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# Marriage Dissolution in the Active Duty Air Force

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*Walden University*

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# Walden University

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Walden University  
2017

Abstract

Marriage Dissolution in the Active Duty Air Force

by

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MS, Walden University, 2010

JD, Yeshiva University, 2006

BS, Touro College, 2000

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Psychology

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## Abstract

With the advent of the Global War on Terror in 2001, more than 2 million troops have deployed in support of contingency operations throughout the world. During this time, the divorce rates have increased throughout the military, hitting an all-time high in 2011, and dropping slightly thereafter. Enlisted members on active duty in the United States Air Force exhibited a higher rate of divorce than did their counterparts in any other branch of military service. At present, the reasons for the heightened Air Force divorce rates are still unknown. Perhaps more importantly, research has not identified which specific subgroups within the Air Force stand at the highest risk of divorce. Current research has identified several factors that contribute to divorce in military personnel. These factors include career group, gender, race, and deployments. The purpose of this archival quantitative study, based on the stress hypothesis, was to describe, compare, analyze, and explore divorce status of the active duty enlisted corps of the U.S. Air Force in 2011 ( $N = 247,644$ ), the year in which military divorce rates peaked. Research questions were answered using tables, bar graphs, and chi-square tests to explore associations among the variables. The study examined four independent variables, Air Force specialty, career group, gender, and race and found a statistically significant correlation between each of the independent variables and divorce rates. A weak association was found between deployments and divorce, with the greatest association found between gender and divorce. Among Air Force servicemembers, females were more than twice as likely to be divorced than males. This study may contribute to positive social change by reducing the rates of marital dissolution in the Air Force.

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Dedication

Dedicated to the Airmen of the 97<sup>th</sup> Intelligence Squadron, Offutt Air Force Base,

Nebraska.

*“We can handle it!”*

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## Chapter 1: Introduction to the Study

The rates of marital dissolution in the military have climbed steadily since September 11, 2001, and reached an all-time high in 2011 (Military Family Resource Center, 2011). That year, President Barak Obama reaffirmed a long-standing commitment and stated that strengthening the military family should be a national priority (The White House, 2011). Divorce rates in the Air Force are of particular concern. The rates of divorce among couples in the Air Force are higher than the rates of divorce in any other branch of military service and have been higher than the U.S. Department of Defense (DoD) average rate of divorce for over a decade (DoD, 2013). At present, the existing research fails to explain why divorce rates in the Air Force are higher than the divorce rates in other branches of the military.

The current literature attributes military divorce rates to a host of factors including demographic factors such as race and gender, as well as military-specific factors, such as military specialties and rates of deployment (Negrusa, Negrusa & Hosek, 2014). While some research on divorce rates in the military exists, the factors contributing to divorce in the Air Force are still not fully understood.

In this chapter I introduce various components of the research study. I begin with a background of the study, a problem statement, and purpose of the study. I then delineate the research questions and hypotheses, the theoretical foundations and nature of the study, operational definitions, as well as assumptions and limitations of the study. The chapter closes with a discussion of the significance of the study on psychological theory, practical application, and positive social change.

## **Background of the Study**

Consideration of the benefits of marriage to military servicemembers can be traced back to the second century Roman emperor Septimius Severus, who lifted a longstanding ban on soldiers marrying. The emperor believed that married soldiers would strengthen the Roman army and thereby allow him to remain in power (Campbell, 1978). Two thousand years later, in an era when the military is composed of volunteers rather than conscripts, the wisdom of Emperor Severus continues to ring true. The military family remains an integral component of U.S. military power (Lundquist & Xu, 2014), and supporting military marriages remains a national priority (The White House, 2011).

Research into the relationships and effects of military service on marital dissolution began in earnest during the immediate aftermath of World War II (Hill, 1949) and continued during the Vietnam Conflict (Heerwig & Conley, 2013). A smaller body of research focused on marriage and divorce among veterans of the Gulf War in the early 1990s (Angrist & Johnson, 2000).

The current wars in Afghanistan and Iraq, the Global War on Terror (GWOT), represent new challenges in our understanding of the nature of marital dissolution in military service. This war remains the longest ongoing, large-scale military engagement in American history. Over 2.1 million servicemembers have deployed in support of the war (Hosek, Kavanagh & Miller, 2006); Over 50,000 U.S. troops have been killed, and as many as 57% of those who deployed returned with some degree of mental health trauma (Pickett et al., 2015). Furthermore, the nature of military service and the relationship between military service and marriage has also changed in two key arenas. First, today's

military is made up of volunteers, unlike in previous wars where military service was a mandatory and a necessary rite of passage. Second, today's military is more racially diverse and is made up of the largest percentage of female servicemembers than at any time in our nation's history (Lundquist & Xu, 2014). Each of these differences behoove the researcher to reevaluate the earlier literature on military marriages that were conducted on a largely White, predominantly male population, many of whom were drafted into service against their will.

Divorce rates in the military have climbed steadily during the GWOT, hitting an all-time high in 2011 (Military Family Resource Center, 2011). Two major studies stand out among the body of research on marital dissolution during these wars. Karney and Crown (2007) conducted a quantitative study of the entire military, using archival data maintained by the Defense Manpower Data Center (DMDC). The authors found that, contrary to what was commonly believed at the time, servicemembers who deployed were less likely to divorce than servicemembers who hadn't deployed.

The researchers, however, did find one aberration to their study. While active duty, National Guard, and reserve components of all branches of service who deployed were less likely to divorce, members of the active duty component of the Air Force were the only demographic who were more likely to divorce as a result of deployments. The researchers were at a loss to explain why the marriages of active duty Air Force servicemembers reacted differently to deployments than the rest of the armed forces.

Negrusa et al. (2014) conducted a similar study using archival data maintained by the DMDC. Their results contradicted those of Karney and Crown (2007), finding that

deployments increased the chances of divorce for married military service members across all branches of the uniformed services. Yet, the research found the highest correlation between deployments and divorce among members of the Air Force. These researchers, like those who came before them, could not explain why the members of the Air Force reacted differently to deployments than members of other branches of service.

Negrusa et al. (2014) conducted similar research, albeit on a later cohort of troops. In contradistinction to earlier findings, they determined that deployments increased the overall likelihood of divorce for all servicemembers. However, like Karney and Crown (2007), the study found that the length of time a servicemember was deployed correlated with a significantly higher divorce rate for members of the Air Force than it did for troops in sister services. Like those before them, this research also did not explain why members of the Air Force reacted differently to deployments than members of other branches of service.

While the research of Karney and Crown (2007) and Negrusa et al. (2014) each sets forth contradictory conclusions, both studies recognize a gap in the research as well as several themes in common that warrant further study. First, divorce rates in the Air Force are worse than divorce rates throughout the DoD. Next, further exploratory research needs to be conducted at the occupational level. For example, aircraft maintainers and security forces troops should not be treated as a single population. Each group has a unique set of stressors that need to be explored individually. As part of the anticipated exploratory study, two other demographics also come into play race, and gender.

Teachman and Teadrow (2008) found that race plays a strong role in understanding military divorce rates. As discussed at length in Chapter 2, the divorce rates for certain racial groups are higher in the Air Force than in the Army. Furthermore, gender also plays a role in our understanding of military divorce. In the military, the rates of divorce for women are as high as three times the divorce rates for men (Karney & Crown, 2007). As such, an exploratory study of divorce in the Air Force must include race and gender alongside occupational groups.

### **Problem Statement**

Marital dissolution among uniformed servicemembers is a national concern that impacts the security of our country (Lundquist, 2007; The White House, 2011). The existing body of research, discussed at length in Chapter 2, attributes military divorce rates to a host of factors including both demographic factors that may apply to the civilian population, as well as military-specific factors such as deployments (Negrusa et al., 2014). But despite the significant amount of literature on the topic of the causes of divorce in the military, the possible relationship between deployments and divorce is still not fully understood. This problem is especially germane for enlisted Air Force families.

Within the active-duty component of the military, divorce rates in the enlisted corps of the Air Force have been higher than the DoD average for over a decade. In 2000, the divorce rate for enlisted Air Force servicemembers was 3.6% compared to 2.9% across the DoD; in 2005 the enlisted divorce rate in the Air Force was 3.7% compared to 3.5% across the DoD; in 2010 the enlisted divorce rate in the Air Force was 4.5% compared to 4.1% across the DoD; in 2011 the enlisted divorce rate in the Air Force was

4.6% compared to 4.1% across the DoD; and in 2012 the enlisted divorce rate in the Air Force was 4.4% compared to 3.9% across the DoD (DoD, 2013).

Table 1

*Comparison of Active Duty Enlisted Divorce Rates Between the Air Force and Department of Defense*

Variable	2005	2010	2011	2012
Air Force enlisted average	3.6%	3.7%	4.6%	4.4%
DoD enlisted average	2.9%	3.5%	4.1%	3.9%

*Note.* Data from “2012 demographics profile of the military community,” Department of Defense, 2013.

The military consists of two membership classes, officers and enlisted personnel. Divorce rates among officers of all branches of the military averaged at about only one third of the divorce rates among their enlisted counterparts. Ironically, between 2000 and 2012, Air Force officer divorce rates have consistently been lower than average DoD officer divorce rates (DoD, 2013). Yet, despite the familial benefits for Air Force officers, enlisted Air Force servicemembers—80% of the active component of the Air Force—have consistently experienced above average divorce rates for over a decade.

Common belief often attributes the rise in military divorce rates to the increased deployments, overseas missions in support of armed conflicts in furtherance of the GWOT (Karney & Crown, 2007). Yet, contrary to this commonly held belief, many servicemembers have reported that their marriages have been strengthened as a result of their respective deployments (Baptist et al, 2011). In fact, a longitudinal, quantitative

study across the entire Department of Defense found that deployments reduced the risk of divorce among servicemembers overall (Karney & Crown, 2007). Karney and Crown (2007) found that enlisted soldiers, sailors, and marines who deployed were less likely to divorce upon returning home. Only marriages among couples in the active component of the Air Force experienced increased divorce rates in relation to increased deployments (Karney & Crown, 2007).

A subsequent quantitative study confirmed the negative effects of deployments on Air Force marriages. Unlike Karney and Crown (2007), Negrusa et al. (2014) found that deployments increased the overall likelihood of divorce for servicemembers throughout the military. However, like Karney and Crown, the study found that deployments were more detrimental to Air Force marriages than to marriages in any of the sister services of the U.S. Armed Forces.

The Air Force continues to experience not only the highest rates of divorce in the military, but also the highest degree of positive correlation between deployments and divorce. This is puzzling, especially given the fact that deployed airmen experience less ground combat than soldiers or Marines (Karney & Crown, 2007).

The military is not a monolithic society with equal risk of divorce across all populations and branches of service. Each branch of service embodies a unique set of stressors and a unique rate of divorce. Moreover, the different subpopulations within each branch of service, also experience different stressors and divergent rates of divorce. Specifically, occupation, race, and gender all play a role in understanding military and Air Force divorce rates. Each factor must be further explored to identify those who are

the highest risk of divorce as well as to understand how the military stressors affect the diverse groups of military subpopulations differently. The existing body of literature behooves the researcher to conduct a smaller scale quantitative study on specific subpopulations within the Air Force to better to understand divorce trends and deployment effects within this particular branch of service. These subpopulations include occupation (Karney & Crown, 2007; Negrusa et al, 2014), race (Teachman & Teadrow, 2014), and gender (Kelly, Nilsson & Berkel, 2014).

### **Occupation**

At present, it is established that different military occupations experience varying rates of divorce. Each military occupation has a distinct mission, culture, and degree of military stressors that factor into a unique divorce rate among the families in each occupational specialty. We also know that in the Army, certain career fields react to deployments differently. For example, infantry troops who deployed were less likely to divorce than intelligence troops who deployed (Negrusa et al, 2014). Yet, similar exploratory research has never been conducted on the Air Force, the branch of service most likely to experience an increase in divorce rates as a result of deployments.

Several studies have already examined the divergent levels of military stressors in the Air Force that are believed to serve as the underlying causes of military divorce and are inherent in the different career fields (Chappelle, McDonald, Thompson, & Swearingen, 2012; Cigrang et al., 2014, Otto & Weber, 2013; Tortella, 2009; Tvaryanas & Maupin, 2014). These studies, however, consisted of small-scale, qualitative, studies, many of which only looked at stress rather than how stress translated into divorce. To

date, no one has conducted a large scale, quantitative study to explore the divorce rates among the different career fields in the Air Force. Researchers still do not know which Air Force career fields have the highest rates of divorce or which career fields experience the highest degree of positive correlation between rates of deployment and rates of divorce.

### **Race**

Teachman and Teadrow (2008) posit that race accounts for one of the prime differentials in rates of divorce. Yet, this distinction in divorce rates of couples belonging to various races appears to be mitigated through military service. Most research only addresses the differences between Black and White couples. Asian, Native American, and multiracial military couples have not been adequately studied.

Among civilian couples, Whites exhibit a lower rate of divorce than Black couples. For example, among civilian women, 54% of White first marriages will remain intact after 20 years while only 37% of Black marriages will remain intact during that same period. (Copen, Daniels, Vespa, & Mosher, 2012). Similar disparities were found among civilian men, though not as pronounced as among women (Copen et al., 2012).

Military service has been found to moderate the racial differential of divorce. Lundquist (2006) found no difference in the divorce rates of White and Black military couples. The findings were attributed to a reduced rate of racially related stressors that Black couples must face in the civilian world but were not present in the military. Lindquist argued that the level playing field offered by the military to all members,

regardless of race, improved the marriage rates of military couples and led to equal rates of divorce for members of all races.

A more nuanced follow-up study found that the beneficial effects of military service were only present among Army couples. Black couples in the Air Force and other branches of service besides the Army continued to experience higher divorce rates than White couples (Teachman & Teadrow, 2006). In other words, research indicates that Black couples experience a higher level of stress in the Air Force than do White couples. This research falls in line with the stress hypothesis, the theoretical framework of this study that posits that military stress leads to heightened divorce rates. At this point, we do not know whether Black couples in different Air Force career fields experience different levels of stress. Also unknown is how deployments factor in to the racial differential in divorce rates.

### **Gender**

According to Karney and Crown (2007), gender accounts for the greatest differences in military divorce rates. The divorce rate of female veterans is more than double the divorce rate of civilian women who had never served in the military, and divorce rates of female servicemembers are several times higher than the divorce rates of male servicemembers. The disparities in male-female divorce rates are further exacerbated the longer the servicemember deploys. At present, we do not understand why the divorce rate is so much higher for women than it is among men. We also do not know whether this phenomenon holds true only among certain career fields or whether this is a systemic issue throughout the Air Force as a whole.

### **Purpose of the Study**

The purpose of this archival, quantitative study was to describe, compare, analyze, and explore divorce status of the active duty enlisted corps of the U.S. Air Force in 2011 ( $N = 247,644$ ), the year in which military divorce rates peaked at an all-time high. The methodology of this study, as discussed more fully in Chapter 3, was to compare divorce status among career groups by race, by gender, and by deployments in order to better understand this phenomenon and identify those most at risk for divorce in the Air Force.

### **Research Questions and Hypotheses**

The research questions and hypotheses were derived from a review of the literature in the areas of military marriages, deployments and mental health, gender in the military, race in the military, deployments, and divorce. The following five research questions and hypotheses were used in the present study. The answers utilize both descriptive and inferential statistics. A thorough explanation of the analytical methods used to answer each research question is presented below in Chapter 3.

RQ1: What are the differences in divorce status among each of the 95 ordinary enlisted Air Force Specialties (AFSs) during fiscal year 2011?

$H_0$ 1: The divorce statuses across all AFSs are statistically equal.

$H_a$ 1: Different AFSs exhibit statistically significant different divorce statuses.

RQ2: What are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011?

$H_02$ : The status of divorce among all racial categories and genders are heterogeneous.

$H_a2$ : The differences in status of divorce among the various racial categories and genders are statistically significant.

RQ3: What are the differences among the six Air Force career groups in divorce status during fiscal year 2011?

$H_03$ : The rates of divorce across all Air Force career groups are homogeneous.

$H_a3$ : The rates of divorce among the six Air Force career groups are statistically significant.

RQ4: Does divorce status within the six career groups vary by gender and race during fiscal year 2011?

$H_04$ : The status of divorce among specific demographic groups are equal across all six Air Force career groups.

$H_a4$ : The status of divorce among specific demographic groups within the six Air Force career groups is statistically significant.

