (i.e., unit cohesion).

Southwick & Charney (2012) name realistic optimism and belief in a brighter future as igniters for resilience and helping with other areas of resilience. Similarly, those veterans who possess a hopeful outlook and feel optimistic about options available to them report a higher quality of life. For example, one veteran who is unable to have penetrative sex reported that he believes that he can work to recuperate his penis and feels optimistic about it. Interestingly, the two veterans who were waiting for penile transplants expressed opposite views on the outcomes of surgery. The one veteran who had optimistic views of “being normal again” and being able to regain sexual function post-injury reported a better quality of life as evidenced in the PROMIS measure compared to the other veteran who was suspicious about whether the penile transplant would return sexual function to him.

As infertility literature suggests, “failure to acknowledge and appropriately grieve losses of infertility has an impact on a couple’s long-term adjustment to infertility as well as prospective decisions regarding treatment and family building alternatives” (Covington & Burns, 2006, p.9). Effective grieving through mourning the loss of one’s old life and how the future was envisioned is advantageous. However, this can be complicated with traumatic grief where there is a “*sudden loss* of significant and close attachments” (Pivar, 2004, p.75). While unit cohesion remains important, traumatic injury pulls a service member instantly out of deployment, causing limited access to these important bonds that can aid in grief. It creates mostly unavoidable isolation and lack of

closure to the traumatic grief. In the beginning, intense feelings may be compartmentalized and/or buried for another day and can be a normal part of the grief process (Pivar, 2004). Effective grief work is important, and without it, symptoms can become more problematic, complicated, and complex.

With polytrauma rehabilitation, a mentality can set in where the rehab focus is seen as being similar to another “mission.” The feelings are temporarily masked to be able to cope with this traumatic injury. This helps the veteran move through the immediate trauma and deal with the feelings once the more immediate needs are addressed. One veteran acknowledged avoiding some of that grief:

If you had asked me, "Hey, I'm a psychologist and it seems like you're not...no one's really addressing the psychological impact of your injuries," I would've been like, "Yeah, well there aren't any psychological impacts. Like, my legs got blown off. I'm a soldier. What else is there to say? You know, I'll move on." But now as a much more mature, wiser person, uh, I look back on that, and I'm like, "Man, I think that was a missed opportunity."

He talked about later going to counseling and dealing with the grief of losing his career in the military. Grief is inevitable and a positive factor in being able to move forward and reconstruct the reproductive narrative. Grief is a process, not a state (Zisook & Shear, 2009). The process includes adaption to the loss and continual changes from the injury through an internal experience and external behaviors (Doka & Martin, 2010).

Connecting to new people and existing linked lives is another protective factor. The use of social supports and intimate relationships helps to provide normalcy and feelings of acceptance and love despite the injuries. An example of this was shown when one veteran described:

But I've never—I've never—I've never heard [my wife] say something like, "Your legs are sexy," or "I love your scars," or something like that. And so the other night my brother had a girl over, and she had a friend over. And the girl

right off the bat immediately was like, “Oh my god, can I check out your scars?” And I’m like—I was like, kind of like taken aback. I was like, “What?” She was like, “Yeah, can I look at your scars? I love scars.”

What this social interaction provided was a feeling of acceptance and appreciation in spite of and because of his injury. The scars were a good thing and not something to be embarrassed by. She normalized the experience for him. This social interaction seemed to cause a cognitive shift for him and how he viewed his injuries.

Another veteran discussed this acceptance in the social and intimacy context in relation to deciding whether to do a penile transplant:

And she was the only person that ever sat me down and was like, "Do it or don't do it, I support you no matter what." She goes, "I love you because of you. I don't love you because of what you have down between your legs." Only woman I'd ever heard ever tell me that.

This unconditional love and acceptance regardless of the penile amputation help with his resolution of the injury. Having a supportive partner facilitates the recovery and provides a foundation for resilience.

Philosopher Frederick Nietzsche wrote, “He who has a why can endure almost any how.” Research around stress and trauma supports the idea that finding meaning and purpose assist in creating and fostering resilience (Southwick & Charney, 2012). The idea of finding a new direction and purpose as a protective factor became evident in the interviews. One veteran spoke about his experience immediately after the injury:

I just really dove into what I’m doing now, which is basically investments. And I just kind of dove into that, really hardcore. So I just bought tons of books on it. Took a lot of the money that I had made from being—getting an injury and getting my lump sum payment from the military—I just kind of took a lot of that and dumped it into the market, and was basically trading my—my money that I got from getting blown up and everything.

He has since gone back to school to pursue this passion. This search to find a new purpose and career was discussed by many. One veteran who is struggling with his identity acknowledged that he does not know what to do next since the injury likely prevents him from being able to obtain jobs he initially envisioned. The direction and purpose ranged from becoming more involved in children's lives and finding a new career to engaging in sports and volunteering in the community.

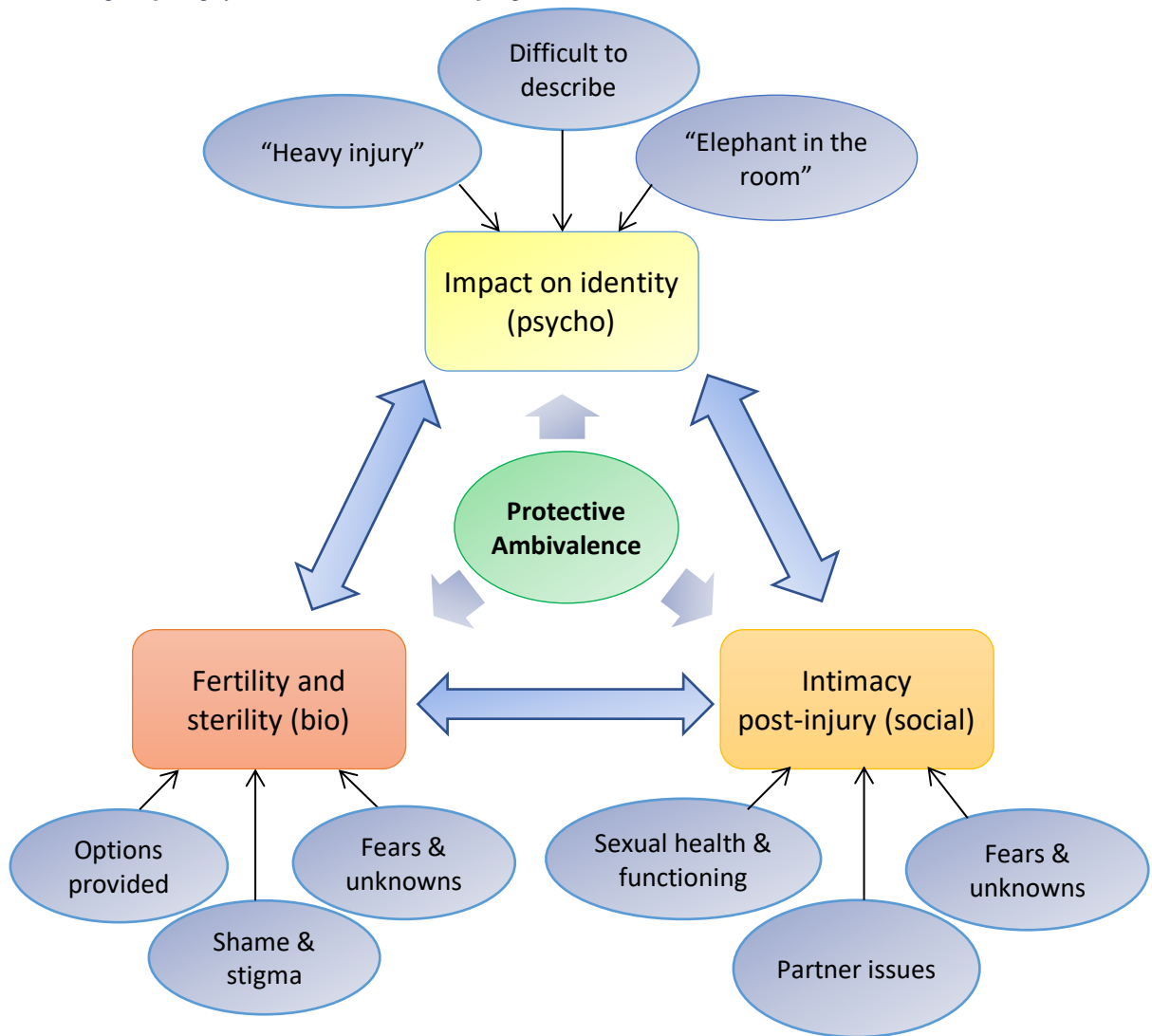
Southwick & Charney (2012) write, "Donald Campbell and colleagues in the Department of Behavioral Sciences and Leadership at West Point teach future military commanders that it is critical for their soldiers to understand and embrace the significance of their duty, service, and sacrifice" (p.184). Having meaning and belief in the mission derives better benefit. Approaching the recovery as a mission to be fulfilled helps with the recovery process. As one veteran noted, "I felt that as a wounded soldier I had, um, you know, a responsibility to not let this destroy my life," and "So for the first 11 months post-injury [while comrades were still deployed], I still very much felt like I had a responsibility to, uh, you know, persevere and be as successful in the recovery as I could be because I owed that to my soldiers." There is a belief in the duty and service as a military member.

