Quality of Life of Veterans with Post Traumatic Stress Disorder in New York City, New York: A Comparative Study between African American and Caucasian Veterans

By

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Dedication

This thesis is dedicated to my parents Irene Osei and Jude Bekoe, my only brother Henry Bekoe, and my precious daughter Emerald, for their endless support and encouragement throughout this journey. Irene, you are my biggest supporter. You have always stood by my side and encouraged me and literally spent many nights by my side to ensure that I completed a task whenever I was exhausted. The love and passion that you show in everything I do have kept me going till this day. Your words like, “Kwabena, finish it up so I can be proud of you” still rings a bell in my mind to urge me on. Thanks for a great support team.
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Abstract

Post-Traumatic Stress Disorder affects many combat veterans who served in Iraq and Afghanistan, and has subsequently impacted their quality of life. The purpose of this study was to determine (a) the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD, and (b) to determine the relationship between Post-traumatic Stress Disorder (PTSD) and Quality of Life (QOL) among veterans who have served in Iraq, Afghanistan, or both. This cross-sectional, quantitative study included ninety-nine combat veterans (men and women) in New York City who have served in Iraq, Afghanistan, or both. Data was analyzed using Chi-square and Fisher Exact tests in SPSS. The results indicated that AA had a greater level of heavy combat exposure (64.2%) than CA (52.2%). CA had better overall QOA than the AA (p = 0.0001). CA had an overall higher average QOL score (63.03) than AA (59.63). CA veterans deployed to Iraq or Afghanistan separately have better quality of life than AA (p = 0.03 and 0.085). However, AA veterans who were deployed to both Iraq and Afghanistan had significantly higher quality of life than CA (p = 0.003). This study will highlight the need for more services for post-war veterans and promote policy changes within the Veterans Association and the Department of Defense concerning managing PTSD among combat veterans in order to improve their quality of life.
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Chapter 1: Introduction to the Study

Post-traumatic stress disorder (PTSD) is a mental or psychological health condition that is triggered by a traumatic event either by a person experiencing it or witnessing it happen to someone else (Dunn et al., 2011). PTSD is a chronic disease/condition that can affect all age groups in the veteran population. In this paper, chapter 1 discusses the theoretical framework that guides this research, as well as the assumptions, limitations, delimitations, and the purpose of the study.

Background

This research study is focused on veterans who have served/deployed in either Iraq or Afghanistan or both and are diagnosed with PTSD. The study further concentrates on the veterans in New York City area regardless of the gender. However, the veterans who served in Iraq and Afghanistan have been categorized into two groups namely Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). Each veteran has a distinct case as to how many years or months spent in either Iraq or Afghanistan or both, and the nature of their service or duty (Nayback, 2008). Some veterans may stay in the war zone but may not be actively engage in the act of war while others may be at the war front engaging the enemy.

Quality of Life and PTSD

Research has suggested that post-traumatic stress disorder (PTSD) is highly associated with quality of life (QOL) (Nayback, 2008). This study about Iraq and Afghanistan veterans aimed to explore how PTSD resulted from Combat Exposure has affected the level of QOL in the African American and Caucasian veterans’ population respectively.
Research Question and Hypothesis

1. What is the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD?

   $H_0$: There is no difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

   $H_a$: There is a difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

2. How does quality of life differ between AA and Caucasian veterans who are diagnosed with PTSD?

   $H_0$: There is no difference in quality of life between AA and Caucasian veterans who are diagnosed with PTSD.

   $H_a$: There is a difference in quality of life between AA and Caucasian veterans who are diagnosed with PTSD.

3. Is there a difference in quality of life among AA and Caucasian veterans based on place of deployment?

   $H_0$: There is no difference in quality of life among AA and Caucasian veterans based on place of deployment.
Hₐ: There is a difference in quality of life among AA and Caucasian veterans based on place of deployment.

**Purpose of the Study**

The purpose of this study was to determine if there is an association between (a) the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD, and (b) to determine the relationship between Post-traumatic Stress Disorder (PTSD) and Quality of Life (QOL) among veterans who have served in Iraq, Afghanistan, or both.

**Theoretical Framework and Intervention**

Social Cognitive Theory (SCT) was used to guide this research study. The Social Cognitive Theory emphasizes the causation of reciprocal determinism. It emphasizes that the environment, a person’s behavior, and personal factors operate as determinants of behaviors and have bidirectional influence on each other (Figure 1). It is based on the notion that a behavior is propelled by the expected outcome or how valuable the outcome will be (Richardson et al., 2008). Some of the major constructs of SCT are: the outcome expectations, self-efficacy, collective efficacy, self-regulation, behavioral capability, observational learning, incentive motivation, and moral disengagement. Self-efficacy is generally defined as the belief in a person’s capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet situational demands (Harrison et al., 1997).
There is overwhelming evidence that suggests that the way veterans emotionally and cognitively processes traumatic experience contributes to the development and maintenance of PTSD (Richardson et al., 2008). Continuous PTSD occurs when an individual processes a traumatic event in a way that leads the person to recall the event with the same sense of seriousness and danger felt at the time of the original traumatic event (Richardson et al., 2008). This theory aligns with this study because combat veterans may continue to experience stressful events such as recurrent flashbacks from previous traumatic events. In addition, they may have sleep disturbances, nightmares, and various impaired cognitive functioning. These stressors may manifest into emotional numbing, hyper arousal, depression, and anhedonia (Shercliffe, 2007). The is an urgent need to address these conditions because many veterans today have either given up on treatment or are reluctant in seeking one (Tuerk et al., 2009). When these conditions are not addressed, the health-related quality of life of veterans may be compromised.
Definition of Terms

*Combat veterans* - veterans that have had direct exposure to acts of military conflict.

*Quality of life (QOL)* - is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life (Farage et al., 2012).

*Health Related Quality of Life (HLQOL)* - This is the physical and mental health perceptions and their correlates which including health risks and conditions, functional status, social support, and socioeconomic status.

*Veterans* - veteran refers to a person who has had an extended period of service time in the United States Armed Forces (Haley et al., 2002).

*Post-Traumatic Stress Disorder (PTSD)* - Post-traumatic stress disorder (PTSD) is a mental or psychological health condition that is triggered by a traumatic event either by a person experiencing it or witnessing it happens to someone else (Dunn et al., 2011).