RQ5: Does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011?

$H_05$ : There is no correlation between divorce status and deployment rates across all six Air Force career groups.

$H_a5$ : There is a statistically significant correlation between divorce status and deployment rates across all six Air Force career groups.

### **Theoretical Foundation**

The stress hypothesis serves as the underlying theoretical foundation for this study. This theory originated in the post-World War II era research of Reuben Hill (1949). Hill posited that the military poses a degree of stress on families that is not present among civilian cohorts. These stressors include isolation from family and friends, spousal separations, shift work, hazardous duty, deployments, and a constant feeling that the military and family are each competitively vying for the servicemember's primary level of attention (Segal, 1986). The stress hypothesis suggests that military families who face the greatest levels of stress will exhibit the highest levels of divorce.

Deployments, especially combat deployments, are often viewed as the ultimate form of marital stress (Karney & Crown, 2007). Deployments are also correlated with a host of mental health disorders ranging from substance abuse to posttraumatic stress disorder (Creech, Swift, Zlotnick, Taft, & Street, 2015). These mental health stressors, in turn, negatively affect the marital satisfaction of soldiers (Karney & Trail, 2017).

As applied to the present study, four subhypotheses emerge from this theoretical framework. First, this theory would indicate a positive correlation between deployments and divorce. (Negrusa et al., 2014). This theoretical framework would also indicate that Airmen who serve in operational roles—those roles in which troops engage directly with an enemy, which are arguably the most stressful occupations in the Air Force—would encompass a greater number of divorced individuals than would Air Force members who serve in supportive military occupations.

Research has also indicated that female servicemembers face an exceptionally high rate of military-related stress. The unique stressors that affect women more acutely than men include physiological stressors that may result from equipment and gear designed for males; emotional stressors, such as family separation; and criminal stressors, such as military sexual trauma (Boyd, Bradshaw, & Robinson, 2013). Indeed, Negrusa et al. (2014, p. 475) found that “compared to males, female servicemembers are always more likely to divorce as a result of time in deployment.”

Finally, research has indicated that Black troops face more racially-related stress in the Air Force than in the Army (Teachman & Teadrow, 2008). Thus, pursuant to the stress hypothesis, Black Air Force servicemembers may have a heightened rate of divorce.

### **Nature of the Study**

A quantitative research design was selected for this study. Quantitative methods focus upon empirically objective statistical measurements that can in turn be used to explain a given phenomenon (Babbie, 2015). Divorce status, the independent variable in this study, was inherently empirical and thus most suitable to quantitative analysis.

Quantitative analysis also enables the study to be more comprehensive and accurate. The study analyzed archival data from an entire population of Air Force servicemembers ( $N = 247,644$ ), while a similar qualitative analysis would limit the research to a small convenience sample. Furthermore, inferential qualitative surveys have previously been assailed as inaccurate and limited by a retroactive perception of causality

between deployments and marital dissolution that may not accurately reflect the true association between the two variables (Baptist et al., 2001).

The archival data at issue is maintained by the Air Force Personnel Center (AFPC). The Air Force records and maintains each of the relevant variables as a matter of policy. Both Karney and Crown (2007) and Negrusa et al. (2014) utilized similar data sets in their respective research. The data was obtained through a request made pursuant to the Freedom of Information Act (FOIA). Any member of the public is welcome to make a similar request.

The decision to utilize archival data was made due to considerations of practicality, ethics, and accuracy. First, the sheer size of the population ( $N = 247,644$ ) makes it extremely impractical to obtain primary data, especially when the relevant data has already been collated by the Air Force. Next, archival data minimizes the ethical and privacy concerns inherent in collecting primary data from a protected population, that is, the military. Finally, archival military personnel records are believed to be the most accurate means of measuring the relationship between deployments and divorce (Karney & Crown, 2007; Negrusa et al., 2014). Self-reporting surveys of a similar nature have been found to be less valid (Sanford, 2010).

### **Definitions**

The following operational definitions are set forth for this study.

*Active component:* Full-time servicemembers, to exclude members of the National Guard and Reserves. The active component makes up about 51% of the military (Office of the Deputy Under Secretary of Defense, 2013).

*Air Force specialty (AFS):* A specific occupation assigned to each Air Force servicemember. Each AFS is a subset of a career group. For example, the AFS “pharmacy technician” falls under the medical career group. The AFS is the primary indicator by which an Air Force servicemember identifies that member’s mission and purpose in the Air Force. There are 172 AFSs overall (Air Force Instruction 36-2101, 2013). As discussed in Chapters 1 and 3, 94 AFSs were studied.

*Air Force Specialty Code (AFSC):* A three- digit alphanumeric code assigned to each Air Force servicemember that describes the individual’s primary duty to the Air Force. Each AFSC begins with a number between one and nine that designates the Airman’s career group. The subsequent letter and number describe the individual’s Air Force specialty (Air Force Instruction 36-2101, 2013).

*Career group:* One of nine broad career categories in the Air Force under which each enlisted Air Force servicemember is identified. The nine career groups are (a) Operations, (b) Logistics and Maintenance, (c) Support, (d) Medical, (e) Professional, (f) Acquisition, (g) Special Investigations, (h) Special Duties, and (i) reporting identifiers for Air Force servicemembers awaiting a change of status (e.g.. servicemembers who are still undergoing initial training, prisoners, or wounded warriors; Air Force Instruction 36-2101, 2013). As explained in Chapter 3, career groups seven through nine present too many confounding variables, and are therefore excluded from this study.

*Contingency operations:* An overseas operation designated by the Secretary of Defense in which members of the armed forces may become involved in combat with an

enemy of the United States or with a hostile military force (Armed Forces, General Military Law, 2012)).

*Deployments:* According to some researchers, any movement to an overseas location to accomplish a military task or mission. Deployments, as broadly defined by these researchers, includes training missions (Negrusa et al., 2014).

*Deployment rate:* For purposes of this research, the “Air Force Specialty Critical Manning List, fiscal year 2011,” which classifies the deployment rates for Air Force career groups. This information, generated and maintained by the AFPC, utilizes an algorithm of personnel available and days deployed to determine whether a subgroup is categorized as (a) high (b) medium, or (c) low.

*Divorce status:* The number and percentage of personnel in each Air Force subcategory who are divorced. In 2011, 91% of basic trainees entered the Air Force single, while only .03% entered the Air Force divorced (AFPC, 2016). Thus, while the archival data to be studied does not specifically state whether or not a divorce occurred while the servicemember was in the military; there is a 99.7% chance that the divorce occurred while on active duty.

*Global War on Terror (GWOT):* An unofficial term coined by President George W. Bush in the aftermath of the September 11, 2001, attacks on the United States, referring to overseas military engagements to combat terrorism. These military engagements occurred throughout the the Middle East, Southeast Asia, and the Horn of Africa; primarily in Afghanistan and Iraq. GWOT encompasses multiple military campaigns including Operation Enduring Freedom (OEF) in Afghanistan, as well as

Operation Iraqi Freedom (OIF) and Operation New Dawn (OND) in Iraq (Office of the Deputy Under Secretary of Defense, 2013).

*Operation Enduring Freedom (OEF)*: The official designation for the U.S. military engagement in Afghanistan from October, 2001, until December, 2014 (Fischer, 2014).

*Operation Iraqi Freedom (OIF)*: The official designation for the U.S. military engagement in Iraq from March, 2003, until September, 2010 (Fischer, 2014).

*Operations tempo*: The “deploy-to-dwell” ratio of an individual or unit. The amount of time deployed compared to the amount of time “dwelling” at home. The longer an individual or unit is deployed, the higher the operations tempo (Karney & Crown, 2007).

### **Assumptions**

Two assumptions were necessary in order to conduct this study. First, it was assumed that the archival data maintained by the Air Force was accurate. Karney and Crown (2007), Negrusa et al. (2014), and others have established the reliability of this form of data.

Next, it was assumed that the deployment ratios within each of the six career groups and 94 ordinary enlisted specialties are roughly equal for all individuals involved. In other words, for this study I assumed that all members of a given AFS have deployed for the same length of time. For example, personnel specialist (AFSC “3S0”) comprise one of the 95 enlisted specialties that were studied. If the archival data stated that personnel specialists on average deployed for 90 days that year, I assumed that each

individual deployed for that length of time. This assumption was necessary because, due to privacy concerns, the Air Force will only release the deployment rates of AFSs as a whole. The Air Force will not release the deployment rates for individual Air Force servicemembers. Lyle (2006), Negrusa et al. (2014), and Savych (2008), lend credence to this assumption, noting that deployments are normally related to unit necessity and outside an individual's control.

### **Scope and Delimitations**

The population for this study ( $N = 247,644$ ) was designed to maintain validity and maximize generalizability. Only active component members of the Air Force will be included in this study. Members of the National Guard and Reserves have been excluded so as to limit external confounding variables that may have been present in those members' civilian lives (Karney, Loughran & Pollard, 2014).

Officers were also excluded from the study. Unlike the divorce rates of enlisted troops, the divorce rates of officers are well below the DoD average. The demographic and sociographic characteristics of officers are different than those of enlisted troops. On average, officers are more educated, older, and earn more money than their enlisted counterparts. Moreover, the nature of the work performed is also different (Angrist & Johnson, 2000). As such, the inclusion of officers in the study was of less concern to me and may have potentially clouded the validity of the study. Future research may compare the two components of personnel in the Air Force.

The study also excluded members of transitional career groups; temporary special assignments, or designations (e.g., prisoners or wounded warriors) that presented too

many confounding variables to have been included in the statistical analyses. Finally, in an effort to maximize external validity, the study analyzed an entire population instead of just a sample.

### **Limitations**

The chief limitation to this study was that individual data relating to the deployment tempos of Air Force servicemembers are masked due to classification concerns. In other words, the archival data used in this research did not state whether a person who divorced also deployed. Instead, the available data listed an overall deployment rate for the entire population of each of the 187 AFSs. In this research I assumed that deployment ratios were more or less uniform for each group (Engel, Hyams & Scott 2006; Lyle, 2006, Negrusa et al., 2014; Savych, 2008).

Another limitation of the study was that having rejected the null hypothesis and finding heterogeneity of divorce status among the different AFSs that were unrelated to corresponding deployment ratios, the results only illustrated which groups had the highest prevalence of divorce. Subsequent research will be necessary to explain why the instances of divorce are higher for those subgroups.

### **Significance of the Study**

This research has the potential to improve the lives of countless military families. The research may bear significance to theoretical understanding, practical application, and contribute to positive social change.

**Significance to Theory**

The study may contribute to our understanding of the stress hypothesis as it pertains to marital dissolution among military couples. While research on the stress hypothesis dates to the post World War II era (Hill, 1949), the nature and stressors of military service have changed drastically. Today's military is more diverse, more educated, and more specialized than the armed forces under which the stress hypothesis was first conceptualized. Today's troops are also an all-volunteer force; meaning that military service is no longer a rite of passage that was contemplated by every couple during the previous draft eras (Lundquist & Xu, 2014).

The research in this study may broaden our understanding of the stress hypothesis, particularly regarding deployments and specific Air Force demographics and career groups, a heretofore unstudied topic.

**Significance to Practice**

This research may have practical significance. The exploratory nature of this study has illuminated many of the subgroups in the Air Force who are the highest risk of divorce, thereby enabling senior military leadership, community caregivers and social scientists to focus marital enhancement programs on those who need it most. Furthermore, post-hoc analysis of the characteristics and nature of the Air Force career fields with the lowest rates of divorce may yield cross-sectional adaptations that can be utilized to reduce divorce across the Air Force.

### **Significance to Social Change**

The research may contribute to positive social change on both the individual and organizational levels. On the individual level, the research may help improve servicemembers' marriages and families. On the organizational level, reducing divorce may enhance the operation readiness and reenlistment rates of servicemembers (Lundquist, 2007), thereby improving the national security of our country.

### **Summary and Transition**

Divorce remains an oft studied but still not understood facet of military service, particularly in the Air Force, where enlisted members exhibit a higher divorce rate than members of the Army, Navy, or Marines. Furthermore, the negative correlation between deployments and divorce rates was also higher among members of the Air Force than it was for troops who served in other branches of the military, especially among women (Negrusa et al., 2014). Racial makeup also seems to play a role in military divorce (Teachman & Teadrow, 2008).

This chapter identified a gap in the existing literature and developed a need to study Air Force divorce on a demographic level. The demographics studied included occupation, race, and gender, as well as the interactions between those demographics and rates of deployment. The research questions were designed pursuant to the stress hypothesis (Hill, 1949; Karney & Crown, 2007), a theory that attributes divorce in the military to a heightened level of stress that is not present in civilian life.

This quantitative study employed a mix of descriptive and analytical statistics to compare divorce status among the different Air Force subgroups and to analyze the

moderating effects of deployments. Research questions were answered using contingency tables, bar graphs, and a chi-square test to explore the association between deployment rate group and divorce status.

Chapter 2 consists of a literature review of military divorce, deployments and mental health, and the stress hypothesis. Chapter 3 describes the research methods. Chapter 4 presents the results of the descriptive statistics and statistical analysis. Chapter 5 provides a summary of the research, interpretations of the findings, recommendations for future research, and an explanation of how the study may contribute to social change by improving family life for military servicemembers.

## Chapter 2: Literature Review

### **Introduction**

Durable marriages, while of interest to families throughout the country, play an especially important role in military life. Servicemembers who are in satisfying marriages are more mission-focused, more likely to reenlist, and exhibit a higher level of morale than similarly situated troops who are either unmarried or divorced (Saltzman et al., 2011). Accordingly, the increase in military divorces that occurred during the last decade has been subject to considerable attention and research. Yet despite significant research, the causes of marital dissolution in the military are still not fully understood.

Deployment is one factor that has received considerable attention in understanding divorce in the military. However, while often attributed as the prevailing cause of military divorce, it has recently been found that deployments may be less detrimental than formerly thought (Karney et al., 2012). Research also indicates that the divorce rates within the individual branches of the military—the Army, Navy, Air Force, and Marines—each react differently to deployments and must, therefore, be studied independently (Karney & Crown, 2007). Within the DoD, the Air Force appears significantly more susceptible to deployment-related marital dissolution than any other branch of service (Negrusa et al., 2014). Further research is necessary to determine how deployments affect divorce and why marriages in the Air Force react differently to deployments than other branches of military service.

In this chapter I summarize the existing literature on divorce in the military, particularly in the Air Force. This literature review begins with an outline of the

theoretical concepts of the stress hypothesis as it pertains to military marriages. I then address the benefits of marriage overall and the additional benefits of healthy marriages among military personnel. I proceed to summarize the literature on deployments and divorce, deployments and related mental health issues that may influence divorce, and differences in deployment-related divorce rates between the Air Force and sister services, as well as additional divorce-related demographic data that make the Air Force unique among the uniformed services. Finally, in this literature review I address precedence within the existing literature to study individual career fields within the Air Force rather than addressing the entire service as a single, homogeneous unit.

### **Literature Search Strategy**

There is a substantial body of literature on the effects of deployments on servicemembers, no doubt due to the increased media attention and research interest given to the GWOT during this past 15 years. Research for this review was obtained and selected primarily through the Walden University library and Google Scholar. The most common databases used included PsycARTICLES and PsycINFO, as well as EBSCO (Academic Search Complete). Together, these electronic databases embody nearly all the extant academic, peer-reviewed research. Additional data was obtained through the DoD reports and products that are publicly available through the Internet.

The following descriptive search terms were used: *military marriage, divorce, military divorce, deployment and divorce, deployment and mental health, deployment and PTSD, PTSD and divorce, mental health and divorce, women and PTSD, women and divorce in the military, race and divorce in the military, divorce in the Air Force, Air*

*Force marriage, mental health and family functioning, career field and Air Force, differences between military career fields, and military occupational specialty (MOS) and divorce.* These search terms were used individually and in combinations with one another. The materials obtained through these search terms were subsequently evaluated for credibility, peer-review, publication date, and relevance. Additional preference was accorded to research published within the past five years.

### **Theoretical Foundation**

The stress hypothesis serves as the underlying theoretical foundation for this study. This theory, which appears throughout the reviewed literature, evolved from the research of Reuben Hill (1949) on military families in the immediate aftermath of World War II. The stress hypothesis posits that the stressors inherent to military life pose an undue burden on marriages. These stressors include frequent moves, isolation from friends and family, spousal separations, and deployments (Segal, 1986). Indeed, the military is the only occupation wherein members can be compelled to face the risk of death; an extreme form of personal and familial stress (Lande, 20014). Pursuant to this theory, couples who experience fewer stressors should fare better than couples exposed to a greater level of stress.