Several other veterans also discussed understanding the duty and sacrifice in relation to their injuries. While one veteran described the injury as "devastating," he added, "And it, it sucks, but, you know, I do understand. I understand my signature on the contract. I understand that I shook hands with other people. And I said, 'Under the contract, I will do this service.'" The conviction he felt in his military service helped provide acceptance and positive coping with the injury.

Reproductive Narrative Reconceived

The process of changing the pre-injury reproductive narrative is an iterative one that takes in different parts of the recovery process and life phases. (Refer back to Figure 8.2.) The veteran understands the significance of the GU injury and figures out what this means for his identity and psyche. As he is doing this, he begins to understand and address his physical needs, explore intimate relationships, and engage in social interactions. These are all occurring fairly simultaneously. There are outside forces that impact this, including linked lives (social context) and human agency (one's own choices). As the domains interact, the veteran thinks about what the infertility aspect means and considers different ways to build a family. These biopsychosocial domains interact in the veteran's effort to understand and deal with the unknowns of the reproductive narrative. See Figure 8.3.

Figure 8.3
Example of biopsychosocial interactions of reproductive narrative unknowns



Intimacy post-injury has psychological and biological factors. For example, this interchange incorporates the previously mentioned diffused effect on sexual function. The physiological causes of the sexual dysfunction can result in psychological distress, which impacts the way the veteran interacts with an intimate partner. When infertility is added, sex can lose some of its meaning because one cannot naturally procreate, creating further grief and sadness and subsequently engendering unknowns: How will a partner act when I tell her about my GU injury? Will I have any viable sperm if IVF is an option? Will I ever find a partner? One veteran explained why the GU injury is the

worst injury for him: “Well because I like children, and it's not, even though I have the important part of my left testicle, it's still not guaranteed, you know?” In order to deal with these unknowns, protective ambivalence develops as the veteran works to choose a new attitude and a different approach in his reproductive narrative.

The GU injury can have a unique impact on identity. Male genitals are often associated with “strength” and “courage” as indicated by sayings such as “having balls,” and this, in turn, may potentially cause a man with damage to the genitals to have a diminished sense of self (Gardino, Rodriguez, & Campo-Engelstein, 2011, p.154). Overall, the veterans seemed to report a continued masculine identity demonstrating male vigor through engagement in things such as adaptive sports, like ice hockey. While it might not take away the masculine characteristic or identity, particularly the military identity related to virility, the GU injury “kind of pokes at you, if you will,” as one veteran noted.

Some research suggests that infertility is less devastating for men than women and that sexual dysfunction and change in the look of genitals are viewed as being more highly devastating and humiliating experiences than infertility (Gardino et al., 2011). However, what is worth noting is that this study looks at college-age students, 18-22 years old, who are at a time in their lives when most men are trying to prevent pregnancy. Fertility may be less valued because of this. Sterility may become more of a challenge and “humiliating” as one gets older and is ready to procreate. One veteran addressed this as he spoke about his genital injury and wanting to be “normal” again and how the sterility had become more of an issue for him as he aged. He said, “Back then when it first happened I thought...you know, being younger, might have been the penis

[amputation as worse]. Now I think it might be more the not being able to have kids because now I'm a little older now.” The story can evolve as one ages, enters into a new developmental stage, or finds a romantic relationship where there is a desire to grow a family together.

Linked lives. The injury impacts not only the wounded warrior; it impacts his comrades who were with him at the time of the injury. The transition from being deployed to injured status and medical care immediately disconnects the service member from his unit. While remaining unit members may have guilt about the nature of the injury event or they may wonder about the wounded warrior’s status, there is always a lost or greatly diminished connection. As unit cohesion is an essential element of military culture, the loss of the attachment to each other likely impacts both the wounded warrior and the remaining unit military members. Reconnecting with these comrades was discussed as a facilitator in the recovery process by several veterans. One veteran recounted this experience:

And it’s interesting talking to a number of guys. One of the guys that was in my squad, he was one of the guys working on me after I was wounded. And he helped carry—he was one of the guys helping carry the litter down the mountain, down to the medevac helicopter. And at one point while they were carrying me, I remember they—one of the guys—or I guess he tripped and fell and the litter dropped, and I hit the ground. And he, actually always until I was able to talk to him, he always blamed himself for my spinal cord injury because he thought that’s what caused it or made it worse, or something like that. And I was able to a number of years later kind of clear things up. Like, “No, you—the damage was already done. You didn’t cause this.” That’s been really good. Reconnecting with a number of guys, too, it’s been good for them.

The reconnecting helps not only the wounded warrior, it helps his comrades. This process impacts the interactions in the service member’s reproductive story and becomes an outside influence on the evolution of reconstructing the reproductive narrative.

The reproductive story is ongoing, shaped and influenced by the recovery process from a GU injury, whether it is social interaction, human agency in choosing how to navigate the present, or addressing ongoing physiological issues. The GU injury will likely impact others, not just the veteran. It will impact the partner and how they decide to grow their family (or don't). It will impact any resulting child who comes into the family (whether through adoption, IVF, donor sperm, etc.). Even when IVF is an option, it is not a guarantee, and this can become another emotionally straining event. One veteran who was successful with IVF spoke about having extra embryos and his desire not to destroy them, but if there are more embryos, then he and his partner will likely be able to use them. IVF is not a cure-all, but it certainly does help provide some comfort to these veterans who are grateful to have it as an option. However, the veteran and his partner will likely have to decide what happens with the extra embryos. This couple has already discussed donating them to another family, and what may not have been considered is that this process will be another piece of the reproductive narrative, impacting many other linked lives, including them, their children, and any children who result from the remaining embryos.

Relevance and Significance of the Study

This study offers unique and exciting information for a more comprehensive approach to the treatment and long-term support of U.S. service members with GU injury. Examining the essence of the experience with infertility and GU injury allows a greater understanding of what this means for psychosocial treatment, social work policy, and areas of needed research. There is very little qualitative research published about the

psychosocial adjustment and impact on the individuals with these unique and private injuries for U.S. service members.

The one study that does examine this issue and is the genesis from which this current study is rooted discusses U.K. service members, and there may be a difference in the way the U.S. and U.K. military systems function and in the treatment received (Frappell-Cooke et al., 2013; Lucas, 2014). In the Lucas et al. (2014) study, a number of the participants had sperm salvaged post-injury and were able to go on to conceive because of this process. It recognizes that patients who were able to come to terms with the injuries were those who received early fertility intervention and attempts at sperm salvage and fertility preservation. No participant in this current research reported sperm salvage post-injury, and sperm salvage is not allowed in the U.S. without consent (Grady, 2017). However, there seem to have been some recent improvements in sperm salvage for U.S. service members as seminal vesicle sperm aspiration has now been used for six patients within 5-12 days of initial injury (Healy et al, 2016). Two couples have had IVF with this procedure with only one being successful, and the four others have banked sperm (Healy et al., 2016; McCarren, n.d.). Further considerations for practice and policy as a way to address fertility preservation and sperm salvage should be considered.

Implications for Social Work Practice and Treatment

Competence and cultural awareness are two important ethical principles for social workers (NASW, 2017). This research provides opportunities to further our knowledge and understanding about military-related GU injuries and offers suggestions for implementing some important best-practice principles for a consistent multidisciplinary approach to long-term care following GU injury. The military culture is an essential

context for understanding these injuries and what it means for social work practice to address the traumas and the recovery process. Three major themes to consider in practice and treatment are: recognizing and decreasing shame and stigma related to the injuries (micro-level); talking about and acknowledging the injuries (meso-level); and clearing of the mum effect (macro-level).

How do we decrease stigma and shame around these injuries? This question is primarily focused on the effects of stigma and shame on individual veterans and each veteran's ability to engage in immediate and direct social interactions involving family, friends, and medical providers.

How do we engage veterans to talk about these injuries? This question is meant to examine interactions with the surrounding community. This can include the military treatment facility, non-profits, and the ways in which individuals themselves interact with micro-level players in these communities. One veteran addressed this in terms of his public speaking engagements:

Everybody wants to come up and make me feel like I need to be a baby or something, and I'm like, "Why are you crying? Why are you sorry? There's nothing to be sorry about. I'm not sorry. I'm alive. I'm above ground." You know, and I thank 'em. I know where they're coming from, but I don't need to be treated with pity. I mean, but that's how people automatically default to.