Assumptions, Limitations, and Delimitations

**Assumptions**

I anticipated that the veterans were able to read and understand the questions asked on the survey. I also assumed that the veterans gave accurate and truthful answers since their privacy and confidentiality were protected.

**Limitations**

One of the limitations of this research was that veterans completed a self-reported survey questions. They may encounter recall bias because they may not remember all of the details of combat service because of their current diagnosis of PTSD. Due to different levels of PTSD, veterans may not be as accurate as they should be in answering the
survey questions. The data were collected from participants who are serviced by a specific facility; therefore, results of this study cannot be generalized beyond this study population.

Delimitations

The study involved 99 Caucasian and African American veterans who served in combat in Iraq, Afghanistan, or both and were diagnosed with PTSD. Participants were both men and women. Participants completed a questionnaire on their combat exposure while in Afghanistan, Iraq, or both, and completed questions concerning their current health-related quality of life (HRQOL). Data analysis procedures will be discussed in details in chapter 3.

Significance of the Study

Numerous studies have focused on PTSD and QOL among veterans who were deployed to different areas of combat around the world (Sherman et al., 2005). However, this study is needed because there is insufficient knowledge established concerning PTSD and QOL among Caucasian and African American veterans relating specifically to their service in the military (Nayback, 2008). There are many problems veterans face related in the military service like PTSD due to the nature and location of their service. The society we live in today is full of uncertainties due to wars, terrorist attacks, and political instabilities around the world. This has put members of the United States Armed Forces on a constant alert which in itself can lead to PTSD because of the fear to die. This study is essential because PTSD effects on veterans are broad and intertwines with other aspects of life, for example achieving educational goals, access to healthcare, and socio-economic status (Dunn et al., 2011).
Another factor to consider in this study is the ethnicity and background of the veterans. This is important because researchers have stated that most African American (AA) veterans are affected more with PTSD than other ethnic groups like Caucasians and Hispanics (Lu et al., 2011; Dunn et al., 2011; Nayback, 2008). However, to my knowledge there has not been any study documenting these two ethnicities that were deployed in Iraq and Afghanistan.

This study will generate awareness of health related quality of life of veterans affected by PTSD and will provide recommendation on how they can improve their quality of life upon their return from service overseas. This will hopefully help them to readjust themselves well back to civilian life.

**Summary**

Many veterans of the United States return home from war overseas and are not able to live their lives as before. This is due to the many tragic events that they are exposed to during wars. PTSD is one of the reasons for not fulfilling life after their time in the military. PTSD diagnosis and treatment delays a lot of their live long dreams like attaining educational goals, raising families, gaining and maintaining a dream job, and other personal life goals.

Quality of life of veterans could be improved substantially if the issue of ethnicity and culture are also addressed as the study seeks to compare and contrast how PTSD affects QOL among Caucasian and African American veterans. Overall, PTSD is not just a local issue, or a national issue but an international issue that needs to be addressed.
Post-traumatic stress disorder (PTSD) is a mental or psychological health condition that is triggered by a traumatic event either by a person experiencing it or witnessing it happen to someone else (Dunn et al., 2011). PTSD affects people from all walks of life with no regard to race, ethnicity, color or background. Shercliffe (2007) argued that, to arrive at a comprehensive definition of PTSD, genetics of people has to be researched in other to find answers to why people may be exposed to the same traumatic event but some may show signs of PTSD, but others may not. However, there are certain occupations which are likely to expose people to traumatic activities. A typical example would be serving in the military.

Causes of PTSD

There are many causes of PTSD among veterans, ranging from family or internal to external events (Haley et al., 2002). The development of PTSD can be influenced by a person’s genetic make-up or biology. Priebe et al., (2013) have argued that in a community of post war veterans, the cause of PTSD may be due to the exposure of traumatic events, like explosions, losing close comrade friends on the battle field, the stress of prolonged separation from family and loved ones and the weary of war in general. However, the above mentioned factors are not the only causes of PTSD among veterans. Researchers have indicated that, prolong family separation, the fear and anxiety of eminent danger, high level of stress, death, and injuries are among some of the causes of PTSD in the military population (Priebe et al., 2013; Canetti et al., 2010; ). In addition, traumatic events like rape, explosions, prolonged hunger, resulting from war can impact the general public to experience PTSD (Canetti et al., 2010). Other risk factors for PTSD
for combat veterans include factors related to specifically deployment. According to Richardson (2008), the intensity, duration of combat, personal vulnerability, other war zone experiences and sociocultural factors include personal factors such as age, gender, intelligence, education, adversity as a child, traumatic life events, family history of psychological disorders and personality can significantly contribute to PTSD (Haley et al., 2002). Post military factors are also risk factors for PTSD. According to (Canetti et al., 2010), veterans who were previously deployed to combat zone may present individual symptoms and without social support, they may be affected by social and political environment.

**Prevalence of PTSD among Veterans**

The prevalence of PTSD among veterans may be higher than the general population. This is because of the ongoing war on terrorism taking place overseas (Priebe et al., 2013). Burke et al., (2009) argued that Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans have recorded an estimated 22% of all combat brain damage injuries/PTSD since the beginning of the war in 2003. An estimated 1.6 million military personnel who were deployed in coordination with OIF/OEF and close to 30,000 troops were wounded in action. This raises a big concern that PTSD among OIF/OEF should be given the necessary attention (Burke et al., 2009; Lafaye et al., 2003). It is however, imperative that the various causes of PTSD among this population (OIF&OEF veterans) be given a careful examination.
Effects of PTSD on Quality of Life (QOL)

Quality of life (QOL) can be defined from a number of perspectives depending on the discussion at hand. Researchers have indicated that there is no one clear definition of QOL due to its multidimensional nature of the topic.

There are a number of effects that PTSD has on quality of life of veterans. Researchers have suggested that people with PTSD are susceptible to developing other mental health disorders including but not limited to; other anxiety disorders, depression, eating disorders, and substance abuse (Eksi et al., 2009; Farage et al. 2012; Haagsma et al., 2012). According to Haagsma et al., (2012) people with PTSD are about six times as likely to develop depression and about five times as likely to develop another anxiety disorder which has a direct bearing on quality of life. They have high risk of developing a number of physical health problems including but not limited to diabetes, obesity, heart problems, and sexual dysfunction. The health issues mentioned above has a direct effect on a person’s quality of life pertaining to raising family, maintaining a stable job, and attaining educational goals (Eksi et al., 2009).