Military families are subject to frequent moves every few years. This not only makes it difficult to establish new roots in a local community, it also severs or degrades preexisting ties with friends and family back home (Segal, 1986) Furthermore, military couples also spend more time apart due to military service. This time apart results from shift work at irregular hours, attendance at military schools, training exercises, and most

notably, from deployments. Marital separation, as a result of military life, often inhibits positive bonding, a necessary component of marital success (Gottman, Ryan, Carrere, & Erley, 2002; Markman, Rhoades, Stanley, & Whitton, 2010)

Deployments, especially combat deployments, are frequently considered an extreme form of marital stress (Karney & Crown, 2007). Moreover, deployments are correlated with a host of mental health disorders ranging from substance abuse to PTSD (Creech et al., 2015). These scars of war understandably pose an additional, often insurmountable, strain on military marriages.

As applied to the present study, four subhypotheses emerge from this theoretical framework. First, this theory would indicate a positive correlation between deployments and divorce rates. The longer an Air Force servicemember is deployed, the longer the couple is separated, and the greater the stress on the marriage (Negrusa et al., 2014).

This theoretical framework would also indicate that Air Force servicemembers who serve in operational roles, the most dangerous and stressful occupations in the Air Force, would exhibit a greater divorce rate than ordinary servicemembers.

Research also indicates that female servicemembers face an exceptionally high rate of military-related stress. The unique stressors that affect women more acutely than men include physiological stressors that may result from equipment and gear designed for males; emotional stressors, such as family separation; and criminal stressors, such as military sexual trauma (Boyd et al., 2013). Indeed, the divorce rate of women in the Air Force is more than double the divorce rate of men in the Air Force (Karney & Crown, 2007). Pursuant to the stress hypothesis, this study confirmed the results of Karney and

Crown (2007) and found that female Air Force servicemembers have a higher rate of divorce than men. This framework would also indicate that women in the most deployed or most stressed career fields would have the highest rate of divorce overall.

Finally, research indicates that Black troops face a higher degree of racial- related stress in the Air Force than in the Army (Teachman & Teachman, 2008). Thus, pursuant to the stress hypothesis, Black Airmen would have a heightened divorce rate.

Furthermore, Black servicemembers serving in the most deployed or most stressed career fields would have an even higher rate of divorce than their peers with less stressful jobs or with fewer deployed missions.

Overall, the stress hypothesis serves as an integral tool in understanding divorce in the Air Force. Individually, deployments, operational stress, gender, and race each contribute stressors to a military marriage. The following literature review will summarize the existing research in detail.

### **Marriage in the Military**

Researchers have recognized the benefits of marriage for over 150 years. In 1851, British physician William Farr found that married individuals benefited from lower mortality and better health than those who were single (Farr, 1858). Recent meta-analysis involving more than 6.5 million people in 11 different countries has confirmed that separated and divorced individuals are at a significantly increased risk of early death compared to those who are married (Sbarra, Law, & Portley, 2011).

Marriage has also has been linked to physiological factors, including immunology, heart disease, cancer, and diabetic health (Robles, Slatcher, Trombello &

McGinn, 2014). Couples in well-adjusted relationships exhibit the greatest physiological benefits of marriage (Reese, Somers, Keefe, Mosley-Williams, & Lumley, 2010). The physiological benefits of marriage, though strongest among couples in satisfying relationships, arguably apply even to individuals in less than satisfying relationships. For men, marital status (simply being married versus being single or divorced) had the greatest effect on morbidity and mortality, while for women, marital satisfaction played a greater role than marital status (Fincham & Beach, 2010). The overall correlation between physical health benefits and marriage quality remain valid even after accounting for a slight publication bias that favors the publication of studies whose findings report a positive association between marital quality and health (Robles et al., 2014).

The benefits of marriage are also manifest among servicemembers in the military. Married troops exhibit lower rates of depression, and fewer job-related problems than their single counterparts (National Institute of Mental Health, 2011). Furthermore, research indicates that married servicemembers are more satisfied with military life overall. Married troops who complete an initial term of enlistment are more likely to continue to reenlist than their unmarried peers (Karney & Crown, 2007). Conversely, poor family relationships spill over into problems at work, low morale, and reduced military readiness (Saltzman et al, 2011).

Quality family relationships are especially important in the deployed setting, where servicemembers in unsatisfying or conflict-ridden marriages are likely be distracted at work and often struggle to perform their respective missions. A year-long study of 25,000 deployed soldiers in Bagdad found that home front marital stressors

accounted for the number one cause of combat operational stress reactions (35%). By contrast, combat exposure, the second most common stressor, only accounted for 22% of combat operational stress reactions (Warner et al., 2007). Cigrang et al. (2014) found that a third of the Air Force servicemembers in their sample reported that worries or concerns about marital and intimate partner relationships caused operational distractions at least once a month while deployed. Considering the benefits of marriage, it behooves the military to foster healthy marriages and to understand and prevent divorce.

The military, recognizing the importance of the family unit, actively supports marriages. During the 1960s, in the aftermath of the Korean War, DoD was alarmed at the low retention rates that many attributed to stress on servicemembers' marriages. During that time, researchers learned that married servicemembers were more dedicated to military careers than were single troops (Ryan & Bevilacqua, 1964). Marriage became even more important to the Pentagon in 1973. During that year, President Nixon ended the draft and created an all-volunteer military. In doing so, the character of military service evolved from an institution wherein troops served in their individual capacities to an institution in which many troops served as a family unit. Marriage became especially important to the military, as ensuring healthy marriages increased retention and operational efficiency (Bourg & Segal, 1999).

With the adoption of the all-volunteer force, the government could no longer compel citizens to join the military. Instead, it now had to entice people to join, and it had to keep troops satisfied with military life to encourage them to remain in the service. To increase retention rates, the paradigm of DoD's social welfare programs evolved from a

model that focused almost exclusively on the servicemember to a model that recognized the military family as a whole. The government implemented a comprehensive set of programs and benefits designed to enhance family life in the military. These innovations included health care, day care, school programs, and housing assistance, all of which are still in effect today (Lundquist & Xu, 2014). Today, most servicemembers are married, and at over three million strong, military dependents—spouses and children of servicemembers—outnumber the active duty military population three to one (Office of the Deputy Under Secretary of Defense, 2013).

Some argue that the military goes beyond simply preserving marriages. These critics assert that the military actively encourages its members to marry through a comprehensive set of financial and other intangible incentives that are not available to single troops (Karney et al., 2012). Married servicemembers receive about 25% more in nontaxable cash allowances for food and housing than their similarly situated single peers (DOD, 2005). By contrast, single servicemembers do not just receive significantly lower pay, they must also endure curtailed privileges. For example, single troops below a certain rank are forced to live in military barracks. These barracks have fewer amenities and less privacy than the private housing options available to married troops (Hogan & Seifert, 2010). Benefits for married servicemembers who are deployed are even greater, thus encouraging even more premature marriages in an era of increased deployments (Karney et al., 2012).

This push for servicemembers to marry may be intentional. The unique military stressors of shift work, deployments, and constant moves (known in military parlance as

“PCS,” permanent changes of station), are so taxing on troops that a full time, often stay-at-home spouse is necessary for a soldier to maintain that lifestyle. The military relies on the family support system to sustain the servicemember during these trying times (Lundquist & Xu, 2014). Moreover, married servicemembers who complete an initial period of enlistment are more likely to continue to reenlist than their unmarried peers (Karney & Crown, 2007). This provides even more incentive for the military to encourage its members to marry and thereby, to remain in the service.

Critics argue that the incentives designed to encourage servicemembers to marry are so strong that it pushes immature couples to marry long before they are ready to enter a long-term relationship. These hasty unions in turn lead to low quality marriages which may be more likely to dissolve than ordinary, nonincentivized, civilian marriages (Hogan & Seifert, 2010). A survey of American soldiers in Germany found that anecdotal stories of “contract marriages,” marriages for the sole purpose of moving out of the barracks, are common in the military (Lundquist & Xu, 2014). If these stories are true, it lends credence to the argument that incentives to marry in the military are just too good to be turned down. Indeed, even if these stories are apocryphal, the very fact that servicemembers recount these tales may demonstrate an institutional belief that the military encourages premature marriages.

Though the reasoning behind increased marriage rates in the military may be subject to debate, the prevalence of early marriage in the military is empirically clear. Servicemembers are more likely to marry than their single civilian peers. They also marry at younger ages than do civilians (Teachman, 2009). The highest disparities are found

among men aged 20- to 24-years-old. Military servicemembers in this demographic are more than twice as likely to be married as similarly aged civilians (41.5% versus 18.3%; Adler-Baeder, Pittman, & Taylor, 2006).

The marital disparities between military and civilian populations even out with time. Overall, 51.7% of military members are married, compared to 51.6% of the U.S. civilian population (Office of the Deputy Under Secretary of Defense, 2013). But these statistics offer an unfair comparison, as the civilian population includes couples in their 70s and 80s while the military population shrinks precipitously by the early 30s and drops off at about age 49 (Adler-Baeder et al., 2006). Moreover, servicemembers ages 18-24—those at the highest risk of entering an early marriage—make up nearly half (49.4%) of the enlisted force (Office of the Deputy Under Secretary of Defense, 2013).

The benefits of marriage in the military, irrespective of the underlying impetus for the marriage, are clearly borne out by the literature; thus, fostering healthy relationships and preventing divorce must remain a national goal.

### **Divorce in the Military**

Divorce rates in the military have climbed steadily since September 11, 2001, hitting an all-time high in 2011 (Military Family Resource Center, 2011). This is significant because divorce has been linked to adverse effects four distinct entities: the servicemember, the servicemember's spouse, the servicemember's children, and the military overall (Karney & Crown, 2007).

The servicemember is physiologically hurt by divorce (Robles et al., 2014). In an unprecedented study, Shor, Roelfs, Bugyi, and Schwartz (2012) analyzed the data of over

100 studies covering 600 million persons in 24 different countries between the years 1955 and 2011. The meta-analysis linked divorce with increased mortality rates, cardiovascular disorders, and certain forms of cancer.

The servicemember is also emotionally harmed by divorce. A comprehensive, quantitative, study of military servicemembers ( $N = 29,314$ ) linked divorce with weight gain, depression, and PTSD (Wang et al, 2015). A 30- year, longitudinal, civilian study found that divorce was associated with increased rates of mental health disorders, specifically, depression and suicidal behaviors (Gibb, Fergusson, & Horwood, 2011). Indeed, one, albeit older, study found that *every* Army suicide in a given artillery division between 1985 and 1993 involved some form of marital discord (James & Kowalski, 1996).

Spouses are hurt by divorce as well, both physically and financially. Domestic violence, also known as intimate partner violence (IPV), is a problem in both military and civilian populations at large. But studies comparing the two populations have generally found that IPV is more common among military families than it is among civilian couples. IPV rates are even higher in the tense, pre-divorce period; as the very same career stressors that have been attributed to increased military divorce rates have also been attributed to increased military IPV. (Cesur & Sabia, 2016). Divorce also harms many spouses financially, as over a third of military spouses are unemployed (Office of the Under Secretary of Defense, 2013).

Military children are also affected by their parents' divorce. Clever and Segal (2013) note that these children often experience negative peer relationships and a sense of

loss vis-à-vis the non-custodial parent. Moreover, these symptoms are often exacerbated in children of military couples because, due in part to frequent moves and isolation from extended family Military children may already feel a lack of sense of belonging.

Finally, the military as an institution is also harmed by the marital discord and marital dissolution of its members. Divorced troops are less likely to reenlist (Karney & Crown, 2007); less likely to be fully focused while deployed (Cigrang et al, 2014; Warner et al., 2007); and often exhibit an overall reduced level of mission readiness (Hosek & Martorell, 2009). Divorce, as such, negatively impacts the military as a whole; and, by extension, the national security of our country.

The existing body of research attributes military divorce rates to a host of factors including both demographic factors that may apply to the civilian population and military-specific factors, such as deployments (Negrusa et al., 2014). While some research on divorce rates in the military exists, the factors contributing to divorce are still not fully understood.

### **Deployments and Divorce**

The relationship between deployments and divorce is unclear. Common belief, as illustrated in popular media, often attributes the rise in military divorce rates to the stress of increased deployments, overseas missions in support of armed conflicts, in furtherance of the Global War on Terror (Karney & Crown, 2007). Over 2.1 million U.S. troops have deployed to the Middle East and Southwest Asia since September 11, 2001 (Hosek & Martorell, 2009). Approximately one third of those troops experienced a cumulative deployment time of 2 years or more (Baiocchi, 2013). To the layperson, the increase in

deployments serves as the logical explanation for the increase in military divorce rates.

To the researcher, the nexus between the two variables is murky.

Certain studies do support this theory. A recently published quantitative study found a positive relationship between length of deployments and subsequent divorce rates (Negrusa et al., 2014); and meta-analysis among military personnel demonstrate that deployment stressors effect spouses as well (De Burgh, White, Fear & Iversen, 2011). But other research found that deployments had no effect on marital functioning at all. A cross-sectional study in the Army concluded that couples who had been separated due to a deployment did not differ on any aspect of relationship functioning compared to their colleagues who had not deployed (Allen, Rhoades, Stanley, & Markman, 2010).

Other studies have yielded more neutral results. For example, a study of 5,000 British personnel deployed to Iraq between 2003 and 2006 found no statistically significant relationship between deployments and familial relationships (Rowe, Murphy, Wessely, & Fear, 2012).

Still other research found that deployments might be beneficial to a marriage. One qualitative study found that many service-members reported that their marriages had been strengthened through the course of a deployment (Baptist et al, 2011; Greene, Buckman, Dandeker, & Greenberg, 2010). An earlier quantitative study found that 77% of the population sample reported some positive consequences of deployment while only 63% reported negative consequences of deployment. The most commonly cited positive effects of deployment were pay increases, and time for self-improvement and reflective thought (Newby, 2005).

A decade long, quantitative, study across the entire Department of Defense (a population of over six million individuals) found that deployments reduced the overall risk of divorce among service-members (Karney & Crown, 2007). In fact, Karney and Crown (2007) found that enlisted soldiers, sailors, and marines, who deployed were *less* likely to divorce upon returning home than service-members who had never deployed.

The data reported by Karney and Crown (2007) was groundbreaking. It changed the long- held assumption that deployments contributed to an increased divorce rate among military personnel. However, while divorce rates of soldiers, sailors, and marines decreased in relation to deployments, marriages among Air Force personnel stood out as an outlier. Throughout the entire armed forces, only marriages among couples in the active component of the Air Force experienced increased divorce rates due to deployments (Karney & Crown, 2007).

Much of the research on divorce in the military and the effects of deployments on marital functioning have focused on the Army and the Marines, the branches of service that engage in the largest amount of direct combat. Yet, as illustrated by Karney and Crown (2007) and Negrusa et al. (2014), the impact of deployments on marital functioning in the Air Force is different than the impacts of deployments in other branches of service. As such, the purpose of this research is to better understand divorce rates within the Air Force. A subsequent section of this literature review describes how the unique demographics of the Air Force may contribute to the rates of marital dissolution within that branch of service.

**Negative aspects of deployment.** The questionable relationship between deployments and divorce notwithstanding, a host of negative consequences are clearly associated with military deployments. Deployments, especially when troops are exposed to combat, have been positively associated with a host of mental health disorders including substance abuse, depression, and posttraumatic stress disorder. The frequency of behavioral and psychiatric disorders among OEF/OIF veterans is well established; though the exact percentage of deployed veterans with mental health disorders remains unclear and throughout the different studies. The frequency of such disorders range from as low as 11% (Hoge et al., 2006) to as high as 37% (Seal et al., 2009). At 11% of 2.1 million deployed veterans, even the lowest estimates presented by Hoge et al. (2006) represent nearly a quarter million troops who returned from deployments with behavioral and psychiatric disorders.

These mental health and behavioral disorders are in turn correlated with marital discord and divorce (Lambert, Engh, Hasbun, & Holzer, 2012). Karney, the aforementioned researcher whose findings stated that deployments did not increase divorce, subsequently discovered that deployments did indeed lead to a decrease in marital satisfaction among soldiers (Karney & Trail, 2017). Karney and Trail attributed the correlation between deployments and marital dissatisfaction to the posttraumatic stress and other mental health stressors that effect troops who deploy. In other words, while deployments in and of itself may not cause marital dissolution, the secondary and tertiary effects of deployments could logically contribute toward heightened divorce rates among troops.