Addressing "pity" and turning it into a more effective conversation where veterans feel supported and appreciated rather than pitied is an important consideration.

How do we eliminate the mum effect? This question addresses the need for society as a whole to engage with and better understand the existence, nature, and impacts of genital injury. As the veteran talks more about the injury, he becomes more comfortable with it. How do we start this conversation in the context of societal

interactions and the silent stigma associated with the service member's internal embarrassment?

To address these three questions, there needs to be an expanded awareness of the biopsychosocial issues associated with these injuries. Knowing the question permits veterans and their communities to come one step closer to being able to answer it. The three questions are interconnected and engaged with each other. For example, if the veteran is feeling shame and stigma, he is less likely to talk about it, and in being less likely to talk about it, there is a perpetuation of the mum effect. On the other hand, if larger communities are unprepared and do not engage with the veterans or provide a space to discuss the injury, then the veteran will be less willing and able to speak about the injury. The answer may lay in the meso level where those interacting directly with the veterans can start to articulate the needs on a macro level. Having a conversation and an informed understanding of these three themes can provide a pathway to addressing the GU injury earlier in the recovery process.

One important experience discussed by the veterans in this study offers a vehicle for addressing shame and stigma, allowing acknowledgment, and promoting society's response: the use of group adaptive sports. This is a place that allows for forward movement in recovery because of its equal social interactions (versus rank in the military) and shared experiences. The stigma of therapy can be circumvented by incorporating it into things that are more socially acceptable and by not forcing traditional talk therapy.

What group adaptive sports offer is a form of social support which helps to address a couple of needs. First, it helps decrease isolation that can be felt with chronic

conditions. There is a shared experience in dealing with the handicaps associated with an injury. Second, there is a focus on having a concrete task to accomplish that frees the mind and distracts from the realities of the injury. The sport is not focused on talking about the feelings associated with the injury. This allows the veteran to become comfortable with his teammates, comfortable enough to potentially open up about other things outside of the sport. It takes the pressure off of sharing. Improvement can be made, though, by utilizing organizers, volunteers, and staff who are trained in mental health approaches to facilitate veterans' opening up and talking about the injuries. By having a safe and open space to discuss the injuries with the help of trained professionals, it becomes a place to practice talking about the injury. The practice helps the veteran become more comfortable and find the words to discuss his injuries.

To offer a parallel example, I provide ongoing support groups for couples using third-party reproduction (primarily donor egg and donor sperm but including double donation or donor embryo). One issue affecting those who use third-party reproduction is the need to consider the future importance of talking with the resulting child (or other family members) about origins. Many people struggle with the questions of if, when, and how to tell a child or others about the need for a donor as there is often shame and stigma associated with it. The group—led by me, a mental health professional and social worker—provides a safe place to talk and offers answers and resources, as needed. Coming to the support group affords couples the opportunity to meet others, to have a shared experience, and to begin to practice and become more comfortable with talking about the path they are taking.

Group adaptive sports can be seen as a perfect opportunity to add the benefits of a support group, and not calling it a “support group” provides a chance to circumvent the stigma of “mental health” and “support groups.” This helps the veteran and the community supporting the veteran to open a conversation.

Another treatment and practice consideration is related specifically to reproduction. Addressing ways of providing access to and knowledge about fertility preservation prior to deployment, as well as sperm salvage after injury, can help with GU injury recovery. For example, veterans who have at least one remaining testicle need to discuss freezing sperm, especially when he will be put on testosterone. Additionally, one study notes anecdotal evidence about previously fertile men who experience severe blast injury without genital injury experiencing subsequent and secondary testicular atrophy and azoospermia (Janak et al., 2017). Providing fertility counseling and reproductive mental health guidance and options as an early intervention may help the veteran to grieve, decrease his anxiety, and encourage hopefulness.

Frappell-Cooke et al. (2013) advocate a care pathway that encourages psychological support for genital injury patients regardless of “positive impact for psychological impact” (complex grief); this includes trauma-focused cognitive behavioral therapy (TF-CBT), CBT, and eye-movement desensitization and reprocessing (EMDR). These GU injuries are profound and forever alter a veteran’s life. Fertility counseling services, regardless of a mental health diagnosis, can help to incorporate the new realities of significant injuries into the reproductive narrative. Most people have some conceptual idea that donor sperm, IVF, and adoption are family-building options. However, most have yet to explore what this means for them in building families or to consider concepts

such as birth parent, sperm donor, creation of embryos, and attachments between parent and child in alternative family-building options. Yet, growing a family can be viewed as a life-affirming way to overcome the injury. The reproductive story model and framework can facilitate healing on a clinical level.

Implications for Social Work Policy

There have been improvements in policies covering service members with fertility-impairing injuries. In 2017, legislation was brought forth to temporarily overturn a ban on IVF in the VA system that dates back to 1992 (Caballero & Covington, 2017). This legislation provides help with family-building methods including IVF and adoption for service members who have a service-connected injury that impairs fertility. However, this is only temporary relief until September 30, 2018. Without further advocacy and work, it will lapse (VA, n.d.f).

In my clinical practice, a veteran's wife once said that having a baby felt like the last thing on the checklist to prove that she and her spouse have beaten the combat-injury that has so drastically altered their lives. This couple has been unsuccessful and has struggled to figure out what the next chapter of their reproductive narrative will be. Thus, the injury continues to win, and the infertility is a continuing sacrifice that they are making and an unaddressed need.

Infertility is inherently stressful, and even when IVF with autologous gametes is an option, it is not a guarantee and brings certain stressors with it. As indicated previously, three veterans have utilized IVF with two having successful outcomes. All three veterans described IVF as being physically and emotionally demanding. One

veteran recounted being ready to have a child and going to a fertility clinic to learn more about it:

Because when we did the initial orientation meeting at [name redacted] fertility clinic—and just coming out of that just completely overwhelmed as far as, just, them breaking down the IVF process and then talking about, “Okay, well this is how much it’s going to cost and everything.” And coming out of that—both of us came out of it completely discouraged because we were just like, “I don’t know how the heck we’re going to even come close to financially doing this.”

He noted that due to a push for funding in Congress and continued barriers with the VA ban, the fertility clinic offered a 50% discount through the #IVF4Vets program, and other family and friends gave money to help so that they could attempt IVF.

While another veteran described the IVF as relatively “easy” for him, he felt otherwise about the egg retrieval process his wife underwent:

So that part was really stressful. And then, you know, going through the process of getting to where we could implant the fertilized eggs was quite a pain, too. So she was taking shots every day and, like, two different shots I think every day—twice a day if I remember right—and just kind of doing all the different stuff that needed to be done in order to even get the eggs implanted.

The GU injury impacts woman in these relationships in a unique way as she now becomes the patient.

The findings of this study suggest that the infertility is a challenging piece to the recovery and is often held in abeyance until the veteran is at a point where he is ready to have a child. The struggle is that people are often unaware of the resources available to help them as most of them are further out in recovery and no longer actively connected to the military or military health care. Another consideration in addressing the recovery for infertility—in addition to providing access and financial support for family-building options—is providing fertility counseling by a mental health professional, offering

support and resources to help veterans navigate the psychosocial implications of infertility and ART, adoption, or living childfree.

Implications for Future Research

This research provides new insight because it discusses the essence of the biopsychosocial experience of sustaining a genital injury with a focus on infertility. More research is needed to address GU injury prevention, fertility preservation and salvage, and the biopsychosocial impact of penile transplant and/or reconstruction. Research is also needed on the impact of impaired fertility on female service members and veterans. Moreover it would be interesting to compare the recovery from GU injury in the past when there were fewer resources to recovery today.

While most participants reported information consistent with the results from the standardized measure used in the study, the measure—particularly as it relates to sexual functioning—did not add new information to these study results in the way that was anticipated. All respondents reported having normal to above-average global satisfaction with sex life, despite reporting that the injuries did impact their sexual relationships. There were two individuals who were unable to answer the questions on this measure due to the nature of their injuries (total loss of penis). This variance between verbal reports and objective measure warrants further examination that is beyond what can be drawn from the current data. Further research should also look for better ways to record and understand sexual functioning particular to military members and veterans. Questions that may be useful to consider are: On a scale of one to 10, how happy are you with your sex life? If sexual dysfunction exists, how much hope do you have to regain full sexual function with intervention (graded: no hope; somewhat hopeful; mostly hopeful; or

confident)? On a scale of one to 10, how much do you feel your sexual functioning is appropriately addressed by your medical team? On a scale of one to 10, how comfortable are you discussing your sexual functioning with an intimate partner?

Limitations

This research project presents several limitations. First, the study is exploratory. Due to the extremely small and difficult-to-access population, the limited sample size, and the variability in the veterans who participated, there are limitations in the interpretation of the findings. While there is some range in racial representation (not reported to maintain the confidentiality of the veterans) as well as in age, marital status, and reproductive history, the small sample size and the study methodology make it inappropriate to generalize beyond these subjects. The research only includes male veterans, so it probably does not apply to female service members with these injuries.