There are effects that PTSD has on QOL within the veteran population. Richardson et al. (2008) have argued that PTSD affects veterans, in a number of ways. These issues include inability to raise a family, maintaining their home, negative relationship with spouses, inability to maintain a job, and other social functions. Researchers have suggested that there are a lot of female victims of domestic violence as a result of PTSD from their male veteran partners (Lafaye et al., 2003).

Research suggests that domestic violence among military families as a result of PTSD is a serious societal problem with essential medical consequences (Burke et al.,...
An estimated 1.4 million people in the year 2000 were treated in emergency rooms for injuries resulting from domestic violence; with about 17% of these people being injured by an intimate partner suffering from PTSD (Lafaye et al., 2003). In as much as both men and women are victims of domestic violence from PTSD, women are reportedly treated more for injuries resulting from the abuse (Lafaye et al., 2003).

**Effects of PTSD on QOL of African Americans and Caucasian Veterans**

Researchers have conducted various studies about PTSD in ethnic minority African American Veteran (AAVs) and Caucasian populations. The various results of the studies are not entirely conclusive; however, the overall findings seem to be that African American (AA) veteran groups have a higher rate of PTSD than Caucasian Veterans (CV). Such results they argue may be due to conflicts related to identification with the Iraqi/Afghanistan locals (Canetti et al., 2010). Another factor may be higher exposure to war zone stressors respectively (Lafaye et al., 2003).

The researchers argued that AA veterans might be more likely to disclose problems or engage in treatment when paired with a clinician of the same race. Even though, there are study differences, the trend suggests that being an AA veteran may cause one to be more "at risk" for PTSD. Lu et al. (2011) stated that African Americans have greater exposure to war stresses and have more predisposing factors than Whites, which appears to account for their higher rates of PTSD. Moreover, the difference in rates of PTSD between Caucasian veterans and other ethnic groups remains even though the other groups may have had greater exposure to war stresses (Lu et al., 2011).

Rates of PTSD among African American Veterans (AAV) are 22% to 25% (CDC, 2013).
QOL of Veterans with PTSD and Relationship with Families

A veteran with PTSD can negatively impact the life of his/her family as they exhibit symptoms of this disorder such as isolation and social anxiety. Many veterans do not feel comfortable being around large groups and crowded areas, which then limits the activities that the family can do. Family members may feel pressured or obligated to stay home with him/her instead of pursuing independent activities, thus narrowing family members' social contacts and limiting their ability to obtain support. Family members often feel guilty for pursuing independent activities (Canetti et al., 2010).

Veterans may often experience anger, which can be a form of protection against painful feelings, memories and thoughts. This may serve as a barrier as a result and further isolate him/her from other people or may even cause people to pull away from them. Because many veterans with PTSD have difficulty in controlling their anger the family may live in an abusive, chaotic environment. Veterans might verbally abuse (e.g. yelling, name calling) and physically abuse family, which includes throwing things, and aggression. Sherman et al. (2005) stated that Veterans with PTSD as well as their spouses or partners participate in higher levels of physical violence than veterans that do not have PTSD. This alone damages the mental health and development of all family members (Stecker et al., 2013). In addition it destroys the trust, unity, love and relationship within the family.

A spouse living with a PTSD veteran may not feel emotionally or intimately connected. PTSD veterans are worried with managing mental stress; they are emotionally unavailable for their spouse according to researchers (Burke et al., 2009; Canetti et al.,
The emotional distance in the relationship may cause higher levels of fear of intimacy. Furthermore a study found that PTSD veterans struggle with self-disclosure, emotional expression and creating intimacy (Burke et al., 2009). Veterans are often reluctant or unwilling to share feelings with their spouses/partners and children. As a result, family members such as spouse and children may feel rejected, lonely, unworthy, and may even blame themselves for their loved ones behavior (Burke et al., 2009).

Some veterans with PTSD have difficulty with sleep, experience nightmare, some experience insomnia and frequent waking (Gravely et al., 2011). The veteran’s behavior during a nightmare can be very frightening for the spouse and family. In the middle of a nightmare or flashback, PTSD veterans may become physically aggressive, thinking that their spouse/partner is the enemy. Spouses, family members and partners often report extreme terror and confusion about these experiences. This causes their spouses to sleep in separate beds and/or rooms. This may also cause emotional distance and also affect physical intimacy.

The fact that most veterans with PTSD are emotionally unstable, they are sometimes unable to take in the traditional male or female roles in the family (Burke et al., 2009; Canetti et al., 2010; & Shercliffe, 2007). Spouses/partner may have to assume both female and male roles, such as head of household, cleaning, manager of family finances, and more. Partners may feel overwhelmed by all the demands in their lives and may grow to dislike or even hate the veterans for not doing the familial responsibilities. In addition, the spouse may become bitterer and despise the partner for taken over the veteran’s responsibility instead of pursuing him/her goals. Children as well may have to
take on adult responsibilities, forcing them to grow up fast and abandoning their childhood life. Since Individuals with PTSD are aggressive, emotional and physically unstable, he/she has a hard time keeping their jobs, thereby creating financial pressure on the family (Harley, 2002).

Spoont et al. (2010) stated that because of potential difficulties that families experience with spouses with PTSD, veterans with PTSD and the partners undergo high levels of marital instability. This includes a greater level of marital conflicts and marital dissatisfaction. Compared with veterans without PTSD, veterans with PTSD are twice as likely to have been divorced and almost three times as likely to have multiple divorces (Canetti et al., 2010).

**PTSD Treatment**

When veterans return home to the U.S from Iraq and/or Afghanistan, The Department of Defense’s (DOD) role is to identify the most effective way of treatment for those diagnosed with PTSD. There are numerous treatment options that health care professionals and clinicians can use to effectively treat Iraq and Afghanistan veterans with PTSD. These treatments which includes Cognitive-Behavioral Therapy (CBT), psychiatric medications, education for client and family, group therapy, and writing exercises (Dunn, 2011).