**Combat exposure.** The negative mental health consequences of deployments are increased among troops who experience combat. The exact parameters of what constitutes combat exposure are vague. This paper follows the working definition proposed by Maguen, Skopp, and Madden (2012), who define combat exposure as being wounded or injured as a result of combat, seeing bodies of dead soldiers or civilians in a war zone, personally witnessing anyone being killed during military operations, or killing another person in combat.

Combat exposure is a strong predictor of post-deployment depression and PTSD symptoms in women. (Luxton, Skopp, & Maguen, 2010). In a study from the United Kingdom ( $n = 432$  women;  $n = 4,554$  men), women who were exposed to combat reported greater symptoms of mental health disorders than men. While men exposed to combat reported higher rates of alcohol abuse, they noted fewer symptoms of mental health disorders (Woodhead, 2012).

### **Air Force**

The nexus between combat exposure and divorce fails to explain the divorce rates in the Air Force; the branch of service that experiences far less ground combat exposure than the Army or the Marines. As indicated in Table 1 of the previous chapter, divorce rates among active duty enlisted airmen (approximately 80% of the total active duty force) have been higher than the Department of Defense (DoD) average for over a decade (Department of Defense, 2013).

Divorce rates among military officers are of less concern to the researcher than the divorce rates among enlisted personnel. Divorce rates among officers of all branches

averaged at about only one third of the divorce rates among their enlisted counterparts. Ironically, between 2000 and 2012, Air Force officer divorce rates have consistently been lower than the divorce rates of officers in any other branch of military service (Department of Defense, 2013). Yet, despite the familial benefits for Air Force officers, enlisted airmen—80% of the active duty Air Force—have consistently experienced above average divorce rates for over a decade.

The Air Force divorce paradox is heightened among deployed troops. A longitudinal, quantitative study across the entire Department of Defense found that deployments reduced the risk of divorce among service-members overall (Karney & Crown, 2007). In fact, Karney and Crown (2007) found that enlisted soldiers, sailors, and marines, who deployed were *less* likely to divorce upon returning home. Only marriages among couples in the active component of the Air Force experienced increase divorce rates due to deployment (Karney & Crown, 2007).

A more recent quantitative study confirmed the negative effects of deployments on Air Force marriages. In contradistinction to Karney and Crown's (2007) research, Negrusa et al. (2014) found that deployments increased the overall likelihood of divorce for all service-members. However, like Karney and Crown, the study found that a service-member's months deployed correlated with significantly higher divorce rates in the Air Force than in sister services.

What remains clear is that the military is not a homogeneous society with equal risk of divorce across all branches. Each branch has a distinct culture, mission, and operational stressors. Marital stressors in the Army are different than marital stressors in

the Air Force, and marital stressors in the Air Force are different than marital stressors in the Navy or Marines (Karney & Crown, 2007; Negrusa et al., 2014). The divorce rates of the Air Force, both among deployed airmen and among enlisted airmen overall, remain uncharacteristically high compared to other branches of service. As such, it behooves the researcher to consider the unique characteristics and demographics of the Air Force that distinguish it from its sister-services.

Two such differences are *gender* and *race*. Among the three branches of service (Army, Navy, and Air Force) the Air Force comprises the highest percentage of females and the lowest percentage of minorities. As illustrated below, both demographic differences may play a role in the Air Forces unique divorce rate.

### **Gender**

Women in the military face unique stressors. Accordingly, the divorce rate among women in the military is several times higher than the divorce rate of their male peers (Karney & Crown, 2007). The divorce rate of female veterans is also more than double the divorce rate of civilian women who had never served in the military. In 2009, 23 percent of all women veterans were currently divorced compared with 12 percent of non-veteran women (National Center, 2011). As the branch of service with the greatest percentage of female troops, this heightened divorce rate should raise concern among Air Force leadership.

Table 2

*Percentage of Male/Female Servicemembers in the Active Duty Army, Navy, and Air Force*

Gender	Army	Navy	Air Force	DoD average
Male	86.5%	83.1%	81.1%	85.4%
Female	13.5%	16.9%	18.9%	14.6%

*Note.* Data from “Defense Manpower Requirements Report, Fiscal Year 2013” U.S. Department of Defense [DOD] (2014).

Further research is necessary to understand how and why the military puts a greater strain on the women who serve. Much of the research understandably focuses on males, as they comprise over 85% of the military (DoD, 2014). Unfortunately, female service-members have a significantly higher divorce rate than their male peers, and the divorce rates are even higher among females who deploy (Karney & Crown, 2007). While it is clear that female veterans of OIF/OEF/OND have unique mental health needs, there is little research documenting the specific experiences of deployed women (Boyd et al., 2013).

Women serve an integral role in military; their numbers, responsibilities and achievements, have grown exponentially since WWII. The Armed Services Integration Act of 1948 guaranteed women a place in the military, though the act limited female service-members to not more than 2% of the total military population. With the advent of the All Volunteer Force in 1973, the military began to actively recruit women, and it opened additional opportunities and career fields that had previously been only available

to men. The Air Force permitted women to serve as combat pilots in 1992 and the Navy permitted women to serve on combat ships in 1994 (National Center, 2011).

Women have traditionally been excluded from direct combat roles. In 1994, as the Air Force and Navy expanded combat opportunities for women, the Department of Defense promulgated the Direct Ground Combat Definition and Assignment Rule (DGCDAR); a rule that specifically barred women from careers in infantry, armor, and special operations, the most dangerous career fields in the military (National Center, 2011).

Women in the military have historically been relegated to medical and support roles. Today, despite the breadth of career fields available to female servicemembers. Health care remains a popular occupation for women in the military. In 2008, 16 percent of enlisted females and 41 percent of female officers occupied positions in the medical field, while 30% of female service-members served in administrative roles (National Center, 2011)

In 2013, Secretary of Defense Leon Panetta rescinded DGCDAR, thereby opening all combat positions to female servicemembers. Though criticized by certain members of the military establishment (Rice, 2015), then-secretary Panetta's new rule gave the services a grace period of several years to determine how to integrate females into combat roles. On March 10, 2016, Secretary Carter announced his approval for the services' implementation plans for the integration of women into direct ground combat roles (Kamarck, 2016). It will take some time before researchers can document the

specific effects of direct combat experience on deployed women. As such, all the existing research assumes that women are excluded from direct ground combat roles.

Despite their exclusion from ground combat roles, women have played a large and integral role in the global war on terror. In 2013, women comprised 14.5% of the 1.4 million active duty forces. 13% served in the Army, 17% in the Navy, and 7% in the Marines. The Air Force was 19% female; it had highest percentage of women among all the services (DoD, 2014).

Over 200,000 women, more than 11% of the total deployed population, have served in Iraq or Afghanistan in support of OEF/OIF/OND (DCAS, 2010). Many of these women served in supporting roles that placed them in combat zones, in direct enemy fire, or other combat-like situations (National Center, 2011). These numbers have increased as the war drew on; from 7% at the beginning of the war to 24% in 2010 (Patten & Parker, 2011). Women have sustained war-related injuries like that of men (U.S. Dept of Veteran Affairs, 2012). As of November 2016, 166 women have been killed and 1,033 women have been wounded in combat operations in support of the global war on terror. During this same period, more than 9,000 women have received medals for actively engaging or being engaged by enemy forces (Kamarck, 2016).

Throughout the research, female servicemembers commonly identify three categories of negative military experience: (a) combat-related experiences, (b) separation from family, and (c) military sexual trauma. These issues are major stressors for women and often lead to PTSD (Dutra, 2011; Mattocks, 2012; Skopp 2011). PTSD, in turn, is believed to be a prime factor in military divorces, as discussed in detail below.

**Women and combat exposure.** The term “combat exposure” is somewhat vague, especially when applied to women who were excluded from combat roles. Maguen, Skopp, and Madden (2012) define combat exposure as “who define combat exposure as being wounded or injured as a result of combat, seeing bodies of dead soldiers or civilians in a war zone, personally witnessing anyone being killed during military operations, or killing another person in combat. This working definition applies to both male and female troops.

The recent wars in Afghanistan and Iraq (Gulf War and OEF/OIF) have exposed women to more combat than at any other time in recorded history. While men, comprising the entirety of the infantry, are more likely to have been exposed to more combat than women, a significant number of female service-members have experienced combat stress as well.

The exact percentage of female troops who have been exposed to combat varies wildly by the study. Almost 75% of the women interviewed in one qualitative study reported combat exposure, upon returning from deployment (Dutra, 2011). In a larger, quantitative survey ( $N = 7,251$ ), 31% of female OEF/OIF veterans reported exposure to death, 9% of the women surveyed had witnessed killing, 7% had been injured in a combat zone, and 4% had killed an enemy (Maguen, Skopp, & Madden, 2012). More than a quarter of female veterans ( $n = 115$ ) surveyed at a VA clinic reported combat exposure while deployed (Hassija, Jakupack, Maguen, 2012). In sum, about a third of deployed female service-members appear to have at least some exposure to combat.

Combat exposure is a strong predictor of post-deployment depression and PTSD symptoms in women. (Luxton, Skopp, & Maguen, 2010). In a study from the United Kingdom ( $n = 432$  women;  $n = 4,554$  men), women who were exposed to combat reported greater symptoms of mental health disorders than did men. While men exposed to combat reported higher rates of alcohol abuse, but fewer symptoms of mental health disorders (Woodhead, 2012).

**Family separation.** Family separation is a major contributor of stress for deployed troops, especially for women (Boyd et al., 2013). Family separation is especially difficult on single mothers who must leave a child with a family member during a deployment or military exercise (Dutra 2012). Evidence suggests that women may react differently than men to the family climate of military life and deployments (Teachman & Teadrow, 2008). Family separations, as well as the perceived loss of relationship quality often attendant to the separation, are associated with an increased risk of PTSD in women, but not in men (Fox et al., 2015; Skopp et al., 2011) PTSD, in turn, has been associated with subsequent divorce (Allen, Rhoades, Stanley & Markman, 2010).

A recent, albeit small ( $n = 42$ ), qualitative study of female veterans found that many the women reported bringing the cumulative stress of deployment back home, thereby complicating their relationships and family life; and some of the women who had divorced upon returning from deployment blamed the stresses of their deployment experience for ending their marriage (Kelly, Nilsson & Berkel, 2014).

Another qualitative study of female Army veterans with children who had deployed with the National Guard ( $n = 30$ ), found that all participants reported feeling stressed and worried for their children both before and during their respective deployments. In addition, most respondents reported experiencing a sense of loss over missing family milestones and events for their children (Nilsson et al, 2015).

**Military sexual trauma.** Military sexual trauma (MST) or gender stress has gained recent attention in Congress. Military sexual trauma (MST) includes sexual harassment and sexual assault that occur to servicemembers in a military environment. It is highly associated with mental health disorders such as PTSD, depression, anxiety disorders and substance abuse (Maguen et al., 2012; Street & Stafford, 2004).

Women are nearly twice as likely to experience sexual harassment or sexual assault in a deployed setting than are men (Murdoch et al, 2007). In a recent study of deployed women, some women reported stress and harassment related to being a female. One participant stated that it trumped anything that she experienced at the United States Military Academy—the Army’s college for officer cadets in West Point, New York—where there was a male-female ratio of eight to one. Another female participant stated that not a day went by without her being harassed. The harassment and trauma was prevalent among officers and enlisted female troops (Kelly et al., 2014).

**Mental health among deployed females.** Deployment has been correlated with a host of mental health disorders that, in turn, have been linked to divorce (see e.g., Lambert, Engh, Hasbun, & Holzer, 2012). These mental health problems manifest differently in females than in males.

The suicide rate, for example, increased among women (from 5.1 to 15.2 per 100,000) more so than men (from 14.8 to 21.1 per 100,000) when comparing soldiers who have never deployed to those currently deployed. However, although the accidental death rate for men increased during deployment (compared to never deployed, from 39.5 to 56.6 per 100,000), there was no corresponding increase among women (National Institute of Mental Health, 2011)

Some studies illustrate that female veterans face a higher risk of depression and PTSD than do men. In a robust cohort study of 50,184 military participants, Ryan and Wingard (2008) found a higher risk of PTSD associated with being. Another quantitative study ( $n = 2,583$ ) found that female soldiers were 2.5 times as likely to report symptoms of PTSD than male soldiers (Skopp et al., 2011). Depression among OEF/OIF/OND servicemembers is also more likely to be reported in women than in men. Though men tend to have higher rates of alcohol and substance abuse (Maguen & Cohen, 2012).

Family separations and a perceived loss or decrease in intimate relationships is associated with an increased risk of PTSD in women but not in men (Skopp et al., 2011). “These findings are consistent with research indicating that intimate partner’s emotional validation of traumatic events is more important for females than males” (Skopp et al., 2011, p. 283).

Other studies have not found significant differences in rates of PTSD among men and women (Macera, Aralis, Highfill-McRoy, & Rauh, 2014). Yet, regardless of whether female rates of PTSD are higher than rates of PTSD among males, female servicemembers clearly face a significant risk for mental health disorders. Accordingly,

high rates of PTSD, substance abuse, depression, anxiety, fatigue, trouble concentrating, and suicide, have been found among female after deployment (Gibbons et al., 2012; Seelig et al., 2012).

In addition to the mental and emotional stressors that women face while deployed, female servicemembers also experience *physical* stressors that are not manifest in their male colleagues. For example, female veterans are more likely to have muscle spasms, musculoskeletal disorders, limb disorders, and skin disorders than men. Some research attributes these heightened disease rates to the male-centric heavy body armor worn in the field (Haskell et al., 2011).

The cumulative effect of each of these stressors may contribute to the heightened divorce rates of female servicemembers; and ultimately—as the branch of service with the highest female populations—a heightened divorce rate in the Air Force overall.

### **Race**

Like gender, the unique racial makeup of the Air Force is another factor that may impact the heightened divorce rate in this branch of service. The racial makeup of the Air Force is less diverse than other sister services. This is important because, as some researchers have argued, “one of the strongest differentials in rates of divorce occurs according to race.” (Teachman & Tedrow, 2008, p. 1030). As such, racial demographics play a central role in understanding divorce; and a significant amount of research has been dedicated to understanding divorce rates of minorities both civilian and military populations. Some of the difference can be attributed to economic disadvantage (Philips & Sweeney, 2006) and some of it to racism (e.g. Teachman & Tedrow, 2008).

For example, among civilians, census data found that marital dissolution for Black women is nearly 50% higher than for White, non-Hispanic, women (Bramlett & Mosher, 2001). It is estimated that 55% of Black marriages will end within 15 years compared to 42% of White marriages (Bramlett & Mosher, 2002). In first marriages among White women, 54% will remain intact at 20 years while only 37% of Black women's marriages will remain intact during that same period (Copen et al., 2012). Similar disparities were found among males, though not as pronounced as among females (Copen et al., 2012).

Surprisingly, military service plays a key role in reducing the divorce rate among Black couples. The racial differences in divorce rates among civilians are often eliminated during active duty military service wherein Black and White service-members share an almost equal divorce rate (Lundquist, 2006).

Benefits of military service for Black men are higher in the Army than in other branches of service. Active duty service for Blacks in the Army significantly reduces the risk of divorce, while service in any other branch does not affect the risk of marital dissolution. "Black men serving in the Army are 46% less likely to end their marriages than Black men with no experience in the military," while service in the Air Force Navy and Marines have no effect on the divorce rate (Teachman & Tedrow, 2008, p. 1038).

More Blackss serve in the Army than in any other branch of service; 21% in the Army compared to 14% in the Air Force (DOD, 2014). Teachman and Teadrow (2008) attribute the Army's unique effect to the positive experience of Blacks in the Army that are absent from other branches of service.

While the Marines comprises the smallest percentage of Black troops, the Air Force falls below the DoD average and employs fewer Blacks among its ranks than the Army or Navy (DoD, 2014).

Table 3

*Comparison of Non-White Members in the Active Duty Army, Navy, and Air Force*

Variable	Army	Navy	Air Force	DoD Average
Officers	26.2%	19.7%	18.2%	21.9%
Enlisted	30.7%	42.9%	28.8%	31.6%

*Note.* Data from “Defense Manpower Requirements Report, Fiscal Year 2013” U.S. Department of Defense. (2014).