Another limitation is researcher and respondent bias. The potential for respondent bias includes subjectivity, accuracy of recalled information, and the implications of the researcher being a young woman interviewing men who are in a similar age bracket. Some service members may have withheld or concealed information due to stigma, embarrassment, and/or the desire to present socially preferred answers. Also, those who agreed to participate in this research may have more resolve about the injury or other factors that differ from those who opted not to participate in the study or could not be located.

Finally, these subjects experienced a range of injuries. While the goal of the research is to understand GU injury as an entirety rather than as a specific genital injury, the variation in injuries and polytrauma is notable. For GU injuries, this ranges from

atrophy of testicles to total loss of penis and testicles. Other injuries and compounding variables include a number of extremity amputations, spinal cord injury, brain injury, mental health diagnosis, etc. All of the injuries occurred in Afghanistan. Therefore, there may be a difference in the experience of different wars, including the recent war in Iraq. This research indicates that military members who found meaning in the military mission derived better recovery benefits, and thus, it would be interesting to compare those service members who were injured in Afghanistan to those from Iraq or other wars (Southwick & Charney, 2012).

Personal Reflection and the Future

As people ask me about my dissertation and research, I found myself hesitating at times as I mention genitals, penises, and testicles in social situations. It seems, somehow, to be inappropriate to discuss. I understood that the research would surprise people in some regard, and several people have told me that they had never even considered this type of injury. People do not seem to be turned off by it when I describe it, but usually there is a chuckle or some joke about the topic. I started reflecting on these interactions and why it feels uncomfortable. I wondered whether this would be the same if I were to say, "I am studying about heart, lung, and hand injuries," or even just "infertility." The answer is mostly no. I do not think I would have the same experience or feeling about it. Even as I try to be vaguer as I name my topic by saying, "injuries that impair fertility," I find myself feeling as though I am deceiving people. While there is no way to experience what life may be like for these service members with genital injury, this research gave me some insight into what it might be like for a service member when he is being asked

about his injuries. Because of this, I now try to be straightforward and direct about my topic so that I do not perpetuate the stigma or mum effect.

I also realized that multiple barriers to completing this research existed. The one that was most striking to me is the number non-profits that quickly wrote me off and would not talk to me, even when I did not ask for participants but simply wanted to speak with someone who works there. While I agree with a need for respect and confidentiality for this vulnerable population of wounded warriors, there were so many times that people responded, “We can’t help you. Good luck!” They recognized a need for the research, but they perpetuated the mum effect and created barriers to conducting needed research or even opening a discussion. In order for change to be made, especially on the systemic level needed to make changes in the military, research is required to inform how we can support these service members and veterans.

Despite the barriers and challenges with this research, I do have hope to expand my research. A urologist at WRNMMC agreed to collaborate with me to expand my research. We are now trying to navigate and circumvent the obstacles and figure out how to implement new research. We still have a long road ahead, but I feel optimistic. My research goal is to speak to more veterans with varying degrees of these injuries to better understand the impact of infertility and the importance of parenting as a road to recovery. I am interested in developing alternative therapies to engage veterans in talking about sex and infertility in an open and safe space.

Conclusion

The primary research question for this study was an examination of the essence of a veteran’s experience of combat-related reproductive trauma and the process for

reconceiving the reproductive narrative. My research aim was to discover how the injuries (physical changes and limitations, including GU trauma in the context of polytrauma, TBI, and/or amputations) and the associated reproductive health issues impact subsequent attitudes on family development, sexual functioning, and quality of life. Although this study was exploratory in nature, it is clear that recovery from a reproductive trauma is challenging and difficult to discuss. The findings suggest that those with GU injury feel there is little that can be done because “it won’t grow back.” Having a supportive partner, developing realistic optimism around options to build a family, regaining sexual function, and achieving success in IVF or growing a family are protective factors in the process. Protective ambivalence allows the veteran to deal with the unknowns of the recovery process and to be successful in this effort.

Using the theoretical lenses of life course perspective with a biopsychosocial view and the reproductive story model provided a foundation for understanding and a framework to use with wounded warriors experiencing impaired fertility. This research offers innovative data about the biopsychosocial recovery from GU injury and subsequent quality of life with a focus on the infertility experience. More research is needed to continue to develop information to provide evidenced-based best practice and policy changes.

Appendix A: Recruitment letters

Recruitment letter for fertility clinics

Dear [NAME]:

I am a social work doctoral student at Bryn Mawr College, and I am looking to recruit military members or veterans who have service related injuries that have impaired fertility. I know your program has elected to take part in the new “Serving Our Veterans” program sponsored by the American Society for Reproductive Medicine (ASRM) and Society for Assisted Reproductive Technology (SART). Therefore, I am asking you to consider referring your patients for possible participation in my research study.

I work in psychological support services for those dealing with infertility and am ASRM/Mental Health Professional Group (MHPG) member. About three years ago while considering what to focus my doctoral research on within the infertility field, I met a veteran who spoke about infertility in the military. He discussed the extensive injuries of some service members and the lack of resources available for infertility after injury. Always having an interest in the military, I felt this was a perfect avenue to further explore and research on an under studied area of infertility. For my dissertation I will be looking to address the question: *How does the biopsychosocial recovery from military-related genitourinary injuries and complications influence the individual’s attitudes on family development, quality of life, and consideration of fertility treatment?*

The study will help provide an in-depth understanding of biopsychosocial issues related to military-related GU injuries and provide information for determining the need for further research for improving both healthcare policy and practice. My study has been approved by Bryn Mawr College’s Institutional Review Board.

Patients that meet the following criteria may be eligible:

- military member or veteran who served in the post-9/11 war
- have a service-related injury impacting genitourinary system and fertility
- must have been injured between the years 2001-2014

I look forward to speaking with any of your patients who may be interested in participating in this study. I have attached a flyer which you can provide to them. Please feel free to contact me with questions, or have your patients contact me themselves, using the information provided below.

Thank you for your time and consideration. [ATTACH RECRUITMENT FLYER]

Sincerely,

Laura Covington, MSW, LICSW
PhD Candidate, Bryn Mawr College, GSSWSR
202-412-8022
lcovington@brynmawr.edu

Recruitment letter for those working with wounded veteran

Dear [NAME]:

I am a social work doctoral student at Bryn Mawr College, and I am looking to recruit military members or veterans who have service related injuries that have impaired fertility. I am asking you to consider referring your contacts for possible participation in my research study.

I work in psychological support services for those dealing with infertility, and about three years ago while considering what to focus my doctoral research on within the infertility field, I met a veteran who spoke about infertility in the military. He discussed the extensive injuries of some service members and the lack of resources available for infertility after injury. Always having an interest in the military, I felt this was a perfect avenue to further explore and research on an under studied area of infertility. For my dissertation I will be looking to address the question:

How does the biopsychosocial recovery from military-related genitourinary injuries and complications influence the individual's attitudes on family development, quality of life, and consideration of fertility treatment?

The study will help provide an in-depth understanding of biopsychosocial issues related to military-related GU injuries and provide information for determining the need for further research for improving both healthcare policy and practice. My study has been approved by Bryn Mawr College's Institutional Review Board.

Those service members that meet the following criteria may be eligible:

- military member or veteran who served in the post-9/11 war
- have a service-related injury impacting genitourinary system and fertility
- must have been injured between the years 2001-2014

I look forward to speaking with any contacts who may be interested in participating in this study. I have attached a flyer which you can provide to them. Please feel free to contact me with questions, or have the person contact me themselves, using the information provided below.

Thank you for your time and consideration.

Sincerely,

Laura Covington, MSW, LICSW
PhD Candidate, Bryn Mawr College, GSSWSR
202-412-8022
lcovington@brynmawr.edu

[ATTACH RECRUITMENT FLYER]

Snowball recruitment letter

Dear [Mr. LAST NAME],

Thank you for your interest and participation in Biopsychosocial Recovery From Service-Related Genitourinary (GU) Injuries. I am writing to ask whether you would be willing to pass along the enclosed information to any friends or acquaintances you know who may be interested in learning about this research study. You are under no obligation to share this information.

I am attaching a flyer that you may give out. Please feel free to contact me with questions or have your contact connect with me using the contact information provided below.

As a reminder the people that meet the following criteria may be eligible:

- military member or veteran who served in the post-9/11 war
- have a service-related injury impacting genitourinary system and fertility
- must have been injured between the years 2001-2014

Thank you for your time and consideration.