CBT is a type of counseling that has received strong research support. It helps PTSD veterans understand and change how thoughts and beliefs about the trauma, and about the world, causes stress and maintain current symptoms (Burke et al., 2009). There are several different types of CBT, which include exposure therapy, stress inoculation training (SIT) and cognitive process therapy (CPT).
The purpose of exposure therapy is to help lessen the level of fear and anxiety that reminds him/her of their traumatic event. The PTSD veterans will be reminded of what fears by actively exposing him/her through pictures and/or through the use of imagination. When veterans with PTSD deals with the fear and anxiety, he/she can learn that anxiety and fear will lessen. Furthermore veterans will also learn different relaxation skills to better manage anxiety and fear when it occurs.

Stress-Inoculation Training (SIT) helps a veteran gain confidence in his/her ability to cope with anxiety and fear (Stecker, 2013). In addition, PTSD veterans will learn a range of coping skills to control anxiety, such as muscle relaxation and deep breathing.

CPT therapists have PTSD veterans confront feared thoughts and memories associated with a traumatic event, as well as assist patients in connecting with corrective information for maladaptive, unrealistic, or problematic thoughts that may be driving PTSD symptoms. In CPT, the patient is asked to write about his/her traumatic event in detail and is then instructed to read the story aloud repeatedly (Stecker, 2013).

Patients who receive CBT may also take medications that can decrease the severity of depression, anxiety and insomnia as well. Furthermore, PTSD veterans may attend group therapy. The combination of different therapies assures veterans that they are not alone. Group members can share their stories and support one another. This helps them build trust, courage and confidence about interacting with others in their daily lives.
Access to Treatment

There are a number of findings that researchers have come across concerning why war veterans in the U.S have either refused treatment or have no access to treatment. Stecker et al. (2013) have suggested that the presence of stigma or negative view of mental health treatment contributes to the lack of access to treatment by veterans. Some war veterans normally succumb to pressures from communities concerning the negative view of mental health, therefore some refuse to seek treatment. There are various stigmas which are dealt with by the veterans; including self-stigma, public stigma, and stigma within a service member's unit (Richardson et al., 2008).

Culture also plays an important role as it leads to individual perceptions and personal beliefs about treatment as a form of barriers (Shercliffe, 2007). Another pressing barrier is also the bureaucracy within the Veteran Association (VA), which makes scheduling, appointments, paperwork, transportation and others very tiresome for the veterans to handle. This therefore discourages veterans from seeking treatment (VA, 2013). Another important factor why veterans from Iraq and Afghanistan suffering from PTSD do not have access to treatment or deny treatment is their perceptions about the consequences for treatment seeking (Haagsma et al., 2012). Researchers have indicated that many war veterans believe treatment seeking will impact their military career negatively (Laffaye et al., 2003; Stecker et al., 2013; Tuerk et al., 2009; VA, 2013). The general consensus is that war veterans from Iraq and Afghanistan have the view that mental health treatment could result in loss of their security clearances, prevent them from deploying in the future, and to the extreme, some adverse actions from their commanding officers (CO) (Haagsma et al., 2012).
Furthermore, educational materials for survivors and family about PTSD are highly important. This helps the family as well as the survivor understand the nature of PTSD, communication skills, problem solving and anger management. Education can occur in several ways which includes couples/family therapy, psycho-educational program, and support groups. However, families as well as survivors have a hard time accessing educational program or do not have health coverage or not financially equipped to attend these programs. Lastly many are unaware of the existing programs that are available.

In conclusion, PTSD among Iraq and Afghanistan veterans is a compelling issue which needs much attention than it already has. This is because PTSD affects a host of life factors or a lot of determinants of quality of life; which include but not limited to access to education, access to healthcare, ability to maintain a stable family life, and socio-economic status. This is true however, but there are differences within the level of effects comparing the two ethnic groups, African American and Caucasian veterans. Research shows that there is a slight difference in the numbers with the AA veterans being affected the most.
Chapter 3: Methodology

This chapter provides a detailed description of the research study and rationale for the research methodology used to explore the quality of life regarding Iraq and Afghanistan veterans diagnosed with PTSD. The study further explored the two ethnic groups, Caucasians and African Americans to find out if disparities exist between the two groups. This chapter describes in detail the research design, selection and characteristics of participants, the instrument used for the study, data collection procedure, and analysis of the independent and dependent variables. It also includes analyses to test the hypothesis.

Research Design

This research utilized a quantitative, cross-sectional approach to collect primary data. Quantitative research involves the collection of numerical data in order to describe phenomena, investigate relationships between variables, and explore cause-and-effect relationships of phenomena of interest (Sayer et al., 2009). This research was used to analyze the relationship between the independent variable, which is PTSD and the dependent variable, which is QOL. The relationship between the above mentioned variables were investigated through survey questions, which were given to the veterans to answer.

A cross-sectional research according to Sayer et al. (2009), is a method of research whereby many groups are tested assuming each group is a representative of all other groups when they are at the point in time. In this research the groups that were tested or
analyzed were the Caucasian veteran population and the African American population who served in Iraq, Afghanistan, or both.

**Selection and Characteristics of Participants**

The study was performed at a nonprofit organization that serves veterans in Manhattan, New York. The study included veterans who served in Iraq and Afghanistan or both in active-duty, and were diagnosed with PTSD. These veterans were released from active duty up to three years ago and are now living in the New York City area. Approval to conduct the research was granted by the president of the organization. Veterans were provided a written informed consent form and after reading the consent form, they had an opportunity to ask the researcher questions concerning the project.

**Inclusion and Exclusion Criteria**

To be included in the study, participants have to meet the criteria of being Iraq or Afghanistan veteran or both and diagnosed with PTSD. Veterans should have documented evidence of history of exposure to one or more life-threatening combat experiences. Veterans should also have a recall of distressing combat nightmares at least one night/month for the past one year.

Women veterans who are currently pregnant or are nursing infants were also excluded from the study. Veterans being treated currently for substance abuse or drug addiction for the past three to four months were also excluded from the study.
Data Collection

Before data were collected, the researcher asked the president of the organization to conduct the survey (Appendix B) and permission was granted (Appendix C). The study questionnaire was handed to veterans at the service organization in Manhattan, New York which were completed and dropped anonymously in a folder to be collected by the researcher on a daily basis. Veterans diagnosed with PTSD who were receiving services at the facility were identified as they were grouped in a particular conference room.