Fincham and Beach (2010) caution that researchers must acknowledge the diversity of Black marriages (Caribbean, Hispanic, African) as well as the increased number of mixed race marriages.

### **Career Fields**

An appreciation of Air Force career fields is necessary to understand why this branch of service exhibits a higher divorce rate the rest of the Department of Defense. Karney and Crown (2007) criticize the apparent homogeneous approach with which many researchers have studied military marriages. The military is not a homogeneous society and the risk of divorce is not equal across all branches or career fields. Each branch has a distinct culture, mission, and operational stressors. Marital stressors in the Army are different than marital stressors in the Air Force, and marital stressors in the Air Force are different than marital stressors in the Navy or Marines.

Similarly, just as the stressors of the Army are different than the stressors of the Navy, the stress hypothesis would dictate that the divorce rates *within* the Air Force would also differ depending on the level of stress attendant to an Airmen's given mission.

The Air Force consists of eight broad career fields: operations, logistics, support, medical, professional, acquisition, special investigations, and special assignments. Each broad category is in turn broken down into individual AFSCs. There are 278 AFSCs in the Air Force, 181 for officers and 197 for enlisted personnel (Department of the Air Force, 2013).

Each career field has its own unique distinct mission, culture, set of stressors, and divorce rate. Negrusa et al. (2014), found a divergence of divorce rates among the different Army career fields who returned from deployments. For example, infantry troops who deployed were less likely to divorce than intelligence troops who deployed. Deployments do not affect everyone equally.

This distinction of career field may play a greater role in the Air Force than in other branches of service. The Army, Navy, and Marines, which predate the founding of our country, are all steeped in a shared warrior tradition. Among each traditional branch of service, each member shares a common baseline mission and skill. Everyone in the Army is a soldier, everyone in the Navy is a sailor, and everyone in the Marines is a rifleman. Because every soldier is, at its core, an infantryman, the entire Army as a whole experiences a common thread of stressors. The same is true for the Navy and Marines, each of whose members share a common basic mission (Thomas, 2004).

The Air Force on the other hand, was first established in 1947 during the technological boom in the aftermath of World War II. Unlike troops in the traditional branches of service, members of the Air Force do not share a single baseline mission or skill. The overwhelming majority of airmen, 96 percent, does not fly planes or even perform duties in the air. Airmen instead associate themselves by their career field subculture, by the type of technological platform that they utilize, protect, or maintain (Thomas, 2004).

Accordingly, the levels of stress and attendant divorce rates within the different Air Force career fields warrant an individual study (Karney & Crown, 2007). Airmen who serve in ground combat roles and Airmen who serve in operational career fields can be assumed to endure additional levels of stress that are not experienced by airmen who serve in support roles.

Several studies have already focused on specific AFSCs. For example, recent studies have examined the differences between stress levels and PTSD rates among remote piloted aircraft (RPA) pilots versus other career fields (Chappelle et al., 2012; Otto & Webber, 2013). Cigrang et. al (2014) studied the stressors of security forces, the Air Force's version of the military police. Another study compared the mental health conditions of deployed Air Force nurses as compared to deployed Air Force physicians (Tvaryanas & Maupin, 2014), while Tortella (2009) looked at the unique stressors of explosive ordinance disposal (EOD) troops, one of the most dangerous career fields in the military. To date, however, no one has studied the differences in divorce rates among the different career fields in the Air Force.

### **Methods for the Study**

This study utilized archival data from military personal records. These records were collected and maintained locally by each individual service. Each branch of service, in turn, forwards its records to the Department of Defense, which then aggregates the data into a master personnel file (Karney & Crown, 2007). In the Air Force, personnel data records are collected and maintained by the AFPC in San Antonio, Texas. Aggregate level, military-wide, personnel data records are maintained by the DMDC, with offices in California and Virginia.

A number of earlier peer-reviewed, quantitative, studies have utilized archival personnel data records to study marriage and divorce in the military. Utilizing data made available through the DMDC, Hogan and Seifert (2010) employed a linear regression model to study the effects of military service on the likelihood of 22 to 25 year old men to marry. The findings demonstrated that active-duty servicemembers in that age group were approximately three times as likely to be married as their civilian counterparts. The authors found that those with military service were also more likely to be divorced than comparable civilian populations. A subsequent study utilizing similar archival personnel records, but different civilian records, confirmed that those in the military were more likely to marry; but found that men in the military were no more likely to divorce than their civilian counterparts. This study, however, confirmed that women in the military were more likely to divorce than similarly situated civilians (Karney et al., 2012).

Quantitative studies based on military personnel data records are prevalent in the literature. A study at the Naval Post Graduate School, utilized DMDC data to study the

effects of deployment on marriages in the Navy and Marine (Arenstein, 2011). A study of enlisted soldiers utilized DMDC data to study the marital functioning among combat veterans in the Army (Riviere et al., 2012). This study utilized a similar archival data set to study marriages in the Air Force.

The most robust use of archival military personnel data records was demonstrated by Karney and Crown (2007), who studied marital dissolution among a population of over 6 million servicemembers during a ten-year period of time. Negrusa et al. (2014) followed suit, utilizing similar archival data made available through the DMDC. This later research also utilized those personnel records to study the moderating effects of military occupation on the divorce rates of servicemembers in the Army. This study utilized similar data sets to study the moderating effects of military occupation in the Air Force.

This research will employ descriptive statistics and tables, similar to those utilized in similar research on marital dissolution in the military (Karney & Crown, 2007; Negrusa et al., 2014); as well as chi square analyses to explore the relationships among the delineated dependent and independent variables of the research questions as indicated in Chapter Three (Schumm, Silliman, & Bell, 2000; Therrien, Richer, Lee, Watkins, & Zamorski, 2016).

### **Summary**

Divorce remains an often studied but still not understood facet of military service, particularly in the Air Force. Among the various segments of the U.S. Department of Defense, the Air Force had a consistently higher divorce rate than its sister services.

Furthermore, the negative correlation between deployments and divorce rates was also higher among members of the Air Force than it was for troops who served in other branches of the military (Negrusa et al., 2014). This statistic is especially troubling in light of the fact that over 2 million personnel have deployed since 2001 in support of the Global War on Terror (Hosek, & Martorell, 2009).

This chapter, through the lens of the stress hypothesis, reviewed the literature on divorce in the military and the associations between deployments related maladies and stressors that may contribute to marital dissolution. This literature review also focused on the unique demographic makeup of the Air Force as well as the distinctive marital stressors that women and minorities in that branch of service must endure. Lastly, this chapter discussed the need to study the stressors and divorce rates of individual career fields rather than the Air force as a single, homogenous entity.

Chapter 3 will discuss the research design, methodologies, data retrieval, and analysis procedures used in this study.

## Chapter 3: Research Method

### **Introduction**

Enlisted members of the Air Force have the highest divorce rate of any of the branches of military service. Researchers have established a gap in the literature regarding the divorce rates in the Air Force, particularly in regard to the relationship between deployment ratios and divorce rates, wherein the existing research establishes a greater correlation between the two variables than is present in any other branch of service. In addition, the extant research has noted that gender, race, and occupation also play a significant role in understanding military divorce. The purpose of this study was to better understand divorce in the Air Force and, subsequently, to identify which demographics within the Air Force exhibit the highest percentages of divorced service-members.

In this chapter I describe the research design and methodology of this quantitative study, the rationale for said statistical methods, and the projected dissemination of the research findings. The study utilized archival data available through the U.S. Air Force.

### **Research Design and Rationale**

Research indicates that deployment ratios and career type (Negrusa et al., 2014), as well as race (Teachman & Teadrow, 2008) and gender (Karney & Crown, 2007), impact the divorce rates of the Air Force. To date, there is a significant body of research on divorce in the military, as detailed in Chapter 2. This study was, however, unique in the following key areas: (a) The study utilized quantitative data; (b) it only focused on actively duty enlisted Air Force servicemembers instead of on the entire military; (c) the

data sets that were analyzed embodied the statistics of an entire population instead of small, randomized samples; and, (d) the study utilized accurate, archival data instead of relying upon often inaccurate self-reports. The following paragraphs will address the benefits of the selected methodology.

### **Rationale**

A quantitative analysis was most appropriate for this study. Babbie (2015) distinguished the difference between qualitative and quantitative methods along the lines of objective and subjective variables. Thus, while qualitative studies emphasize an often subjective and socially constructed reality, quantitative methods focus on empirically objective statistical measurements that can in turn be used to explain a given phenomenon. Divorce status, the independent variable in this study, is inherently empirical and more amenable to quantitative analysis. Furthermore, quantitative studies are superior at analyzing the causal relationships among variables, while inferential qualitative surveys are often limited by a retroactive perception of causality between deployments and marital dissolution that may not accurately reflect the true association between the two variables (Baptist et al., 2011). As such, a quantitative analysis is necessary to determine whether a relationship exists between deployments, race, gender, and divorce rates in the Air Force. As indicated in Chapter 5, this study determined that such a relationship did indeed exist; accordingly, a future qualitative study may be appropriate to better understand why the causality exists.

This study only focused on the population of ordinary, active duty, enlisted Airmen. Existing research has either studied the entire military population (e.g. Negrusa

et al., 2014) or a small sample of service-members (e.g. Cesur, 2013). Hefty military-wide studies are limited in that they assume a degree of homogeneity among all military servicemembers that has been refuted in the research (Karney & Crown, 2007).

Servicemembers in different career fields and in different branches of service have very different deployment experiences; accordingly, it is difficult to generalize causality across the entire military population. On the other hand, inferential studies that utilize a small, albeit representative, sample will inevitably result in some degree of statistical error (Banerjee & Chaudhury, 2010).

The selected population balanced the benefits of both worlds. It was large enough to measure an entire population, thereby generating more accurate statistics that were free from many of the sampling errors common in quantitative inferential statistics.

Conversely, the limited population of the ordinary enlisted corps of the Air Force was small enough to study each career group individually and thus garner causal statistics that are internally valid.

The decision to utilize archival data was made due to considerations of practicality, ethics, and accuracy. First, the sheer size of the population ( $N = 247,644$ ) makes it extremely impractical to obtain primary data, especially when the relevant data has already been collated by the Air Force. Moreover, online data collection—the only viable option for large scale data collection of the kind necessary for this study—is rife with ethical concerns including misunderstandings regarding informed consent and breaches of confidentiality (Emery, 2014). These concerns are nullified through the use of secondary data that is free from personally identifiable information.

Perhaps most importantly, researchers have argued that military personnel records are the most accurate means of measuring the relationship between deployment ratios and divorce rates (Karney & Crown, 2007; Negrusa et al., 2014). Self-reports, on the other hand, are often less valid (Sanford, 2010).

The archival data at issue is maintained by the AFPC. The data is inherently accurate, as every service-member has a legal obligation to notify the personnel office of changes in marital status. The Air Force also records and maintains the additional variables of this study (i.e. demographics and deployment ratios) in real time as a matter of policy. Both Karney and Crown (2007) and Negrusa et al. (2014) utilized similar data sets in their respective research, for the same reason of accuracy. However, as those researchers studied the entire military, their archival data sets were retrieved through the DMDC. DMDC collects personnel data from each of the branches of military service, including from the AFPC. As this study only focused on the Air Force, records were requested directly from AFPC instead of roundabout through DMDC.

### **Research Questions**

The research questions are as follows.

RQ1: What are the differences in divorce status among each of the 94 ordinary enlisted AFSs during fiscal year 2011?

$H_0$ 1: The divorce statuses across all AFSs are statistically equal.

$H_a$ 1: Different AFSs exhibit statistically significant different divorce statuses.

RQ2: What are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011?

$H_02$ : The status of divorce among all racial categories and genders are heterogeneous.

$H_a2$ : The differences in status of divorce among the various racial categories and genders are statistically significant.

RQ3: What are the differences among the six Air Force career groups in divorce status during fiscal year 2011?

$H_03$ : The rates of divorce across all Air Force career groups are homogeneous.

$H_a3$ : The rates of divorce among the six Air Force career groups are statistically significant.

RQ4: Does divorce status within the six career groups vary by gender and race during fiscal year 2011?

$H_04$ : The status of divorce among specific demographic groups are equal across all six Air Force career groups.

$H_a4$ : The status of divorce among specific demographic groups within the six Air Force career groups is statistically significant.

RQ5: Does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011?

$H_05$ : There is no correlation between divorce status and deployment rates across all six Air Force career groups.

$H_a5$ : There is a statistically significant correlation between divorce status and deployment rates across all six Air Force career groups.

## Population

This study analyzed an entire population instead of just a sample. The Air Force consists of 308,606 active duty members. Of those members, approximately 24% ( $n = 60,289$ ) are officers, while the remaining 76% ( $n = 248,317$ ) are enlisted (Defense Manpower Data Center, 2013). As previously discussed in Chapter 2, the divorce rate for officers is below the national average and therefore of less concern to the researcher. Conversely, the enlisted Air Force divorce rate is well above the military average and thus warrants further research. The population in this study consisted solely of enlisted members.

Karney and Crown (2007) found that divorce rates were particularly higher among female and Black servicemembers. Air Force records indicate that women comprise 18.9% of the enlisted corps. The Air Force is racially diverse: 72% of its members are White, 14% are Black, 3.5% are Asian, 1.1% are Native Hawaiian or other Pacific Islander, 3.7% identified more than one race, and 4.5% declined to respond (Defense Manpower Data Center, 2013).

The enlisted corps embodies nine broad career groups, six ordinary groups and two special groups. Every Air Force servicemember falls under one of these categories. The nine career groups are (a) Operations, (b) Logistics and Maintenance, (c) support, (d) Medical, (e) Professional, (f) Acquisition, (g) Special Investigations, (h) Special Duties, and (i) Air Force servicemembers awaiting a change of status (e.g., servicemembers who are still undergoing initial training, prisoners, or wounded warriors; Air Force Instruction 36-2101, 2013). Due to the unique nature and confounding variables associated with the

Air Force servicemembers in career groups seven, eight, and nine, the population of this study consisted of all enlisted members in career groups one through six; that is, the entire ordinary enlisted corps. The six career groups, in turn, encompass 94 AFSs. (See Table 4.)

Table 4

*Career Groups and Enlisted Air Force Specialties Included in the Study.*

Operations (1XX)			
1. 1A0: In-Flight Refueling	9. 1B4: Cyberspace Defense Operations	15. 1C5: Command and Control Battle Management Operations	20. 1N3: Cryptologic Language Analyst
2. 1A1: Flight Engineer	10. 1C0: Aviation Resource Management	16. 1C6: Space Systems Operations	21. 1N4: Network Intelligence Analyst
3. 1A2: Aircraft Loadmaster	11. 1C1: Air Traffic Control	17. 1C7: Airfield Management	22. 1P0: Aircrew Flight Equipment
4. 1A3: Airborne Mission System	12. 1C2: Combat Control	18. 1N1: Geospatial Intelligence	23. 1S0: Safety
5. 1A4: Airborne Operations	13. 1C3: Command Post	19. 1N2: Signals Intelligence Analyst	24. 1T0: Survival, Evasion, Resistance and Escape
6. 1A6: Flight Attendant	14. 1C4: Tactical Air Control Party		25. 1T2: Pararescue
7. 1A7: Aerial Gunner			26. 1U0: Career RPA Sensor Operator
8. 1A8: Airborne Cryptologic Linguist			27. 1W0: Weather
Logistics and Maintenance (2XX)			
28. 2A0: Avionics Test Station and Components	33. 2E1: Satellite, Wideband and Telemetry Systems	38. 2P0: Precision Measurement Equipment Laboratory	42. 2T0: Traffic Management
29. 2A3: Avionics Systems	34. 2E6: Communication Cable and Antenna Systems	39. 2R0: Maintenance Management Analysis	43. 2T1: Vehicle Operations
30. 2A5: Aerospace Maintenance	35. 2F0: Fuels	40. 2R1: Maintenance Management Production	44. 2T2: Air Transportation
31. 2A6: Aerospace Propulsion	36. 2G0: Logistics Plans	41. 2S0: Materiel Management	45. 2T3: Vehicle Maintenance
32. 2A7: Aircraft Metals Technology	37. 2M0: Missile Maintenance		46. 2W0: Munitions Systems
			47. 2W1: Aircraft Armament Systems
			48. 2W2: Nuclear Weapons

*(table continues)*

Support (3XX)			
49. 3A0: Knowledge Operations Management	54. 3D1: Client Systems	60. 3E5: Engineering	66. 3N0: Public Affairs
50. 3C0: Communication-Computer Systems	55. 3E0: Electrical Systems	61. 3E6: Operations Management	67. 3N1: Regional Band
51. 3C1: Information Systems Technology	56. 3E1: Heating, Ventilation, AC, Refrigeration	62. 3E7: Fire Protection	68. 3N2: Premier Band
52. 3C2: Network Integration	57. 3E2: Pavement and Construction Equipment	63. 3E8: Explosive Ordnance Disposal	69. 3P0: Security Forces
53. 3D0: Knowledge Operations Management	58. 3E3: Structural	64. 3E9: Emergency Management	70. 3S0: Personnel
	59. 3E4: Water and Fuel Systems Maintenance	65. 3M0: Services	71. 3S1: Equal Opportunity
			72. 3S2: Education and Training
			73. 3S3: Manpower
Medical (4XX)			
74. 4A0: Health Services Management	78. 4C0: Mental Health Service	82. 4J0: Physical Medicine	86. 4P0: Pharmacy
75. 4A1: Medical Material	79. 4D0: Diet Therapy	83. 4M0: Aerospace and Operational Physiology	87. 4R0: Diagnostic Imaging
76. 4A2: Biomedical Equipment	80. 4E0: Public Health	84. 4N0: Aerospace Medical Service	88. 4T0: Medical Laboratory
77. 4B0: Bioenvironmental Engineering	81. 4H0: Cardiopulmonary Laboratory	85. 4N1: Surgical Service	89. 4V0: Ophthalmic
			90. 4Y0: Dental Assistant
Professional (5XX)		Acquisition (6XX)	
91. 5J0: Paralegal	92. 5R0: Chaplain Assistant	93. 6C0: Contracting	94. 6F0: Financial Management and Comptroller

The enlisted divorce rate in the Air Force rose steadily between 2000 and 2011. The number of divorced personnel hit an all-time high in 2011 and dropped slightly thereafter (DoD, 2014). As such, the study analyzed the ordinary enlisted population who served in the Air Force in 2011 ( $N = 247,644$ ).