Sincerely,

Laura Covington, MSW, LICSW
PhD Candidate, Bryn Mawr College, GSSWSR
202-412-8022
lcovington@brynmawr.edu

[ATTACH RECRUITMENT FLYER]

Direct recruitment letter

Dear [Insert name],

Thanks for your interest in participating in my research project in conjunction with my doctoral studies at Bryn Mawr College, Graduate School of Social Work and Social Research. I am gathering information from service members who have combat-injury acquired infertility. I want to find out about service members' experiences with genitourinary injuries; and how the associated reproductive health issues have influenced attitudes around family development (i.e.-marriage and procreation) and overall quality of life. I have attached a flyer about the research, which you may already have received. Firstly, would you be willing to speak with me for about 10 minutes about my research so I can tell you a little bit about it and answer any questions? If so, is there a good time to call you and the best a phone number to reach you at?

Sincerely,

Laura

Laura Covington, MSW, LICSW
PhD Candidate, Bryn Mawr College, GSSWSR
Clinical Social Worker
Licensed in MD, DC, VA, PA

Appendix B: Recruitment Flyers
Original Recruitment flyer

MILITARY-RELATED GENITOURINARY INJURY AND INFERTILITY

Research Study



*Picture from: Bob Woodruff Foundation
January 2016
Taken by: Shana Novak*

I am a doctoral candidate at Bryn Mawr College, Graduate School of Social Work and Social Research. I am seeking research participants for my graduate research project. I am trying to understand how the injury and the associated reproductive health issues have influenced attitudes around family development (i.e.-marriage and procreation) and overall quality of life.

You may qualify if you are:

- a military member or a veteran who served in the post-9/11 war
- have a service-related injury impacting genitourinary system and fertility
- have been injured between the years 2001-2014

The study involves participating in a confidential interview that will take approximately two hours as well as completing an online survey which takes about 5-10 minutes. You will receive a summary of the study findings at the conclusion of the research.

If you are interested in participating or have questions about the study, please contact **Laura Covington** at **202-412-8022** or **lcovington@brynmawr.edu**.

Recruitment flyer (after IRB revised 3/2017)

MILITARY-RELATED GENITOURINARY INJURY AND INFERTILITY

Research Study



*Picture from: Bob Woodruff Foundation
January 2016
Taken by: Shana Novak*

I am a doctoral candidate at Bryn Mawr College, Graduate School of Social Work and Social Research. I am seeking research participants for my graduate research project. I am trying to understand how the injury and the associated reproductive health issues have influenced attitudes around family development (i.e.-marriage and procreation) and overall quality of life.

You may qualify if you are:

- a military member or a veteran who served in the post-9/11 war
- have a service-related injury impacting genitourinary system and fertility
- have been injured between the years 2001-2014

The study involves participating in a confidential interview that will take approximately two hours as well as completing an online survey which takes about 5-10 minutes. You will receive a \$50 gift card to thank you for your time at the completion of the interview and a summary of the study findings at the conclusion of the research.

My study has been approved by Bryn Mawr College's Institutional Review Board.

If you are interested in participating or have questions about the study, please contact **Laura Covington** at **202-412-8022** or **lcovington@brynmawr.edu**.

Appendix C: Screening Phone Call

Name

Contact information

Date

Hello [name], my name is Laura Covington. As you may already know, currently, I am working on a research project in conjunction with my doctoral studies at Bryn Mawr College. I am gathering information from service members who have combat-injury acquired infertility. I want to find out about service members' experiences with genitourinary injuries and how the injury and the associated reproductive health issues have influenced attitudes around family development (i.e.-marriage and procreation) and overall quality of life. The following questions are intended to help ensure that those interested in this study meet certain criteria for participation:

1. Are you in the military or a veteran? Military / Veteran
 - a. Military affiliation: _____
2. Do you have an injury/ies from combat that has impacted your genitourinary system and fertility? Yes / No
3. When did your injury occur? _____
4. Did you have a traumatic brain injury? Yes / No
 - a. What grade TBI? mild / moderate / severe

[If not eligible]: Thank you very much. Unfortunately you are not eligible for my study because [fill in reason]. At this time, as this is new research, I am looking at this specific area, but I hope in the future to expand my research to include other injured service members. I appreciate the time you have taken to speak with me, and please let me know if I can answer any other questions. Thank you. [End call.]

[If eligible]: Thank you very much. You are eligible because you are a service related injury which has impact your fertility. If you agree to participate in this study, I

would like to arrange a confidential interview with you to discuss your experience with genitourinary injury. [If location is an issue, say the following: If you agree to participate in this study, I would like to set up at a videoconference interview, with advisement that there are some limits to confidentiality when using online technology. The Internet is not a completely secure and information discussed over the Internet can be intercepted in transit. However, I will use a password protect Internet connection which is known only to me, and I will conduct the videoconference in my private office where no one else is around using vsee.com which is a HIPPA compliant videoconference.] All information will be kept confidential.

I will also email you if you agree to participate. The interview itself will last about two hours. The information will be kept strictly confidential, and I will never use your name or personally identifying information in written or oral reports on this study. The information gathered will be used in conjunction with other service members'/veterans' interviews. With your permission, I will make an audio recording of the interview, transcript from the recording, and may take written notes. All of this will be stored in a locked cabinet in my office, and I will be the only person who has access to it. The notes and recordings will be destroyed after I have completed and written up the study. While there are no significant foreseeable risks in participating in this interview, you might find the interview upsetting by discussing your injury and recovery; however, if at any point you are uncomfortable, you may stop the interview. If you were to find the interview stressful and/or wanted a counseling resource, I will have needed resources available for you.

Although being interviewed may not help you directly, it is possible that having a chance to share your story will be an interesting helpful experience and will give you the chance to raise awareness about issues that need to be address. You will be asked to discuss your recovery, including its impact on intimate relationships, feeling around the GU injury, and your views on family building. Participation is voluntary, and you may refuse to participate at any time. You can refuse to answer any questions that you do not want to answer, and you can stop the interview at any time. When I am finished with writing up my study, you will receive a copy of a report to see how your information was used to better understand this understudied area.

- Does this sound like something you might want to participate in? Yes / No
- [If no] I appreciate your willingness to consider this project. Is there any reason in particular that has contributed to not wanting to participate? Thank you. If you have any questions you may call me back. Otherwise, I wish you the best.
- [If yes] Great. Thank you for agreeing to participate. May I schedule a time to meet with you? We will set up a meeting with a location and time that is convenient for you. What is an email address that I can send a confirmation of the meeting and informed consent?

I will give you my contact information in case you have any additional questions before our meeting. My name again is Laura Covington, and I can be reached by phone at 202-412-8022 or email at lcovington@brynmawr.edu. I will be sending you a confirmation email within the next hour that will highlight the interview process and have my contact information. [End call.]

Appendix D: Informed Consent

Confirmation Email and Written Informed Consent

Dear [insert name],

You have agreed to participate in at least one interview as part of the study on the Biopsychosocial Recovery From Service-Related Genitourinary (GU) Injuries, which I am conducting as part of my doctoral studies at Bryn Mawr College. I am interviewing service members with genitourinary injuries, and I want to find out what your experiences, recovery process, quality of life, and views specifically around infertility and family building. You have agreed to an initial [in-person OR videoconference] interview on [date] at [time] at [location]. As a participant in this study, you should be aware of the following:

1. What is involved?

- The *interview itself will last about 2 hours*. With your permission, I will make an audio recording of the interview and may take written notes. I will ask you questions about your experience with genitourinary trauma.
- During the interview we will *discuss background information about the injury, any ongoing physical needs, quality of life, how the injury has impacted your intimate relationships, sex life and views on family building, including fertility treatment*.
- I will also provide you with a link and password to access an *online questionnaire which will help to assess for overall quality of life and sexual functioning*. I will have you complete this after the interview. If you do not have easy access to a computer, I will have you complete it at the end of the first interview. This will take approximately between *10 minutes* to complete

If you would like to meet in your home or another place, please make sure that there is a *private space* to meet where we will be undisturbed. This will help to protect confidentiality and allow more freedom in talking about these sensitive areas. If you do not have a private space or prefer, we can meet at my office.

2. Will the information be confidential?

- Yes, the *information* you share will be *kept strictly confidential*. I will *never use your name or any personally identifying information in any written or oral reports on this study*. The information collected will be only used in combination with other service members' interviews. Your name and contact information will be stored in a locked cabinet in my office, available only to me, and will be destroyed when the study is complete.

- With your permission, I will be *recording* the interviews so that I have an exact record of what you say for purposes of accuracy. Once I have analyzed your interview responses and written my dissertation, I will destroy the audio recording and interview notes.
- The *online questionnaire results* are *password protected* and access *will only be available to me* upon completion. No identifying information will be stored online.
- If the interview is being completed via *videoconferencing*, it should be noted that there are *additional limits to confidentiality* that come with utilizing the Internet, but precautions will be utilized to decrease issues. The Internet is not secure and information discussed over the Internet can be intercepted in transit. Ways that I will work to decrease these issues are to use a password protect Internet connection which is known only to me, and I will conduct the videoconference in my private office where no one else is around. I will also be utilizing <https://www.vsee.com>, which is HIPAA compliant. The videoconferencing allows us to see each other during the interview since we aren't able to have the interview in person. However, only the audio portion of the videoconferencing will be recorded with your permission.
- There are some limits to confidentiality to be aware of: 1) If you disclose something to suggest imminent intent to harm yourself or someone else. 2) Any reports of abuse or neglect of a minor. Under these circumstances, I am legally bound to report as to help keep the safety and wellbeing of you and others.