Instrumentation and Measurement

The survey consisted of questions concerning demographic characteristics of the veterans, combat exposure in Iraq, Afghanistan or both, and quality of life indicators they now experience. The instrument consisted of 2 existing surveys that were combined (Appendix). The survey consisted of 2 instruments: Combat Exposure Scale (Keane et al., 1989) and the Rand Health Corporation 36 item short form survey instrument (Miller et al., 2008). The items were rated on a 5-point frequency (1 = “no” or “never” to 5 = “more than 50 times”), 5-point duration (1 = “never” to 5 = “more than 6 months”), 4-point frequency (1 = “no” to 4 = “more than 12 times”) or 4-point degree of loss (1 = “no one” to 4 = “more than 50 %”) scale (Miller et al., 2008).

Rand Health Corporation 36-Item Short Form Survey Instrument

The RAND 36-Item Health Survey is designed to tap eight health concepts namely: physical functioning, bodily pain, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being,
social functioning, energy/fatigue, and general health perceptions (Schmitz and Kruse, 2007).

**Combat Exposure**

The Combat Exposure Scale (CES) is a seven-item self-report measure that assesses wartime stressors experienced by wartime combatants or those served in the military during wartime (Miller et al., 2008). Survey participants were asked to respond to the survey based on their exposure to various combat situations, such as firing rounds at the enemy and being under attack by the enemy on dangerous duty tour.

The total CES score (ranging from 0 - 41) was calculated by using a sum of weighted scores, which is classified into one of five categories of combat exposure ranging from “light” to “heavy” (Miller et al., 2008). Individuals who had a score ranging from 0-8 were had light exposure; 9-16 had light to moderate exposure; 17-24 had moderate exposure; 25-32 had moderate to heavy exposure; and those who scored between 33 and 41 had heavy combat exposure.

**Dependent Variable**

Veterans answered questions on eight health concepts on their quality of life. The questions were scored on a scale of 0-100, with 0 representing the lowest quality of life and 100 representing the highest quality of life. The combined scores are totaled as a percentage of the total possible points. Scores from each question that correlates with a specific category (example, social well-being, physical functioning, pain) were then averaged to determine the final score for each category. Scoring for all the categories was done in a similar manner.
Independent Variables

The independent variables of this study were place of deployment (Iraq, Afghanistan, or both), and combat exposure (light or heavy).

Covariates

Veterans also provided information on their gender and age.

Data Analysis Procedures

The research study utilized Statistical Package for the Social Sciences (SPSS) version 20 for the analysis of data. It is imperative that results are interpreted well in a quantitative research like this therefore, coding of variables was used. Variables like the place of deployment, combat exposure and quality of life variables, race, and gender of the veterans were all coded into the SPSS software in the computer. Chi-square and t-test were used to determine relationships and compare means of the scores.

Ethical Considerations

The completed surveys were entered and stored on the researcher’s computer, that was password protected to protect the privacy of the veterans like inform consent form, privacy form which veterans signed and returned after reading to guarantee their privacy. This was to guarantee that the study would be safe and confidentiality was kept at a highest level. The research was totally on voluntary basis and that was made known in writing to the veterans. Consent was given by the facility in writing that the research could take place there. This was made clear to the veterans before participation.
Chapter 4: Results

Chapter 4 represents the results of the study. The demographic variables of gender, race, ethnicity, place of deployment were included in the analyses. The research questions and the hypotheses were:

1. What is the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD?

   Ho: There is no difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

   Ha: There is a difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

2. How does quality of life differ between AA and Caucasian veterans who are diagnosed with PTSD?

   Ho: There is no difference in quality of life between AA and Caucasian veterans who are diagnosed with PTSD.

   Ha: There is a difference in quality of life between AA and Caucasian veterans who are diagnosed with PTSD.

3. Is there a difference in quality of life between AA and Caucasian veterans based on place of deployment?
Ho: There is no difference in quality of life between AA and Caucasian veterans based on place of deployment.

Ha: There is a difference in quality of life between AA and Caucasian veterans based on place of deployment.

**Descriptive Statistics of Participants**

The study population included 99 men and women veterans diagnosed with PTSD who served in Iraq, Afghanistan, or both. There were n = 58 (58.6%) males and n = 41 (41.4%) females in the study population. The age range frequency had 21-30 (n = 37; 37.0%); 31-40 (n = 38; 38.0%); and 41-50 (n = 24; 24.0%).

![Figure 2. Age of Participants](image)

**Race/Ethnicity of Participants**

The total study population were n = 99, of which AA were n = 53 (53.54%) and CA were n=46 (46.46%).
Figure 3. Race of Participants

Gender of Participants

In the study population, 58 (59%) of the veterans were male and 41 (41%) were female (Figure 4).
Descriptive Statistics of Independent Variables

Place of Deployment

Overall, a total 33 (33.3%) veterans served in Afghanistan only; 47 (47.5%) veterans served in Iraq only, and 19 (19.2%) veterans served in both places (Figure 4).

![Venn Diagram showing deployment of veterans in Afghanistan and Iraq](image)

**Figure 5. Deployment of Veterans**

Combat Exposure

The Combat Exposure was divided into two groups, namely (0 to17) group representing a light/low exposure to combat and (18 to 41) group representing a severe or higher exposure to combat based on the Combat Exposure Scale calculation used. Out of
a total of n = 53 participants of AA in the study population, 35.8% were exposed to light/low combat and 64.2% had heavy exposure. The CA participants had a total of n = 46 in the study population; and out of that 47.8% had a low level of exposure to combat and 52.2% had a heavy exposure to combat.

Figure 6. Combat Exposure of Veterans

Research Question 1

What is the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD?

Ho: There is no difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

Ha: There is a difference in the level of combat exposure between AA and Caucasian Veterans who are diagnosed with PTSD.

The percentages show the level of combat exposure using the Chi-square analyses. A score of 0 to 17 represents a low level of combat exposure while 18 to 41 represent a higher or heavier exposure. In the cross tabulation, it indicated that AA had 35.8% light
CE and CA had 47.8% light CE. On the other hand, AA had 64.2% level of heavy Combat Exposure (CE) while CA had 52.2% heavy CE. This represents a clear distinction that AA had a higher level of CE than CA in the study population. There was no statistical difference in combat exposure between AA and CA (P = 0.158). The data is represented in Table 1.

Table 1.