### Data Collection

This study utilized archival data, similar to the types of data sets utilized in previous studies (Karney & Crown, 2007; Negrusa et al., 2014). The data is maintained by the AFPC in San Antonio, Texas; and is available to the public via an FOIA request.

(Detailed instructions on obtaining archival personnel data from the U.S. Air Force is available at <http://www.foia.af.mil>.) Upon receipt of an FOIA request, the Air Force will assign a records manager to clarify, via email, what data is required and how the data will be used.

The following data sets will be requested through AFPC. 1) Divorce ratios for all ordinary enlisted Airmen ( $N = 247,644$ ); broken down by a) AFS, b) gender, and c) race. 2) Days deployed for each AFS. The data will be provided via the FOIA request as an Excel spreadsheet, after which the data will be entered into SPSS for statistical analyses.

### **Operational Definitions**

Full definitions of key terms and military terminology used throughout this study are set forth earlier in chapter one. The following definitions relate directly to the variables of this study, specifically how they will be measured and coded during data analysis.

**Dependent Variable: Divorce Rate.** The dependent variable of this study is the divorce rates of the various groupings of this study. Divorce rate will be measured as a continuous count of subjects that are divorced, broken down by gender, race, air force specialty and air force career group. Continuous counts of married subjects will also be collected for comparison. Single subjects will be excluded.

**Independent Variable 1: Air Force Specialty.** The first independent variable of this study is the air force specialty, this is a categorical, nominal variable with 95 categories (presented in Table 4) and will be coded using the air force alphanumeric

codes associated with each category as presented in Table 4. This independent variable is related to research question 1.

Independent Variable 2: Gender. The second independent variable of this analysis is gender, which is a categorical, binomial variable. Male will be coded as 0 for data analysis and female will be coded as 1 for data analysis. This independent variable is related to research question 2, 4 and 6.

Independent Variable 3: Race. The third independent variable of this analysis is race, which is a categorical, nominal variable measured on with four categories. American Indian or Alaska Native will be coded 0, Asian will be coded 1, Black will be coded 2, Native Hawaiian or Other Pacific Islander will be coded 3, White will be coded 4. More Than One Race will be coded 5, and Declined to Respond will be coded 6. This independent variable is related to research question 2, 4 and 6.

Independent Variable 4: Career Group. The fourth independent variable of this analysis is Air Force career group, a categorical, nominal variable with six categories. The categories are presented in Table 4 and will be coded with the same alphanumeric codes as used by the Air Force for data analysis. This variable is related to research question 3 and 4.

Independent Variable 5: Deployment rate. The fifth independent variable of this analysis is deployment rate which is a categorical, ordinal variable measured with three categories. Each of the 94 AFSs will be classified as either high (coded 0), medium (coded 1) or low (coded 2) and aggregated together.

## **Data Analysis Plan**

The Statistical Package for Social Sciences (SPSS) version 23 software program will be used to analyze the raw archival data used in this study. Data analyses plan for each research question is presented in order of research questions.

### **Research Question One**

The first research question was:

RQ1: What are the differences in divorce status among each of the 94 ordinary enlisted AFSs during fiscal year 2011?

The first research question will employ descriptive statistics followed by chi-square tests of association. Descriptive statistics will be presented in the form a contingency table showing counts of married and divorced subjects in each of the AFSs, bar charts comparing counts across all 95 categories will also be presented in the appendix. A chi-square test is used to test for an associated between two categorical variables, for this research question they are number of divorced/married subjects and AFS. A significant chi-square test indicates that there is a significantly significant association between divorce status and AFS.

### **Research Question Two**

The second research question was:

RQ2: What are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011?

Research question two will first be analyzed by presenting contingency tables of gender by divorce status and race by divorce status and respective bar charts for each. Analysis

will be conducted following methods of research question one, using two chi-square tests to determine if there are significant relationships between divorce status and gender or race.

### **Research Question Three**

The third research question was:

RQ3: What are the differences among the six Air Force career groups in divorce status during fiscal year 2011?

Similar to previous research questions, this question will be answered using contingency tables, bar graphs and a chi-square test to explore the association between career group and divorce status.

### **Research Question Four**

The fourth research question was:

RQ4: Does divorce status within the six career groups vary by gender and race during fiscal year 2011?

Research question four will be examined using multiple chi-square tests. Within each career group two chi square tests will be conducted, one exploring divorce status and gender and one exploring divorce status and race. For significant findings, bar graphs will be presented to explore the relationship.

For all research questions, a chi-square test assumes that there will be at least 5 subjects in each square of the contingency table. If this assumption is not met, Fisher's exact test will be used instead.

### **Research Question Five**

The fifth and final research question was:

RQ5: Does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011?

Similar to previous research questions one, two and three, this question will be answered using contingency tables, bar graphs and a chi-square test to explore the association between deployment rate group and divorce status.

### **Threats to Validity**

The property of internal validity in social science studies addresses the extent to which the causality or relationships can be determined in a given study (Bickman & Rog, 2008). The study was designed to minimize systemic error and to control for external variables in order to maintain internal validity. Even so, minor degrees of statistical error must have inevitably occurred.

Due to the classification level of deployment related data, the military will not release the personal deployment rates of its members. In other words, the archival data used in this study did not allow a researcher to determine if a particular Airman who was divorced had indeed deployed during the year in question. Instead, this study utilized a deployment rate for the entire career group; and then in turn extrapolated that data to the individual level.

A researcher could obtain individualized deployment data through client interviews or surveys. In doing so however, the researcher would be limited to a small sample. This would, in turn, subject the test to a host of external validity issues that are

manifest in sample selection. This study, on the other hand, analyzed an entire population instead of just a sample. This mitigated concerns of external validity while concurrently adhering to scientifically accepted standards for internal validity as well.

### **Ethical Procedures**

Permission from the Institutional Review Board was obtained before requesting the data and conducting the study. The archival data at issue was a matter of public record. It did not contain any personally identifiable information and, thus, did not pose any ethical concerns.

### **Summary**

This correlational study analyzed the relationship between Career groups, deployments, race, and gender, among enlisted Airmen. The quantitative study utilized secondary data relating to the entire population at issue. Approval from the Institutional Review Board (IRB) at Walden University was granted to the researcher (IRB approval no. 03-09-17-0120951), after which the data was obtained via an FOIA Request from the Air Force Personnel Data Center in San Antonio, Texas. The relevant data was analyzed in SPSS using descriptive statistics and chi-square tests.

Chapter four will present the results of the descriptive and inferential statistical analyses as well as answers to the research questions posed in the foregoing paragraphs.

## Chapter 4: Results

### Introduction

The main purpose of this study was to explore divorce rate of the active duty enlisted corps of the U.S. Air Force in 2011 ( $N = 247,644$ ), the year in which military divorce rates peaked at an all-time high. Using archival data, the study analyzed a population of 308,606 Active Duty members. Of those members, approximately 24% ( $n = 60,289$ ) were officers, while the remaining 76% ( $n = 248,317$ ) were enlisted. The data used were maintained by the AFPC in San Antonio, Texas and is available to the public via an FOIA request. For statistical analysis, the outcome/dependent variable was divorce rate. Divorce rate was measured as a count of participants who were divorced. The independent variables were AFS, gender, race, career group, and deployment rate. To answer each of the research questions, contingency tables were created, and chi-square analyses were utilized, comparing divorce rate with each of the independent variables. For all research questions, a chi-square test assumed there were at least five subjects in each square of the contingency table. If this assumption was not met, Fisher's exact test was used instead.

In this chapter I present the results of the data analysis methods following the collection and organization of the data, including details on the research questions and hypotheses, a description of the sample used for statistical analysis, and an exploration of the statistical tests used to observe the research questions and hypotheses. This chapter concludes with a brief summary section.

### **Research Questions and Hypotheses**

The research questions and hypotheses are as follows.

RQ1: What are the differences in divorce status among each of the 94 ordinary enlisted AFSs during fiscal year 2011?

$H_01$ : The divorce statuses across all AFSs are statistically equal.

$H_a1$ : Different AFSs exhibit statistically significant different divorce statuses.

RQ2: What are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011?

$H_02$ : The status of divorce among all racial categories and genders are heterogeneous.

$H_a2$ : The differences in status of divorce among the various racial categories and genders are statistically significant.

RQ3: What are the differences among the six Air Force career groups in divorce status during fiscal year 2011?

$H_03$ : The rates of divorce across all Air Force career groups are homogeneous.

$H_a3$ : The rates of divorce among the 6 Air Force career groups are statistically significant.

RQ4: Does divorce status within the six career groups vary by gender and race during fiscal year 2011?

$H_04$ : The status of divorce among specific demographic groups are equal across all six Air Force career groups.

$H_{a4}$ : The status of divorce among specific demographic groups within the six Air Force career groups is statistically significant.

RQ5: Does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011?

$H_{05}$ : There is no correlation between divorce status and deployment rates across all six Air Force career groups.

$H_{a5}$ : There is a statistically significant correlation between divorce status and deployment rates across all six Air Force career groups.

### **Description of Study Variables**

The outcome/dependent variable used for analysis was divorce rate. Divorce rate was measured as a continuous count of subjects who were divorced versus those who were not divorced (married, marriage annulled, legally separated, and widowed). After deleting single subjects from the sample, 11.8% ( $n = 18,755$ ) of the study participants were divorced, with 88.2% ( $n = 139,574$ ) not divorced. Of those not divorced, a negligible percentage (0.062%) had marriages that were either annulled ( $n = 78$ ) or legally separated ( $n = 13$ ).

For each research question, the divorce rate was broken down by the independent variables of air force specialty, gender, race, air force career, and deployment rate. Tables 5 – 10 show an overall summary of each independent variable.

Table 5 shows a summary of the 94 ordinary AFSs. Each of the individual AFSs accounted for a small percentage of the total number of AFSs, with percentages ranging from 0% to 9%. Some of the smaller AFSs were 3C2XX Network Integration (0%),

1B0XX Knowledge/Cyber System Operations (<1%,  $n = 2$ ), and 3C0XX Communication-Computer Systems (<1%,  $n = 2$ ), and some of the larger were 2A5XX Aerospace Maintenance (7.0%,  $n = 11,077$ ), 2A6XX Aerospace Propulsion (7.7%,  $n = 12,170$ ) and 3P0XX Security Forces, the Air Force military police (9.2%,  $n = 14,497$ ).

For race (Table 6), most were White (72.4%,  $n = 114,701$ ), followed by 15% ( $n = 23,718$ ) Black, 6% ( $n = 9,416$ ) declined to respond, 2.5% ( $n = 3,938$ ) identified as more than one race, 2.2% ( $n = 3,516$ ) were Asian, 1.2% ( $n = 1,894$ ) were Native Hawaiian/Pacific Islander, and 0.7% ( $n = 1,146$ ) were American Indian/Native Alaskan. Also, most were male (80.8%,  $n = 127,892$ ) with 19.2% ( $n = 30,437$ ) female (Table 7).

For career groups, 16.1% ( $n = 25,508$ ) worked in Operations, 39.9% ( $n = 63,183$ ) in Logistics and Maintenance, 32.7% ( $n = 251,818$ ) in Support, 8.9% ( $n = 14,092$ ) in Medical, 0.65% ( $n = 1,022$ ) in Professional careers, and 1.7% ( $n = 2,706$ ) worked in Acquisition (Table 8).

Deployment rate, the final independent variable, was defined by organizing career groups into low/medium/high stress levels for the purposes of this study. The data was obtained via an FOIA request for the quarterly “stressed list” as described in Chapter 3. Pursuant to the data obtained through the FOIA request, those career groups with the highest percentage of personnel assigned to high OPSTEMPO deployments were categorized as high stress, those with fewer percentage of personnel assigned to such frequent deployments were classified as medium and low stress, respectively. Based on this information, 49.5% ( $n = 78,297$ ) had low deployment rates, 17.8% ( $n = 28,214$ ) had medium deployment rates, and 32.7% ( $n = 51,818$ ) had high deployment rates.

Table 5

*Summary of Air Force Specialty*

	<i>N</i>	<i>Percent</i>
1A0XX	483	0.31
1A1XX	1,255	0.79
1A2XX	1,452	0.92
1A3XX	887	0.56
1A4XX	485	0.31
1A6XX	148	0.09
1A7XX	255	0.16
1A8XX	945	0.60
1B0XX	2	0.00
1B4XX	144	0.09
1C0XX	983	0.62
1C1XX	2,049	1.29
1C2XX	338	0.21
1C3XX	1,251	0.79
1C4XX	723	0.46
1C5XX	744	0.47
1C6XX	704	0.44
1C7XX	484	0.31
1N0XX	2,019	1.28
1N1XX	1,374	0.87
1N2XX	1,308	0.83
1N3XX	1,729	1.09
1N4XX	1,144	0.72
1P0XX	1,577	1.00
1S0XX	307	0.19
1T0XX	394	0.25
1T2XX	305	0.19
1U0XX	375	0.24
1W0XX	1,643	1.04
2A0XX	1,002	0.63
2A3XX	7,920	5.00
2A5XX	11,077	7.00
2A6XX	12,170	7.69

*table continues*

	<i>N</i>	<i>Percent</i>
2A7XX	2,922	1.85
2E1XX	3	0.00
2F0XX	2,568	1.62
2G0XX	605	0.38
2M0X	1,171	0.74
2P0XX	563	0.36
2R0XX	432	0.27
2R1XX	494	0.31
2S0XX	4,768	3.01
2T0XX	1,086	0.69
2T1XX	1,621	1.02
2T2XX	2,980	1.88
2T3XX	2,388	1.51
2W0X	4,587	2.90
2W1X	4,349	2.75
2W2X	477	0.30
3A0XX	3	0.00
3C0XX	2	0.00
3C2XX	0	0.00
3D0XX	7,914	5.00
3D1XX	9,990	6.31
3E0XX	2,038	1.29
3E1XX	1,053	0.67
3E2XX	1,262	0.80
3E3XX	1,077	0.68
3E4XX	1,247	0.79
3E5XX	532	0.34
3E6XX	275	0.17
3E7XX	2,023	1.28
3E8XX	702	0.44
3E9XX	508	0.32
3M0XX	2,582	1.63
3N0XX	902	0.57
3N1XX	390	0.25
3N2XX	144	0.09
3P0XX	14,497	9.16

*table continues*

	<i>N</i>	<i>Percent</i>
3S0XX	3,179	2.01
3S1XX	142	0.09
3S2XX	962	0.61
3S3XX	394	0.25
4A0XX	1,901	1.20
4A1XX	744	0.47
4A2XX	393	0.25
4B0XX	660	0.42
4C0XX	516	0.33
4D0XX	212	0.13
4E0XX	766	0.48
4H0XX	197	0.12
4J0XX	244	0.15
4M0XX	216	0.14
4N0XX	4,043	2.55
4N1XX	456	0.29
4P0XX	565	0.36
4R0XX	608	0.38
4T0XX	763	0.48
4V0XX	168	0.11
4Y0XX	1,640	1.04
5J0XX	713	0.45
5R0XX	309	0.20
6C0XX	1,084	0.68
6F0XX	1,622	1.02

Table 6

*Summary of Race*

	<i>N</i>	<i>Percent</i>
Am. Indian/Native Alaskan	1,146	0.72
Asian	3,516	2.22
Black	23,718	14.98
Declined to respond	9,416	5.95
More than 1 race	3,938	2.49
Hawaiian, Pacific Islander	1,894	1.20
White	11,4701	72.44

Table 7

*Summary of Gender*

	<i>N</i>	<i>Percent</i>
Female	30,437	19.22
Male	127,892	80.78

Table 8

*Summary of Career*

	<i>N</i>	<i>Percent</i>
Operations	25,508	16.11
Logistics and Maintenance	63,183	39.91
Support	51,818	32.73
Medical	14,092	8.90
Professional	1,022	0.65
Acquisition	2,706	1.71

Table 9

*Summary of Deployment Status*

	<i>N</i>	<i>Percent</i>
Low	78,297	49.45
Medium	27,214	17.82
High	51,818	32.73

### Research Question 1

RQ1 asked, “What are the differences in divorce status among each of the 94 ordinary enlisted AFSs during fiscal year 2011?” To examine this research question, descriptive statistics followed by a chi-square test of association was observed. Table 10 shows a summary of divorce rate by AFS, and Figure 1 depicts a bar chart of the AFSs with the top 10 divorce rates.