3. What are the risks and benefits of participating?

- There are *no significant foreseeable risks* in participating in this interview. There may be some psychological risks associated with discussing your injuries and recovery. However, if at any point during the interview you are uncomfortable, you may stop at anytime.
- I will also have *resources available* for you should you need or want them. If you are in crisis, you may contact the *Veterans Crisis Line* at 1-800-273-8255 and Press 1 or www.veteranscrisisline.net which has online chat available. This is confidential and available 24 hours a day, 7 days a week. There is also the *National Suicide Prevention Lifeline* available at 1-800-273-8255.
- Although being interviewed may not help you directly, it is possible that having a *chance to share your story* will be an interesting and cathartic experience and will give you the chance to raise public awareness about issues that need to be address.
- Once I have completed the interviews and written up the analysis, you will *receive a copy of the final report overview*, so that you will be informed about overall study findings and see how you have helped to contribute to the knowledge of this area.

4. Do I have to participate?

- Participation is *voluntary*, and you *may refuse* to participate at any time. You *can refuse to answer any questions* that you do not want to answer, and you can stop the interview at any time. If you are receiving discounted fertility treatment through the Serving Our Veterans program, your participation (or decision not to participate) in this research has absolutely no bearing on the fertility treatment you are receiving, and the fertility clinic will not be told anything about your participation or involvement in the study. You may withdraw from the study at any time by letting me know that you no longer wish to participate.

5. What if I have questions?

- If you have any questions about the research, you can call me at 202-412-8022 or email at lcovington@brynmawr.edu. You may also contact my supervising faculty: Professor Jim Martin at the Graduate School of Social Work and Social Research, Bryn Mawr College at 443-553-6745 or via email jmartin@brynmawr.edu.
- If you have any further questions about your rights as a research participant, you can call Leslie Alexander, Professor and Chair, Bryn Mawr College IRB (laalexand@brynmawr.edu; 610-520-2635).

Please write a simple response to acknowledge that you have received this message and agree to participate in this study. I look forward to talking with you further.

Thank you,

Laura

Laura Covington, MSW, LICSW
PhD Candidate, Bryn Mawr College, GSSWSR
Clinical Social Worker
Licensed in MD, DC, VA, PA

Signed Informed Consent

Please check either yes or no.

I give you permission to digitally record the audio content of the interview.

Yes _____ No _____

I give you permission to contact me after the interview for follow up and to clarify responses, check my interpretation of the data, and evaluate the use of your quotes, if necessary. I acknowledge that I can decline to talk with you during any follow up.

Yes _____ No _____

I give you permission to use direct quotes from my interview for use in professional settings such as publications and conference presentations. There will be no identifying information with these quotes. Yes _____ No _____

I acknowledge that I have read, understand, and been given a copy of the consent form (received via email). All my questions have been answered. Yes _____

No _____

I acknowledge that I can withdraw from the study at any time.

Yes _____ No _____

I understand the risks/benefits, and I agree to participate in this research.

Yes _____ No _____

Participant's Printed Name

Signature

Date

Interviewer's Name

Signature

Date

Appendix E: Interview Guide

Date: _____

Location: _____

Start time: _____

End time: _____

Name: _____

Sex: _____

Highest education/skill training: _____

Military Branch: _____

Military Rank: _____

Military / Veteran

Length of time in the military: _____

Time since veteran status (if applicable): _____

Current VA disability status (if any): _____

Age at the time of injury: _____

Current age: _____

Marital status: _____

Number of children (and ages): _____

Current living arrangements: _____

Introduction

During the interview today I will be going over a little bit about your background and personal history, you current life situation and relationship. I will then ask specifically about your genitourinary (GU) injury and your subsequent life experiences. I will also ask you about your social supports during recovery and any related counseling and support services you have received. The next part of the interview will be focused on how the injury has impacted your intimate relationships (and views on marriage), sex life

and views on family building (procreation). Do you have any questions or concerns before we start?

Interview 1 (as adapted from the Lucas et al., 2014 study)

What does a typical day look like for you?

Are you working? If so, what are you doing? What do you do for enjoyment now?

How are you physically doing now? How easily are you able to get around?

INJURY

What were the circumstances of the injury you sustained? (including date and location)

Describe the injuries you sustained.

Tell me a little bit about your recovery process. [Probe for if they viewed the recovery process in a positive or negative way. How long they view the recovery process to have taken? How long in the hospital? In rehab? What were some of the more difficult times?] Have all your wounds healed?

SPECIFICALLY GU INJURY

Focusing on your genitourinary injuries, can you describe the injuries you sustained?

Of all your injuries you have listed, place in order the importance of your genital injury compared to the others.

At what stage did you realize that you had a genital injury and the full implications of this? Did you find out by yourself or were you told by someone?

What were your thoughts and feelings at the time?

What were your issues and concerns about the injury at the time of finding out? Were they addressed? Who was most helpful in addressing these concerns?

If not, what were the shortcomings? (This can include pre-injury protection)

To what degree do you feel the genitourinary injury has impacted how you feel about yourself?

What was your understanding about how the injury impacted your fertility around the time of injury? What is your current understanding of your fertility?

SOCIAL SUPPORT

Tell me a little about the primary people who have helped in your recovery.

Who is in your support network?

How has your support network influenced your recovery? (Specifically probe for cultural issues, such as religion and ethnicity, if applicable. Have there been any specific cultural issues that have been relevant in your recovery? If so what? How do you feel your religion/ethnicity/family, if any, has influenced your recovery?)

SPECIFIC TO GU INJURY

Have you talked about this GU injury with your close family? Who are these close family members? How did you discuss this injury to them?

If so, how did they react?

Have you talked about this GU injury with the other service members or with other Veterans? (Including other injured service members/Veterans, non-injured service members/Veterans) How have you discussed this injury to them?

Have you talked about this injury with your non-military/non-Veteran friends? How do you explain your injury?

MENTAL HEALTH

Have you received any counseling or emotional support services to help you with your recovery process?

[If applicable] What counseling or emotional support services have you received? (individual, group, family, medication, etc.)

[If applicable] What has been your experience with counseling? Did the therapist adequately address discussion of your genitourinary injuries? Discuss fertility issues?

Have you been diagnosed or treated for a mental health diagnosis, such as PTSD, depression, anxiety, substance abuse, etc.? If so, when was this treatment and was treatment did you receive?

INTIMATE RELATIONSHIP

Are you currently in an intimate relationship?

Were you in a relationship at the time of the injury? [If applicable] Are you still in that same relationship?

[If applicable] Have you been in any other relationships since the injury? Briefly tell me about those.

[If applicable] For how long have you been in your current relationship? Tell me about that partner/spouse and your relationship.

[If applicable] What has the largest impact on your relationship? What was the largest impact on being intimate with your partner?

[If applicable] Would you like to get married? What are the largest barriers or challenges to being in a relationship?

How have your views on marriage or relationships changed, if at all, since the injury? (compared to prior to the injury)

[If applicable] How did your partner find out about the extent of the injuries? How did s/he feel at the time?

At the present time, how do you feel about your genital injuries?

[If applicable] How does your partner feel now about your injuries?

SEX

How satisfying did you perceive sex life to be prior to your injury? (0-not satisfying, 10-extremely satisfied) In what ways has it changed since the injury?

To what degree does your injuries affected your ability to have a normal sexual relationship? Graded as not at all/to a minor degree/to a major degree/I am unable to have a sexual relationship.

On a scale of 1 to 10, where was your sexual functioning pre-injury? (1 being terrible and 10 being perfect) Where would you rate yourself now? The best function you think you can achieve?

Do you think there is anything practically the VA can do to improve your sexual functioning be it by treatment or support? Do you think there is anything practically the VA can do to improve fertility?

Is anything being done at this time to address the sexual functioning issues you have?

[If applicable] Have you discussed any applicable sexual functioning issues you may have with your medical team?

FAMILY DEVELOPMENT

Do you want [more] children? Have you always wanted to have children? Has this changed since the injury? If you don't want [more] children, tell me about why this is.

[If applicable] Are you currently trying to find ways to grow your family?

What options to create a family have you thought about?

What are your thoughts about adoption? assisted reproductive technology (and creation of embryos)? use of donate sperm and/or use of donor egg and/or a gestational carrier?

[If applicable] What are your partner's feelings around ways to build a family?

What are your worries/concerns, if any, with building a family outside of natural intercourse? (financial, emotional, the child, family's/society's views, etc.)