<table>
<thead>
<tr>
<th>Race</th>
<th>Light CE %</th>
<th>Heavy CE%</th>
<th>X²</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>35.8</td>
<td>64.2</td>
<td>0.307</td>
<td>0.158</td>
</tr>
<tr>
<td>CA</td>
<td>47.8</td>
<td>52.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. CE = Combat Exposure; X² = Chi square; AA = African Americans; and CA Caucasians.*

**Research Question 2**

*How does quality of life differ between AA and Caucasian veterans who are diagnosed with PTSD?*

Ho: There is no difference in quality of life between AA and CA veterans who are diagnosed with PTSD

Ha: There is a difference in quality of life between AA and CA veterans who are diagnosed with PTSD.

According to the Rand 36 Short form Survey which was used to calculate and determine the level of quality of life in the study population, the higher their score, the higher their quality of life and vice versa. However, I used a cutoff point/score of (69), this means that all scores 69 and below have a low quality of life according to the eight
different aspects of quality of life used in the calculation. All scores 70 and above is generally considered a high quality of life.

The results of the study show that Caucasian American veterans had an overall higher average quality of life score (63.03) than African American veterans (59.63). Specifically, Caucasian American veterans had higher quality of life scores in physical functioning, role limitation due to physical health, role limitation due to emotional problems, and emotional wellbeing. African Americans had higher quality of life scores in Energy/Fatigue, social functioning, and were less bothered by pain. However, both groups had similar scores with regards to their perceptions of their general health (Figure 7).

Figure 7. Quality of Life of Veterans

Note. AA = African American; CA = Caucasian American; PH = Physical Functioning; RL/PH = Role Limitation due to Physical Health; RL/EP = Role Limitation Due to...
Emotional Problems; EF = Energy/Fatigue; EWB = Emotional Well Being; SF = Social Functioning; GH = General Health

Research Question 3

*Is there a difference in quality of life between AA and Caucasian veterans based on place of deployment?*

Ho: There is no difference in quality of life between AA and Caucasian veterans based on place of deployment.

Ha: There is a difference in quality of life between AA and Caucasian veterans based on place of deployment.

Table 3 shows the quality of life and the three variables representing place of deployment in the study population (Iraq, Afghanistan, and both) among the two study races (CA and AA). The mean quality of life score for CA who were deployed to Iraq is statistically higher (p = 0.031) for CA than AA. The trend in the quality of life based on deployment in Afghanistan between AA and CA. As shown, the margins between the mean from AA (59.4158) and CA (64.0297) are not statistically wide. However, considering quality of life between AA and CA based on deployment to Afghanistan, the CA sample has a higher quality of life than the AA. Statistically, there is no strong trend between the two ethnic groups and the difference is not significant (.085). A statistically significant trend must show a value 0.05 or below.

The trend in the quality of life based on deployment in both Afghanistan and Iraq between AA and CA. As shown, the margins between the mean from AA (58.9347) and CA (58.5766) are wide. However, considering quality of life between AA and CA based on deployment to both Afghanistan and Iraq, the AA veterans has a slightly higher quality of life than the CA. Statistically, there is a difference in the quality of life between the two ethnic groups (0.003) who were deployed to more than one location.
Table 2.
Place of Deployment and Quality of Life

<table>
<thead>
<tr>
<th>Place of Deployment</th>
<th>Race</th>
<th>N</th>
<th>Mean</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QOL/Iraq</td>
<td>AA</td>
<td>29</td>
<td>60.8144</td>
<td>0.031*</td>
</tr>
<tr>
<td></td>
<td>CA</td>
<td>18</td>
<td>64.5072</td>
<td></td>
</tr>
<tr>
<td>QOL/Afghanistan</td>
<td>AA</td>
<td>15</td>
<td>59.4158</td>
<td>0.085</td>
</tr>
<tr>
<td></td>
<td>CA</td>
<td>18</td>
<td>64.0297</td>
<td></td>
</tr>
<tr>
<td>QOL/Both</td>
<td>AA</td>
<td>9</td>
<td>58.9347</td>
<td>0.003*</td>
</tr>
<tr>
<td></td>
<td>CA</td>
<td>10</td>
<td>58.5766</td>
<td></td>
</tr>
</tbody>
</table>

Note. QOL = Quality of Life; AA- African American; CA = Caucasian American * = Statistical significance.

Summary of Findings

The present study examined the association between CA and AA veterans diagnosed with PTSD in terms of quality of life relating to the level of combat exposure. Overall, AA had a greater level of heavy combat exposure (64.2%) than CA (52.2%). CA had an overall higher average QOL score (63.03) than AA (59.63). This is because many CA reported that they had less exposure to combat and combat related stressors than AA. From the study, the less exposed the veterans were to combat, the less likely that they developed PTSD after returning home, hence a better QOL. CA veterans deployed to Iraq or Afghanistan separately have better quality of life than AA (p = 0.03 and 0.085). However, AA veterans who were deployed to both Iraq and Afghanistan had significantly higher quality of life than CA (p = 0.003). This also because the AA who reported that
they went to both Iraq and Afghanistan were less exposed to combat or combat related stressors.
Chapter 5: Discussion, Conclusions, and Recommendations

Discussion

PTSD is a condition that affects many military veterans after they have served in Iraq or Afghanistan. The purpose of the study is to measure combat exposure for the two ethnic groups (AA and CA) as it relates to their QOL. Ninety-nine (99) participants were recruited from a non-profit veteran’s organization in New York City and were qualified for the study. They completed a survey questionnaire on combat exposure and quality of life.

Overall, this study revealed that a substantial number of AA’s reported that they have low quality of life possible due to high rate of combat exposure. CAs on the other hand had a better quality of life on the Rand 36 short form survey calculation due to less exposure to combat. These results are consistent with results from the different findings across various studies of African American and Caucasian Veterans concerning PTSD and quality of life. Such result is from the National Vietnam Veterans Readjustment Study (NVRS), which found differences between African American and Caucasian Vietnam Theater War Veterans in terms of readjustment after military service as in quality of life and the level of their combat exposure (Loo, 2003). African American Vietnam Theater Veterans had higher rates of PTSD than their Caucasian counterparts. Rates of PTSD in the study which took place in the 1990s showed 21% among African Americans, and 14% among Caucasians which is consistent or similar to the findings which were received in this current study (Loo, 2003).
Interpretation of the Findings

In the present study, a cross tabulation indicated that AA had 35.8% light CE and CA had 47.8% light CE. On the other hand, AA had 64.2% reported heavy Combat Exposure (CE) while CA reported 52.2% heavy CE. This represents a clear distinction that AA had a higher level of CE than CA in the study population. However, statistically, the Chi-square test did not show a strong trend of a higher CE between AA and CA (0.158) and the difference is not significant. A previous study conducted by Beals et al. (2003), revealed that African American veterans had greater exposure to war-related stressors and had more predisposing factors than the Caucasians veterans.