Results of the chi-square test showed that there was a significant difference in divorce status among the AFSs ( $\chi^2 = 1.2e+03, p < 0.0001$ ). Some AFSs had significantly higher divorce rates than others, where the top 10 divorce rates were seen at 1A6XX Flight Attendant (27.0%), 3S1XX Equal Opportunity (23.9%), 4A1XX Medical Material (19.0%), 4A0XX Health Services Management (15.6%), 3S0XX Personnel (18.5%), 5J0XX Paralegal (18.2%), 4C0XX Mental Health Service (17.6%), 3S2XX Education & Training (16.7%), 6F0XX Financial Management and Comptroller (16.7%), and 4T0XX Medical Laboratory (16.4%). AFS 3C0XX Communication-Computer System and 3A0XX Knowledge Operations Management exhibited higher divorce rates than those listed above, yet these AFSs were excluded due to their statistically insignificant small population sizes ( $n = 2$  and  $n = 3$ , respectively). The results demonstrate that the null hypothesis can be rejected, concluding that different AFSs exhibit statistically significant different divorce statuses.

Table 10

*Summary of Divorce by Air Force Specialty*

	<i>Divorced</i>		<i>Not divorced</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
1A0XX	38	7.87	445	92.13
1A1XX	138	11.00	1,117	89.00
1A2XX	124	8.54	1,328	91.46
1A3XX	109	12.29	778	87.71
1A4XX	55	11.34	430	88.66
1A6XX	40	27.03	108	72.97
1A7XX	25	9.80	230	90.20
1A8XX	120	12.70	825	87.30
1B0XX	0	0.00	2	100.00
1B4XX	20	13.89	124	86.11
1C0XX	159	16.17	824	83.83
1C1XX	206	10.05	1,843	89.95
1C2XX	28	8.28	310	91.72
1C3XX	186	14.87	1,065	85.13
1C4XX	61	8.44	662	91.56
1C5XX	87	11.69	657	88.31
1C6XX	70	9.94	634	90.06
1C7XX	61	12.60	423	87.40
1N0XX	277	13.72	1,742	86.28
1N1XX	157	11.43	1,217	88.57
1N2XX	154	11.77	1,154	88.23
1N3XX	185	10.70	1,544	89.30
1N4XX	144	12.59	1,000	87.41
1P0XX	186	11.79	1,391	88.21
1S0XX	39	12.70	268	87.30
1T0XX	26	6.60	368	93.40
1T2XX	21	6.89	284	93.11
1U0XX	32	8.53	343	91.47
1W0XX	199	12.11	1,444	87.89
2A0XX	95	9.48	907	90.52
2A3XX	725	9.15	7,195	90.85
2A5XX	970	8.76	10,107	91.24
2A6XX	1,270	10.44	10,900	89.56
2A7XX	307	10.51	2,615	89.49

*table continues*

	<i>Divorced</i>		Not divorced	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
2F0XX	268	10.44	2,300	89.56
2G0XX	97	16.03	508	83.97
2M0XX	149	12.72	1,022	87.28
2P0XX	46	8.17	517	91.83
2R0XX	53	12.27	379	87.73
2R1XX	73	14.78	421	85.22
2S0XX	759	15.92	4,009	84.08
2T0XX	171	15.75	915	84.25
2T1XX	176	10.86	1,445	89.14
2T2XX	316	10.60	2,664	89.40
2T3XX	253	10.59	2,135	89.41
2W0XX	547	11.93	4,040	88.07
2W1XX	446	10.26	3,903	89.74
2W2XX	34	7.13	443	92.87
3A0XX	1	33.33	2	66.67
3C0XX	1	50.00	1	50.00
3C2XX	0	--	0	--
3D0XX	1,139	14.39	6,775	85.61
3D1XX	1,079	10.80	8,911	89.20
3E0XX	182	8.93	1,856	91.07
3E1XX	105	9.97	948	90.03
3E2XX	110	8.72	1,152	91.28
3E3XX	99	9.19	978	90.81
3E4XX	139	11.15	1,108	88.85
3E5XX	56	10.53	476	89.47
3E6XX	35	12.73	240	87.27
3E7XX	168	8.30	1,855	91.70
3E8XX	61	8.69	641	91.31
3E9XX	66	12.99	442	87.01
3M0XX	413	16.00	2,169	84.00
3N0XX	123	13.64	779	86.36
3N1XX	32	8.21	358	91.79
3N2XX	6	4.17	138	95.83
3P0XX	1,618	11.16	12,879	88.84
3S0XX	588	18.50	2,591	81.50
3S1XX	34	23.94	108	76.06
3S2XX	161	16.74	801	83.26

*table continues*

	<i>Divorced</i>		<i>Not divorced</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
4A0XX	353	18.57	1,548	81.43
4A1XX	141	18.95	603	81.05
4A2XX	36	9.16	357	90.84
4B0XX	100	15.15	560	84.85
4C0XX	91	17.64	425	82.36
4D0XX	25	11.79	187	88.21
4E0XX	121	15.80	645	84.20
4H0XX	24	12.18	173	87.82
4J0XX	34	13.93	210	86.07
4M0XX	30	13.89	186	86.11
4N0XX	604	14.94	3,439	85.06
4N1XX	72	15.79	384	84.21
4P0XX	91	16.11	474	83.89
4R0XX	81	13.32	527	86.68
4T0XX	125	16.38	638	83.62
4V0XX	26	15.48	142	84.52
4Y0XX	250	15.24	1,390	84.76
5J0XX	130	18.23	583	81.77
5R0XX	33	10.68	276	89.32
6C0XX	147	13.56	937	86.44
6F0XX	271	16.71	1,351	83.29

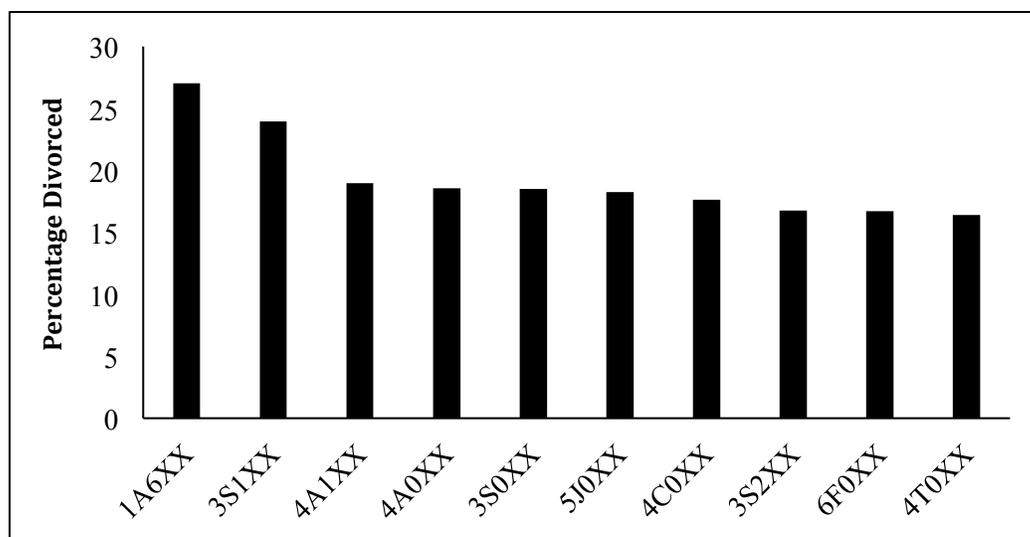


Figure 1. Top 10 AFSs with the greatest percentage of divorced personnel.

## Research Question 2

Research question two asked, what are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011? Table 11 shows a summary of those who were divorced by race and gender. Figures 2 and 3 also show percentages of those who were divorced, by each race group and by males/females. Results of the Chi-Square tests showed that divorce rates were significantly different by race ( $\chi^2 = 436.7, p < 0.0001$ ) and gender ( $\chi^2 = 3.7e+03, p < 0.0001$ ). Specifically, divorce rates were highest for Blacks (15.5%), those who declined to respond (13.8%), and those who identified to more than one race (12.5%). Also, females had a higher divorce rate (22.0%) than males (9.4%). Therefore the null hypothesis can be rejected, concluding differences in status of divorce among the various racial categories and genders are statistically significant.

Table 11

### *Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
<b>Race</b>				
Am. Indian/Native Alaskan	136	11.87	1,010	88.13
Asian	343	9.76	3,173	90.24
Black	3,675	15.49	20,043	84.51
Declined to respond	1,297	13.77	8,119	86.23
More than 1 race	491	12.47	3,447	87.53
Hawaiian, Pacific Islander	185	9.77	1,709	90.23
White	12,628	11.01	102,073	88.99
<b>Gender</b>				
Female	6,680	21.95	23,757	78.05
Male	12,075	9.44	11,5817	90.56

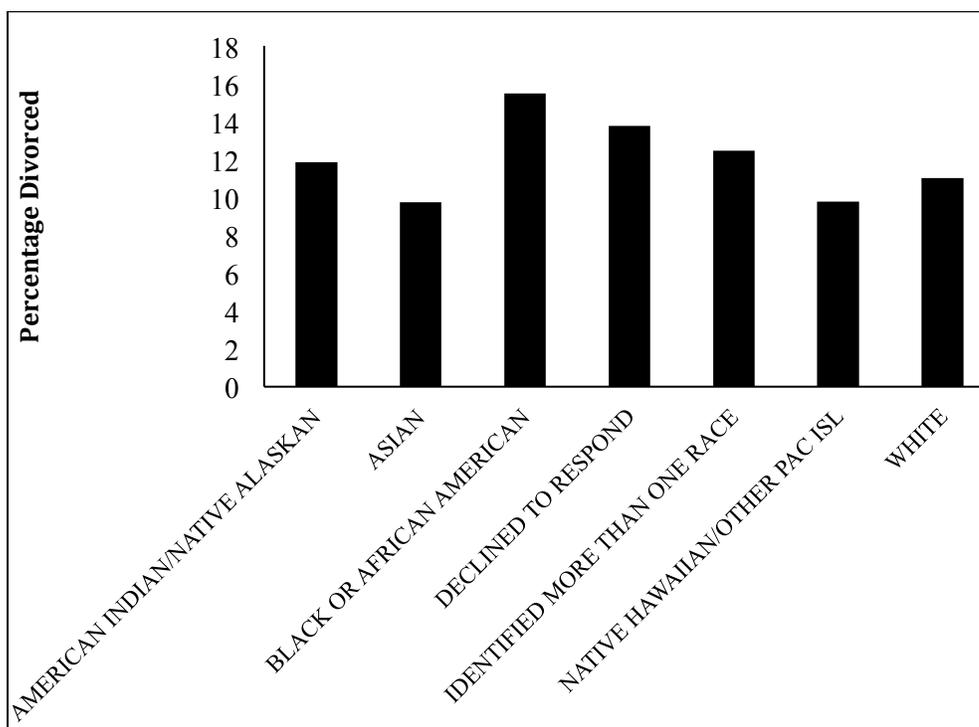


Figure 2. Divorce status by racial groups.

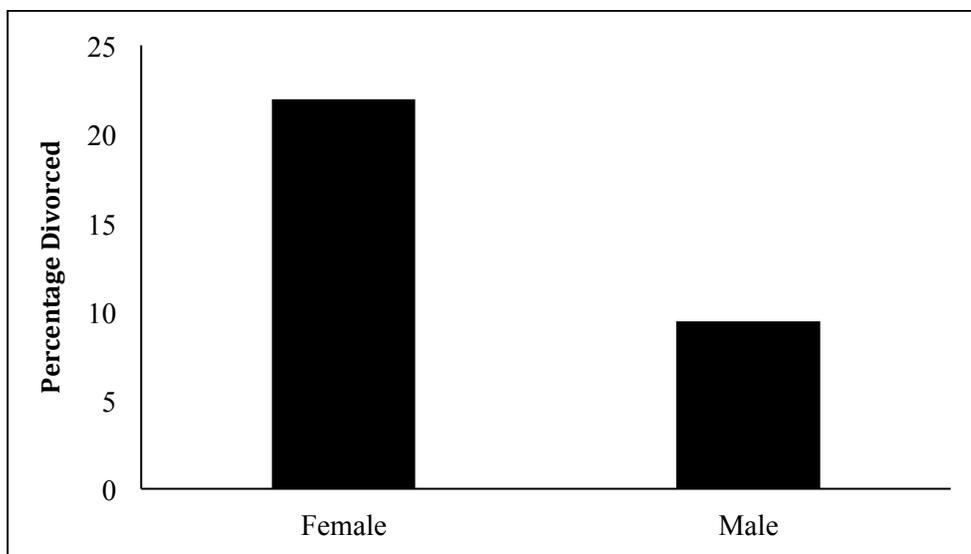


Figure 3. Divorce status by gender.

### Research Question 3

Research question three asked, what are the differences among the six Air Force career groups in divorce status during fiscal year 2011? Table 12 shows a summary of those who were divorced by career groups. Figure 4 also shows rates of those who were divorced by each career group. Results of the Chi-Square tests showed that divorce rates were significantly different by career ( $\chi^2 = 330.2, p < 0.0001$ ). Specifically, those who worked in Medical (15.6%), Professional (16.0%), and Acquisition (15.5%) careers had the highest divorce rates. Therefore the null hypothesis can be rejected, concluding that rates of divorce among the 6 Air Force career groups are statistically significant.

Table 12

*Summary of Divorce Status by Career Group*

	<i>Divorced</i>		<i>Not divorced</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
Operations	2,947	11.55	22,561	88.45
Logistics and maintenance	6,755	10.69	56,428	89.31
Support	6,268	12.10	45,550	87.90
Medical	2,204	15.64	11,888	84.36
Professional	163	15.95	859	84.05
Acquisition	418	15.45	2,288	84.55

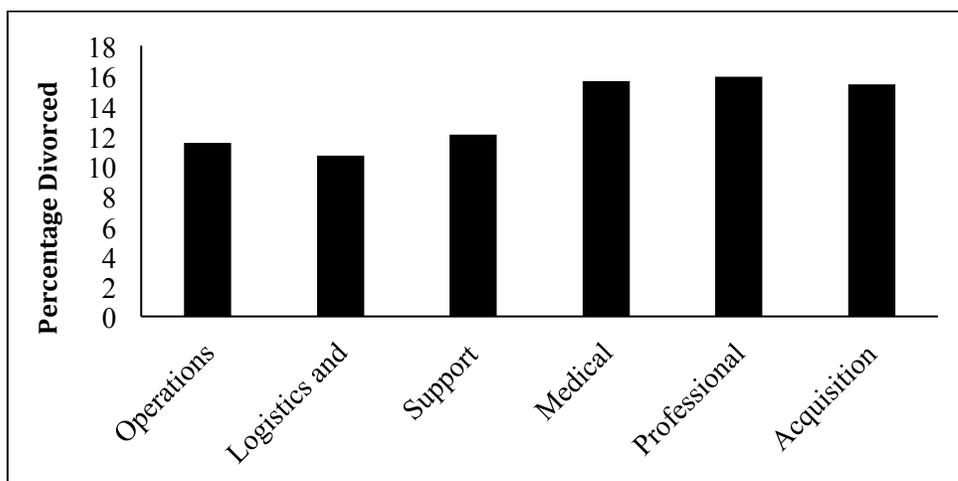


Figure 4. Divorce status by career group.