How has your affiliation with the military and veteran services influenced views on family and ways to create a family?

WRAP-UP

Is there anything else you would like me to know about your experience? Are there any other comments you wish to make?

Thank you so much for your time in meeting with me! Do you have any questions or concerns? How do you feel the interview went? I will send you a link to fill out a quick online survey about quality of life and sexual functioning. Will you have access to a computer to complete this? Do you need any assistance with filling out the online survey? You have my contact information if you need anything else.

Appendix F: Non-Disclosure Agreement

SpeechPad Transcription Services

SPEECHINK, INC.

MUTUAL CONFIDENTIALITY AGREEMENT

This agreement (the "Agreement") dated July 8, 2016 (the "Effective Date") is made by and between Speechink, Inc. d/b/a Speechpad ("Speechink") a Delaware corporation with principal offices located at 260 King St #1309, San Francisco CA 94107 and Fauna Covington (the "Company"), a PhD student - Bryn Mawr College company with principal offices located at Washington, DC + Bryn Mawr, PA on its behalf and on behalf of its affiliates.

1. **Background.** Speechink and the Company (hereafter referred to individually as a "Party" and, collectively, as "Parties") intend to engage in a business relationship in which Speechink will provide transcription services to the Company. It is anticipated that each Party may disclose or deliver to the other certain of its confidential or proprietary information during the business relationship.
2. **Proprietary Information.** As used in this Agreement, the term "Proprietary Information" shall mean all confidential information of the Party disclosing such information (the "Disclosing Party") that either has been identified in writing as confidential or of such a nature, or has been disclosed in such a way, that it is obvious to the Party receiving such information thereof (the "Recipient") that it is claimed as confidential by the Disclosing Party. Proprietary Information shall include, but is not limited to call recordings, audio files, video files, transcripts, transcription documents and other documents that contain Proprietary Information.
3. **Disclosure of Proprietary Information.** The Recipient shall hold in confidence, and shall not disclose (or permit or allow its personnel to disclose) to any person outside its organization or consultants, any Proprietary Information of the Disclosing Party. The Recipient, its personnel and consultants shall use such Proprietary Information only for the purpose for which it was disclosed and shall not use or exploit such Proprietary Information for its own benefit or the benefit of another without the prior written consent of the Disclosing Party. Without limitation of the foregoing, the Recipient shall not cause or permit reverse engineering of any such Proprietary Information or decompilation or disassembly of any software programs which are part of such Proprietary Information. The Recipient shall disclose Proprietary Information received by it under this Agreement only to persons within its organization and consultants who have a need to know such Proprietary Information in the course of the performance of their duties, who are informed of the confidential nature of the Proprietary Information and who are bound by a written agreement to protect the confidentiality of such Proprietary Information. The Recipient is responsible for any breach of this Agreement by its employees, other personnel and consultants and will make all reasonable and appropriate efforts to protect the Proprietary Information from disclosure to anyone other than permitted under this Agreement.
4. **Limitation on Proprietary Information.** Proprietary Information shall not include any information which:
 - (a) is generally known to the public at the time of disclosure or becomes generally known to the public through no act or omission on the part of the Recipient;
 - (b) is already in the Recipient's possession at the time of disclosure by the Disclosing Party, as can be properly documented;


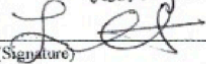
- (c) becomes known to the Recipient through disclosure by sources other than the Disclosing Party having the legal right to disclose such Proprietary Information and having no obligation of confidentiality to the Disclosing Party, as can be properly documented;
 - (d) is required to be disclosed by the Recipient to comply with applicable laws or governmental regulations, provided that the Recipient provides prior written notice of such disclosure to the Disclosing Party so that the Disclosing Party may take reasonable and lawful actions to avoid and/or minimize the extent of such disclosure, and provided further that the Recipient exercises commercially reasonable efforts to cooperate with the Disclosing Party in such actions;
 - (e) is independently developed by Recipient without any use of Proprietary Information, as can be properly documented.
5. Ownership of Proprietary Information. The Recipient agrees that the Disclosing Party is and shall remain the exclusive owner of its Proprietary Information and all patent, copyright, trade secret, trademark and other intellectual property rights therein. No license or conveyance of any such rights to the Recipient is granted or implied under this Agreement.
6. Injunctive Relief. The Recipient acknowledges that a breach of any of the provisions hereof may have a material adverse effect upon the Disclosing Party and that damages from such breach may be difficult to determine or quantify. Accordingly, the Parties hereby agree that in addition to any other remedies that may be available, the Disclosing Party shall have the right to an immediate injunction enjoining such breach.
7. Return of Documents. The Recipient shall, at the request of the Disclosing Party, return to the Disclosing Party all drawings, documents and other tangible manifestations of Proprietary Information received by the Recipient pursuant to this Agreement (and all copies and reproductions thereof and all documents prepared by the Recipient incorporating the Proprietary Information). In addition, upon a Disclosing Party's request, a senior officer of the Recipient shall certify in writing, on behalf of Recipient, that all of Disclosing Party's Proprietary Information required to be returned or destroyed pursuant to this Agreement has been returned or destroyed, as applicable.
8. Independent Development. It is understood by the Disclosing Party that the Recipient may perform or have performed independent development relating to the information to be disclosed by the Disclosing Party hereunder. This Agreement shall not limit the independent development by the Recipient of any technology and/or products involving technology or information of a similar nature to that disclosed hereunder.
9. Governing Law. This Agreement shall be governed in all respects by the laws of the United States of America and by the laws of the State of California, the County of San Francisco without regard for any choice or conflict of laws, rule or provision that would result in the application of the substantive law of any other jurisdiction as such laws are applied to agreements entered into and to be performed entirely within California between California residents.
10. Confidentiality of the Transaction. Neither Party shall, without the prior consent of the other Party, disclose to any third party the fact that Proprietary Information of the other Party has been and/or may be disclosed under this Agreement; that discussions or negotiations are taking place between the Parties; or any of the terms, conditions, status or other facts with

respect thereto, except as required by law and then only with prior notice as soon as possible to the other Party.

11. No Warranties Regarding Accuracy of Proprietary Information. Neither Party makes any representation or warranty, express or implied, as to the accuracy or completeness of the Proprietary Information. Each Party agrees that Proprietary Information is not intended to provide, and will not be relied upon as, the sole basis for any decision made relating to the possible business relationship contemplated herein.
12. Notices. All notices and other communications required or permitted herein shall be in writing and shall be delivered personally (which shall include delivery by courier or overnight delivery service); sent by prepaid certified or registered mail, return receipt requested; or sent via facsimile or email to the address for either Party set forth below. Items delivered personally are deemed delivered on the actual delivery date. Items sent electronically or via facsimile shall be deemed delivered on the date of transmission. Items sent by certified or registered mail shall be deemed delivered three (3) business days after mailing. A written notice of change in address by either Party shall be delivered in accordance with this Section.
13. Successors and Assigns. The terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the Parties, provided that Proprietary Information of the Disclosing Party may not be assigned without the prior written consent of the Disclosing Party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the Parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.
14. Miscellaneous.
 - (a) This Agreement supersedes all prior agreements, written or oral, between SpeechInk and the Company relating to the subject matter of this Agreement.
 - (b) Nothing in this Agreement shall impose any obligation upon either Party to consummate a transaction, to enter into discussions or negotiations with respect thereto, or take any other action not expressly agreed to.
 - (c) If any part of this Agreement is held to be unenforceable, invalid or illegal, then it shall be severable and deemed to be deleted and the remaining provisions shall remain valid and binding.
 - (d) This Agreement shall be effective for three (3) years from its signing date and the obligation of confidentiality shall survive for three (3) years from the date of first disclosure of the Proprietary Information.
 - (e) Each Party agrees that no technical information, including Proprietary Information, disclosed by the Disclosing Party hereunder nor any direct products of such technical information shall be exported or re-exported, directly or indirectly, to any destination restricted or prohibited by applicable export control regulations issued by applicable governmental authorities without obtaining authorization from such authorities. This provision shall survive any expiration or termination of this Agreement.

- (f) This Agreement may be executed in two or more counterparts, each of which shall be deemed an original and all of which together shall constitute one instrument. This Agreement may be transmitted by facsimile, and the Parties may close the Agreement by exchanging facsimile signatures. However, the Parties agree to promptly exchange, by courier or first class postal mail, duplicate originals signed by both Parties.
- (g) Each Party further agrees that any intellectual or other property owned by the other remains the sole and exclusive property of the owner unless a written agreement between the Parties provides to the contrary.
- (h) Neither Party the authority to bind or make representations regarding products or services of the other to any third Party absent a written agreement signed by both Parties to the contrary.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the Effective Date first written above.