Other findings showed that the difference in the means for both AA (60.0994) and CA (63.0311; p-value 0.000) showed a statistical difference in the quality of life between AA and CA. This is because AA veterans are generally more likely to be exposed to high combat or combat related stressors more than CAs, which directly impacts their level of PTSD. This study and other studies conducted in the past cited in this paper have shown that PTSD affects the QOL of veterans. Therefore, the study has concluded that there is a difference in quality of life between AA and CA veterans who are diagnosed with PTSD with AA having the worse. A possible explanation for the higher quality of life of Caucasian veterans may be due to CA taking advantage of the services that are provided after returning home from deployment in Iraq or Afghanistan.
Research Questions

Research Question 1

What is the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD?

Ho: There is no difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

Ha: There is a difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

The results of this question showing that there is no statistical difference in the level of CE between AA and CA veterans nevertheless, the CA have slightly less exposure than their AA counterparts. The main reasons why that is the case in this research study was not ascertained but future research study when the sample size is especially increased could however help to answer some of these questions.

Research Question 2

How does quality of life differ between AA and Caucasian veterans who are diagnosed with PTSD?

Ho: There is no difference in quality of life between AA and CA veterans who are diagnosed with PTSD.

Ha: There is a difference in quality of life between AA and CA veterans who are diagnosed with PTSD.
Research Question 3

Is there a difference in quality of life between AA and Caucasian veterans based on place of deployment?

H₀: There is no difference in quality of life between AA and Caucasian veterans based on place of deployment.

H₁: There is a difference in quality of life between AA and Caucasian veterans based on place of deployment.

Strength and Weakness

To the best of my knowledge, this is the first study conducted for solely AA and CA military veterans as a comparative study. The study had some limitations that should be noted when considering the results. All estimates in the study were based on self-reported experiences in Iraq, Afghanistan or both places of deployment and that could have resulted in reporting bias. Also, the majority of the survey questions were geared towards only QOL. Finally, the population used was limited to only respondents in Bronx, Manhattan, Brooklyn and Queens Area. Therefore, generalizations to all veterans cannot be made. Besides, the low survey sample of 99 could have biased our results. In spite of these limitations, calculations obtained in this survey on QOL and PTSD prevalence among veterans were similar to those of a nationwide survey conducted in 2010 suggesting reliability of the current results (Dunn et al., 2011).
Recommendations

There are insufficient studies on the relationship between PTSD and health-related quality of life among veterans. Veterans with PTSD need to be provided with a variety of services to help them cope with their day-to-day activities. Veteran services may include mindfulness training and therapeutic and rehabilitative strategies to improve their quality of life. Regarding regulations, PTSD and QOL related issues among military veteran populations should be integrated into already existing laws at both federal and local levels in the U.S. Post-traumatic Stress Disorder, which is not like any other mental disease are not covered under these laws.

Conclusion

This study provided further evidence that the place of deployment and the level of combat exposure can influence QOL among the veteran population who served in Iraq, Afghanistan, or both and are diagnosed with PTSD. This study further indicated that combat exposure is determinant of PTSD, which subsequently affects different levels of quality of life. Further evidence was seen that a slightly more AAs than CAs veteran were exposed to combat but statistically they were the same. Overall, it was proven in the study that there is a difference statistically between AA and CA in terms of quality of life. However, CE is a direct variable that affects the level of quality of life because of PTSD.

The problem of having PTSD and combat exposure by veterans’ present two major public health problems and immediate intervention is required to address them. Additional efforts must be made to save the veterans from current, future, and potential
chronic disabilities and diseases that might result from having PTSD as a result of being exposed to combat. Policy makers, clinicians, public health professionals, the Veterans Administration (VA) need to collaborate to identify what programs work best to address these two problems among the veteran populations.

If programs are implemented and policies are enforced, veterans may have a decrease in PTSD diagnosis and severity due to combat exposure. Achieving this decline will be a great public health achievement because the quality of life of many veterans may be significantly improved. In addition, this decline will also help to decrease the overall health care costs associated with PTSD and combat exposure related diseases.
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APPENDIX I

January 12, 2015
Vice President (Veterans’ Division)
39 Broadway, Suite 1140, New York, NY 10006

RE: Permission to Conduct Research Study

Dear Mr. Vice President,

I am writing to request permission to conduct a research study at 39 Broadway, New York, NY 10006. I am currently enrolled in the Masters for Public Health program at Monroe College in the Bronx, New York, and am in the process of writing my Master’s Thesis. The study is entitled ‘Quality of Life of Veterans with Post Traumatic Stress Disorder in New York City, New York: A Comparative study between African American and Caucasian Veterans.

I hope that SUS will allow me to recruit male veterans diagnosed with PTSD receiving services in the facility. Veterans will anonymously complete a 3-page questionnaire (copy enclosed). Interested Veterans, who volunteer to participate, will be given a consent form to be signed (copy enclosed) and returned to the primary researcher (Jerry Bekoe) at the beginning of the survey process.

If approval is granted, Veteran participants will complete the survey in the conference rooms at the SUS facility between Mondays and Fridays. The survey process should take no longer than ten (10) minutes. The survey results will be pooled for the thesis project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either SUS or the veteran participants.

Your approval to conduct this study will be greatly appreciated. I would be happy to answer any questions or concerns that you may have at any time. You may contact me at my email Jbekoe24@gmail.com or Telephone 347-915-9610.

Please if approval is granted, kindly submit a signed letter of permission on your institution’s letterhead acknowledging your consent and permission for me to conduct this survey/study at this institution (39 Broadway). Thank you for your consideration.