<p>SPEECHINK, INC.</p>  <p>(Signature)</p>	<p>COMPANY Laura Covington self employed, student 1737 Willard St, NW # 2 Washington DC 20007</p>  <p>(Signature)</p>
<p><u>Linda Khachooni</u> Name</p> <p><u>CFO</u> Title</p>	<p><u>LAURA COVINGTON</u> (Print Name)</p> <p>(Print Title, if signing on behalf of an entity)</p>
<p>Address: <u>260 King St #1309</u> <u>San Francisco, CA 94107</u></p>	<p>Address: <u>1737 Willard St, NW # 2</u> <u>Washington DC 20009</u></p>
<p>Telephone: 415-852-0324</p> <p>Facsimile:</p> <p>Email: <u>linda@speechpad.com</u></p>	<p>Telephone: <u>202-412-8022</u></p> <p>Facsimile:</p> <p>Email: <u>Laura.Covington@integrated-</u> <u>com</u></p>

Sharp Copy Transcription

Contract #bkxbrkpsnzvdbgxpztzwwfcfxhnhkv

6/15/17, 11:23 AM



SERVICE AGREEMENT FOR TRANSCRIPTION SERVICES
and CONFIDENTIALITY AGREEMENT

BETWEEN:

SHARP COPY TRANSCRIPTION

and

LAURA COVINGTON

This service agreement is made and entered into on **JUNE 7, 2017** by **LAURA COVINGTON** and **SHARP COPY TRANSCRIPTION**. In consideration of the mutual promises in this service agreement, the parties agree to abide by all the terms of this service agreement.

Sharp Copy Transcription agrees to do the following:

1. Transcription in accordance with preferences outlined in client questionnaire
2. Completion of transcription by Sara Baum
3. Secure transfer of audio files from client to contractor via Dropbox or email
4. Transcription of the data within audio/video files in an .mp3/.wav/.mp4/.vob (or other) format of a duration of approximately **1 HOUR 26 MINUTES 40 SECONDS**
5. Transcript provided to email addresses specified by client, in Microsoft Word format, by delivery date, **CLOSE OF BUSINESS ON JUNE 16, 2017**.

For performing the work described above, Client agrees to pay Contractor according to the following payment guidelines:

\$100 per hour of recording transcribed, for one or two voices, with good sound quality, including identification of speakers.

\$150 per hour of recording transcribed, for 3 or more voices, with good sound quality, without identification of speakers.

\$180 per hour of recording transcribed, for 3 or more voices, with good sound quality, with identification of speakers by name to the greatest extent possible.

All Charges will be pro-rated to the nearest second.

\$50 additional per hour of recording transcribed for rush (24 hours or less) service. Rush service does

not include weekends (so a recording sent at 3pm on Friday would be transcribed by 3pm on Monday).
\$50 additional per hour of recording transcribed for extremely poor sound quality (large amounts of background noise, device malfunction, etc.) as determined by Sharp Copy Transcription
\$20 additional per hour of recording transcribed for 3-minute, 5-minute, or 10-minute time coding
For all orders, there is a minimum purchase of \$50.

As per above, the price estimate for this project is ! Price is subject to change if audio is more challenging than originally indicated. Any change in price will be discussed with customer before work proceeds.

Projects with a total estimated price of \$1,000 or more require a 15% deposit, which will be applied to the final price.

In the case that Sara Baum is unable to transcribe the recordings due to a severe family/health/weather emergency, client will be contacted and can choose either (a) transcription completed by a carefully selected subcontractor, along with a 10% discount or (b) an extension of the deadline, along with a 10% discount.

Payment is due within 30 days of project completion. Payment can be made online or by check made out to Sharp Copy Transcription and sent to Sharp Copy Transcription, 9009 Eton Rd., Silver Spring MD, 20901.

I, Sara Baum of Sharp Copy Transcription, agree to maintain full confidentiality in regards to any and all audio files and documentation received from and sent to the above-named Client related to [her/his] work.

Furthermore, I agree:

1. To not disclose confidential information, including the identity of the researcher, interviewees or the content of the interviews, to other third-parties, starting from the effective date of this Agreement, including prior discussion thereof, and continuing in perpetuity;
2. To hold in strictest confidence the identification of any individual that may be inadvertently revealed during the transcription of recorded interviews, or in any associated documents;
3. To not make copies of any audio files or of the transcribed texts, unless specifically requested to do so by the above-named Client;
4. To store all materials related to this Contract in a safe, secure location as long as they are in my possession, and to not permit access to those files by any third-parties;
5. To delete all electronic files containing documents and audio files from my computer hard drive and any backup devices upon instructions to do so from the above-mentioned client.

Sharp Copy Transcription
www.sharpcopytranscription.com

sara@sharpcopytranscription.com
301-512-4859

LAURA COVINGTON

Laura Covington

✓ Signed Jun 7th, 2017

SARA BAUM

Sara Baum

✓ Signed Jun 7th, 2017

***Sharp Copy Transcription was signed on two additional occasions: 6/22/17 and 7/21/17

Appendix G: PROMIS Global Health and Sexual Functioning Measures
(administered via computer)

Global health v1.2

In general, would you say your health is:	Excellent Very good Good Fair Poor
In general, would you say your quality of life is:	Excellent Very good Good Fair Poor
In general, how would you rate your physical health?	Excellent Very good Good Fair Poor
In general, how would you rate your mental health, including your mood and your ability to think?	Excellent Very good Good Fair Poor
In general, how would you rate your satisfaction with your social activities and relationships?	Excellent Very good Good Fair Poor
To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	Completely Mostly Moderately A little Not at all
In the past 7 days How would you rate your pain on average?	0 1 2 3 4 5 6 7 8 9 10

In the past 7 days How would you rate your fatigue on average?

None
Mild
Moderate
Severe
Very severe

In general, please rate how well you carry out your usual social activities and roles. (This includes activities at home, at work and in your community, and responsibilities as a parent, child, spouse, employee, friend, etc.)

Excellent
Very good
Good
Fair
Poor

In the past 7 days How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?

Never
Rarely
Sometimes
Often
Always

Sexual Functioning v1.0

In the past 30 days How interested have you been in sexual activity?

Not at all
A little bit
Somewhat
Quite a bit
Very

In the past 30 days How often have you felt like you wanted to have sex?

Never
Rarely
Sometimes
Often
Always

MALE: In the past 30 days How difficult has it been for you to get an erection when you wanted to?
(If you use pills, injections, or a penis pump to help you get an erection, please answer this question thinking about the times that you used these aids.)

Have not tried to get an erection in the past 30 days
Not at all
A little bit
Somewhat
Quite a bit
Very

FEMALE: How often did you become lubricated ("wet") during sexual activity or intercourse?

No sexual activity
Almost always or always
Most of the time (more than half)
Sometimes (about half the time)
A few times (less than half the time)
Almost never or never

MALE: In the past 30 days How difficult has it been to keep an erection (stay hard) when you wanted to?
(If you normally use pills, injections, or a penis pump to help you get an erection, please answer this question thinking about the times that you used these aids.)

Have not tried to get an erection in the past 30 days
Not at all
A little bit
Somewhat
Quite a bit
Very

FEMALE: In the past 30 days How difficult has it been for your vagina to get lubricated ("wet") when you wanted it to

Have not tried to get lubricated ("wet") in the past 30 days
Not at all
A little bit
Somewhat
Quite a bit
Very

MALE: In the LAST 4 WEEKS Your ability to have an erection

Have not tried to get an erection in the past 4 weeks
Very poor
Poor
Fair
Good
Very good

FEMALE: In the past 30 days, How would you describe the comfort of your vagina during sexual activity?

Have not had sexual activity in the past 30 days
Very comfortable
Comfortable
Uncomfortable
Very uncomfortable

FEMALE: In the past 30 days, How often have you had difficulty with sexual activity because of discomfort or pain in your vagina?

Have not had sexual activity in the past 30 days
Never
Rarely
Sometimes
Often
Always

FEMALE: In the past 30 days, How often have you stopped sexual activity because of discomfort or pain in your vagina?	<p>Have not had sexual activity in the past 30 days</p> <p>Never</p> <p>Rarely</p> <p>Sometimes</p> <p>Often</p> <p>Always</p>
In the past 30 days How would you rate your ability to have a satisfying orgasm/climax?	<p>Have not had sexual activity in the past 30 days</p> <p>Excellent</p> <p>Very good</p> <p>Good</p> <p>Fair</p> <p>Poor</p>
During the past 30 days: When you have had sexual activity, how much have you enjoyed it?	<p>Have not had sexual activity in the past 30 days</p> <p>Not at all</p> <p>A little bit</p> <p>Somewhat</p> <p>Quite a bit</p> <p>Very much</p>
During the past 30 days: When you have had sexual activity, how satisfying has it been?	<p>Have not had sexual activity in the past 30 days</p> <p>Not at all</p> <p>A little bit</p> <p>Somewhat</p> <p>Quite a bit</p> <p>Very much</p>

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