Sincerely,

Jerry B. Bekoe
APPENDIX II

January 15, 2015

Vice President
Veterans' Division
39 Broadway, Suite 1140
New York, NY 10006

Dear Sir/Madam,

Approval Letter to Conduct Research

It is my understanding that Mr. Jerry Bekoe will be conducting a non-clinical research study at Services for the Undeserved Inc. facility located at 39 Broadway, Suite 1140, New York, NY 10006. The working title of the thesis study is Quality of Life of Veterans with Post Traumatic Stress Disorder in South Bronx, New York: A Comparative study between African American and Caucasian males.

Mr. Bekoe has informed me of the design of the study as well as the targeted population. I support this effort and will provide any assistance necessary for the successful completion of this study. If you have any questions, please do not hesitate to contact me. I can be reached at 646-760-2449 ext. 5452

Sincerely,

VP Veterans Services
APPENDIX III

Research Question and Hypothesis

1. What is the level of combat exposure between African American and Caucasian veterans who are diagnosed with PTSD?

H₀: There is no difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

Hₐ: There is a difference in the level of combat exposure between AA and Caucasian veterans who are diagnosed with PTSD.

2. Is there a difference in combat exposure and quality of life between AA and Caucasian veterans who are diagnosed with PTSD?

H₀: There is no difference in quality of life between AA and Caucasian veterans who are diagnosed with PTSD due to combat exposure.

Hₐ: There is a difference in quality of life between AA and Caucasians veterans who are diagnosed with PTSD due to combat exposure.

3. Is there a difference in quality of life among AA and Caucasian veterans based on place of deployment?

H₀: There is no difference in quality of life among AA and Caucasian veterans based on place of deployment.

Hₐ: There is a difference in quality of life among AA and Caucasian veterans based on place of deployment.
Instrument

Assessing Combat Exposure and Quality of Life of Veterans

1. How would you classify your race/ethnic group?
   1  2  3
   African American/Black  Caucasian  Other

2. What is your gender?
   1  2
   Male  Female

3. What is your age?
   1  2  3  5
   21-30  31-40  41-50  51 and older

4. Were you deployed to
   1  2  3
   Iraq  Afghanistan  Both

Combat Exposure Scale

Please circle the number above the answer that best describes your experience

1. Did you ever go on combat patrols or have other dangerous duty?
   1  2  3  4  5
   No  1-3x  4-12x  13-50x  51+times

2. Were you ever under enemy fire?
   1  2  3  4  5
   Never <1 month 1-3months  4-6months  7 months or more

3. Were you ever surrounded by the enemy?
   1  2  3  4  5
   No  1-2x  3-12x  13-25x  26+times

4. What percentage of the soldiers in your unit were killed (KIA), wounded or missing in action (MIA)?
   1  2  3  4  5
   None  1-25%  26-50%  51-75%  76 or more

5. How often did you fire rounds at the enemy?
   1  2  3  4  5
   Never  1-2x  3-12x  13-50x  51 or more

6. How often did you see someone hit by incoming or outgoing rounds?
   1  2  3  4  5
   Never  1-2x  3-12x  13-50x  51 or more
7. How often were you in danger of being injured or killed (i.e., being pinned down, overrun ambushed, near miss, etc.)?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
<td>1-2x</td>
<td>3-12x</td>
<td>13-50x</td>
<td>51 or more</td>
</tr>
</tbody>
</table>

Rand Health Corporation

36-item Short Form Survey Instrument

1. In general, would you say your health is:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>Excellent</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very good</td>
<td>2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Good</td>
<td>3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fair</td>
<td>4</td>
<td></td>
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<tr>
<td>Poor</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Compared to one year ago, how would your rate your health in general now?

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Much better now than one year ago</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat better now than one year ago</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>About the same</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat worse now than one year ago</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much worse now than one year ago</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

(Circle One Number on Each Line)

Yes, Limited Yes, Limited No, Not
a Lot a Little limited at All
3. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports

4. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf

5. Lifting or carrying groceries

6. Climbing *several* flights of stairs

7. Climbing *one* flight of stairs

8. Bending, kneeling, or stooping

9. Walking *more than a mile*

10. Walking *several blocks*

11. Walking *one block*

12. Bathing or dressing yourself

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of your physical health**?

**(Circle One Number on Each Line)**

13. Cut down the amount of time you spent on work or other activities  
   Yes   No
   1   2

14. **Accomplished less** than you would like  
   Yes   No
   1   2

15. Were limited in the *kind* of work or other activities  
   Yes   No
   1   2

16. Had **difficulty** performing the work or other activities (for example, it took extra effort)  
   Yes   No
   1   2

During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

**(Circle One Number on Each Line)**

17. Cut down the **amount of time** you spent on work or other activities  
   Yes   No
   1   2
18. **Accomplished less** than you would like

19. Didn't do work or other activities as **carefully** as usual

20. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

(Circle One Number)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

21. How much **bodily** pain have you had during the **past 4 weeks**?

(Circle One Number)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5
Very severe 6

22. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

(Circle One Number)

Not at all 1
A little bit 2
Moderately 3
Quite a bit 4
Extremely 5

These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling.

How much of the time during the **past 4 weeks** . . .
(Circle One Number on Each Line)

<table>
<thead>
<tr>
<th>Question</th>
<th>All of the Time</th>
<th>Most of the Time</th>
<th>A Good Bit of the Time</th>
<th>Some of the Time</th>
<th>A Little of the Time</th>
<th>None of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. Did you feel full of pep?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24. Have you been a very nervous person?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. Have you felt so down in the dumps that nothing could cheer you up?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>26. Have you felt calm and peaceful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>27. Did you have a lot of energy?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>28. Have you felt downhearted and blue?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>29. Did you feel worn out?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>30. Have you been a happy person?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>31. Did you feel tired?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

32. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

(Circle One Number)

All of the time 1
Most of the time 2
Some of the time 3
A little of the time 4
None of the time 5

How TRUE or FALSE is each of the following statements for you.

(Circle One Number on Each Line)
<table>
<thead>
<tr>
<th>33. I seem to get sick a little easier than other people</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don't Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>34. I am as healthy as anybody I know</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don't Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>35. I expect my health to get worse</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don't Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>36. My health is excellent</th>
<th>Definitely True</th>
<th>Mostly True</th>
<th>Don't Know</th>
<th>Mostly False</th>
<th>Definitely False</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>