#### Research Question 4

Research question four asked, does divorce status vary within the six career groups vary by gender and race during fiscal year 2011? Tables 13 through 18 show a summary of those who were divorced by race and gender within each of the six career groups, as well as the results of the statistical tests. Results of the Chi-Square tests showed that divorce rates were significantly different by race within all career groups except Professional ( $p = 0.814$ ) and Acquisition ( $p = 0.295$ ) careers. Also, divorce rates were significantly different by males and females within all career groups (all  $p$ -values  $< 0.0001$ ). Within each career, some races had significantly higher divorce rates, following the same patterns that were seen for research question 2. Additionally, females always had significantly higher divorce rates than males. Therefore the null hypothesis can be rejected, concluding the status of divorce among specific demographic groups within the

six Air Force career groups is statistically significant, for all subgroups except race within Professional and Acquisition careers.

Table 13

*Operations Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<b>Race</b>					< 0.0001
Am. Indian/Native Alaskan	14	5.69	232	94.31	
Asian	55	6.18	835	93.82	
Black	441	8.93	4,496	91.07	
Declined to respond	189	10.58	1,597	89.42	
More than 1 race	65	5.35	1,150	94.65	
Hawaiian, Pacific Islander	24	6.22	362	93.78	
White	2,159	6.77	29,736	93.23	
<b>Gender</b>					< 0.0001
Female	1,124	13.03	7,503	86.97	
Male	1,823	5.57	30,905	94.43	

Table 14

*Logistics and Maintenance Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<b>Race</b>					< 0.0001
Am. Indian/Native Alaskan	50	7.19	645	92.81	
Asian	101	4.57	2,110	95.43	
Black	1,071	8.18	12,023	91.82	
Declined to respond	416	9.97	3,757	90.03	
More than 1 race	154	5.99	2,418	94.01	
Hawaiian, Pacific Islander	57	4.82	1,125	95.18	
White	4,906	6.72	68,070	93.28	
<b>Gender</b>					< 0.0001
Female	1,409	14.10	8,581	85.90	
Male	5,346	6.15	81,567	93.85	

Table 15

*Support Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<b>Race</b>					< 0.0001
Am. Indian/Native Alaskan	51	8.10	579	91.90	
Asian	107	4.86	2096	95.14	
Black	1,522	9.08	15,231	90.92	
Declined to respond	466	11.48	3593	88.52	
More than 1 race	179	7.24	2,292	92.76	
Hawaiian, Pacific Islander	71	6.10	1,092	93.90	
White	3,872	6.97	51,666	93.03	
<b>Gender</b>					< 0.0001
Female	2,369	14.48	13,997	85.52	
Male	3,899	5.87	62,552	94.13	

Table 16

*Medical Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<b>Race</b>					< 0.0001
Am. Indian/Native Alaskan	19	10.92	155	89.08	
Asian	71	7.33	897	92.67	
Black	506	10.69	4,229	89.31	
Declined to respond	191	14.44	1,132	85.56	
More than 1 race	77	10.46	659	89.54	
Hawaiian, Pacific Islander	29	7.95	336	92.05	
White	1,311	10.26	11,471	89.74	
<b>Gender</b>					< 0.0001
Female	1,439	13.89	8,919	86.11	
Male	765	7.13	9,960	92.87	

Table 17

*Professional Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<u>Race</u>					0.814
Am. Indian/Native Alaskan	1	10.00	9	90.00	
Asian	1	4.55	21	95.45	
Black	45	14.06	275	85.94	
Declined to respond	14	16.28	72	83.72	
More than 1 race	4	16.00	21	84.00	
Hawaiian, Pacific Islander	1	12.50	7	87.50	
White	97	12.50	679	87.50	
<u>Gender</u>					< 0.0001
Female	122	18.65	532	81.35	
Male	41	6.95	549	93.05	

Table 17

Table 18

*Acquisition Careers: Summary of Divorce Status by Race and Gender*

	<i>Divorced</i>		<i>Not divorced</i>		<i>p-value</i>
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>	
<u>Race</u>					0.295
Am. Indian/Native Alaskan	1	3.57	27	96.43	
Asian	8	5.06	150	94.94	
Black	90	10.60	759	89.40	
Declined to respond	21	11.05	169	88.95	
More than 1 race	12	9.68	112	90.32	
Hawaiian, Pacific Islander	3	8.33	33	91.67	
White	283	10.96	2,300	89.04	
<u>Gender</u>					< 0.0001
Female	217	16.87	1,069	83.13	
Male	201	7.49	2,481	92.51	

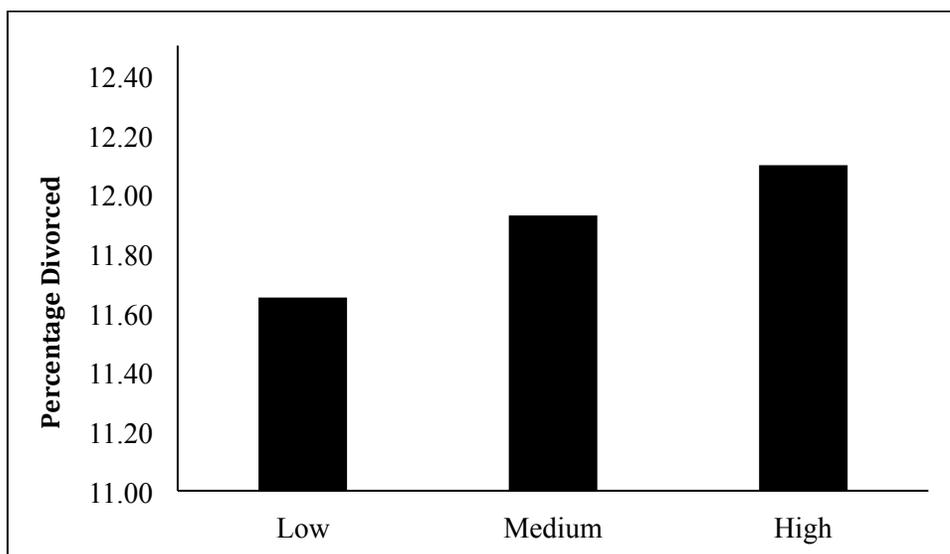
### Research Question 5

Research question five asked, does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011? Table 19 shows a summary of those who were divorced by the low/medium/high deployment rate groups. Figure 5 also shows rates of those who were divorced by deployment groups. Results of the Chi-Square tests showed that divorce rates were significantly different by deployment rate ( $\chi^2 = 6.15$ ,  $p = 0.046$ ). Those with high deployment rate had the highest divorce rate (12.1%), followed by medium deployment (11.9%), and then low (11.7%). Therefore the null hypothesis can be rejected, concluding that there is a statistically significant correlation between divorce status and deployment rates across all six Air Force career groups.

Table 19

*Summary of Divorce Status by Deployment Rate*

	<i>Divorced</i>		<i>Not divorced</i>	
	<i>N</i>	<i>Percent</i>	<i>N</i>	<i>Percent</i>
Low	9,122	11.65	69,175	88.35
Medium	3,365	11.93	24,849	88.07
High	6,268	12.10	45,550	87.90



*Figure 5.* Divorce status by deployment rate.

### Summary

The main purpose of this study was to describe, compare, analyze, and explore divorce status of the active duty enlisted corps of the U.S. Air Force in 2011 ( $N = 247,644$ ), the year in which Air Force divorce rates peaked at an all-time high. Results of the statistical analyses showed that divorce rates were significantly different by AFSs, race, gender, careers, and deployment rates. The analyses showed places where the divorce versus non-divorce rates were higher for some groups, but not for others.

Chapter 5 will consist of interpretations of the findings, limitations of this study, recommendations for future studies, and implications. I will discuss in more detail what the data mean for the current study, and how the results can be used for future studies pertaining to exploring divorce rates of the active duty enlisted corps of the U.S. Air Force.

## Chapter 5: Discussion, Conclusions, and Recommendations

### Introduction

Marital dissolution and divorce among military families are of both national and institutional concern (Lundquist, 2007; The White House, 2011). Servicemembers in satisfying marriages are more mission-focused, more likely to reenlist, and exhibit a higher level of morale than similarly situated troops who are either unmarried or divorced (Saltzman et al., 2011). Married troops also exhibit lower rates of depression and fewer job-related problems than their single counterparts (National Institute of Mental Health, 2011). As such, protecting the military family does not only preserve a basic unit of society, it also contributes to the national defense. The existing body of research attributes military divorce rates to a host of factors including both demographic factors that may equally apply to civilian populations and military-specific factors such as deployments (Negrusa et al., 2014). However, despite the significant amount of literature and studies on the topic, the causes of divorce in the military and the possible relationship between deployments and divorce are still not fully understood. Divorce rates in the Air Force are of particular concern, as the rates of divorce among enlisted couples in the Air Force are higher than the rates of divorce in any other branch of military service (DoD 2013). At present, the existing research fails to explain this phenomenon.

The purpose of this study was to describe, compare, analyze, and explore divorce status of the active duty enlisted corps of the U.S. Air Force in 2011 ( $N = 247,644$ ), the year in which military divorce and marital issue rates peaked at an all-time high. In this study I aimed to analyze the relationship between military occupation, gender, race, and

deployments with the divorce status of Air Force servicemembers. Pursuant to this goal, the study answered five research questions.

### **Interpretation of the Findings**

#### **Research Question One**

The first research question was, "What are the differences in divorce status among each of the 94 ordinary enlisted AFSs during fiscal year 2011?" To examine this research question, descriptive statistics were employed and a chi-square test of association was observed. The results demonstrated that the null hypothesis can be rejected, concluding that different AFSs exhibit statistically significantly different divorce statuses.

The results of this study are consistent with the available literature. Earlier research had already demonstrated that the military institution is not a monolithic society with equal risk of divorce across all populations and branches of service. Instead, each branch of service in the military embodies a unique set of stressors and a unique rate of divorce (Karney & Crown, 2007). Moreover, earlier research has demonstrated that there are statistically different divorce rates among the different specialties of Army soldiers. (Negrusa et al., 2014). This study was, however, the first to examine the different divorce rates among different AFSs. As expected, the different AFSs did exhibit statistically different divorce rates.

The results of this study are, however, still surprising because of the types of AFSs that demonstrated the highest rates of divorce. The top 10 AFSs with the highest percentage of divorced personnel were AFS 1A6XX Flight Attendant (27.0%), 3S1XX Equal Opportunity (23.9%), 4A1XX Medical Material (19.0%), 4A0XX Health Services

Management (15.6%), 3S0XX Personnel (18.5%), 5J0XX Paralegal (18.2%), 4C0XX Mental Health Service (17.6%), 3S2XX Education & Training (16.7%), 6F0XX Financial Management and Comptroller (16.7%), and 4T0XX Medical Laboratory (16.4%).

None of the AFSs with the 10 highest percentages of divorced personnel embody combat-like functions or duties that are unique to the military. To be sure, the roles of each AFS is shaped by the overarching Air Force mission, and thus each AFS is somewhat different and more militarized than the civilian equivalent of the job. Yet, it was expected that those AFSs with the most combat-like, military specific functions would experience the highest rates of divorce. Military specific AFSs such as Security Forces or Explosive Ordinance Disposal—those most likely to engage in direct ground combat while deployed—did not experience the highest rates of divorce. Instead, this distinction went to more prosaic AFSs including Health Services Management and Personnel, AFSs that may be assumed to be easier on family life.

The results of this research question suggest the possibility that the military may have neglected to care for the families of certain supporting professions in favor of caring for the families of troops who engage in warlike pursuits. Though most supporting troops do not engage in direct combat and many work at traditional desk jobs, these troops are nonetheless still subject to a host of military stressors including separation from family, nighttime missions, and high operational demands. Accordingly, it would behoove future Air Force leaders to concentrate family care efforts on the troops in the AFSs who actually need it most.

## **Research Question Two**

The second research question was, "What are the differences in divorce status among the different racial categories and genders in the Air Force during fiscal year 2011?" The results indicated that the null hypothesis can be rejected, concluding differences in status of divorce among the various racial categories and genders are statistically significant.

**Race.** In regard to race, Teachman and Teadrow (2008) posited that this demographic variable accounts for one of the prime differentials in rates of divorce. The bulk of research on race and divorce, both among civilian and military couples, focused on the differences between Black couples and White couples, and found a higher rate of divorce among the former group. For example, Bramlett et al. (2001) reported that the rate of marital dissolution for Black women is nearly 50% higher than for White women.

Fortunately, military service has been found to ameliorate the effects of race on divorce, possibly by leveling the playing field and creating an egalitarian environment that reduces discrimination and thereby, reduces external stressors among Black couples. Lundquist (2006) found that the racial differences in divorce rates among civilians are often eliminated during active duty military service, wherein Black and White servicemembers share an almost equal rate of divorce.

On the other hand, earlier research has limited the marital benefits of military service to the Army. Subsequent research reported that while service in the Army reduced divorce among Black couples by as much as 46%, no such similar benefits were found among Black servicemembers who served in the Navy or Air Force (Teachman &

Teadrow, 2008). It is possible that the Army, the most racially diverse of all the branches of military service, creates a positive experience for minority couples that may not be present in other branches of the military. The Air Force is less diverse, and employs fewer Black troops than the Army or Navy, though they are more diverse than the Marines (DoD, 2014).

Unfortunately, the results of this study confirm that the positive effects of military service on Black divorce rates may be limited to the Army and may not be present in the Air Force. This study found that the percentage of Black Air Force servicemembers who were divorced (15.5%) was 41% greater than the percentage of White Air Force servicemembers who were divorced (11%), though Asians and Hawaiian/Pacific Islanders exhibited the lowest rates of divorce overall (both at 9.8%). These results must behoove Air Force leadership to look toward the Army and determine what factors it may implement to level the playing field and reduce marital stressors among Black Air Force couples.

**Gender.** The findings of this study pertaining to gender and divorce are perhaps the most troubling data of all. The percentage of females who are divorced (22%) is more than twice as high as the number of males who are divorced (9.4%). This conforms to earlier research, conducted between 2001 and 2005, that found an alarmingly high divorce rate among female servicemembers in all branches of the military (Karney & Crown, 2007). Unfortunately, a decade later, the divorce rate of women in the Air Force continues to remain unacceptably high. These findings illustrate that Air Force leadership has failed to address the marital stressors that affect its female troops.

### **Research Question Three**

The third research question was, "What are the differences among the six Air Force career groups in divorce status during fiscal year 2011?" The results indicated that the null hypothesis can be rejected, concluding that rates of divorce among the six Air Force career groups are statistically significant. The results of the study are consistent with the fact that the different career groups would have different rates of divorce; as each military occupation has a distinct mission, culture, and degree of military stress.

Each enlisted Air Force servicemember is identified under one of nine broad career categories in the Air Force. The nine career groups are (a) Operations, (b) Logistics and Maintenance, (c) Support, (d) Medical, (e) Professional, (f) Acquisition, (g) Special Investigations, (h) Special Duties, and (i) reporting identifiers for Air Force servicemembers awaiting a change of status (e.g. servicemembers who are still undergoing initial training, prisoners, or wounded warriors; Air Force Instruction 36-2101, 2013). As explained in Chapter 3, career groups seven through nine presented too many confounding variables and were therefore excluded from this study.

Earlier studies have found that military occupation affects the rates of divorce in the Army. Thus, for example, infantry troops who deployed were less likely to divorce than intelligence troops who deployed, due in part to the different types and degrees of stress that are attendant to each military specialty (Negrusa et al, 2014). Heretofore, similar exploratory research had never been conducted on the Air Force, the branch of service most likely to experience an increase in divorce rates as a result of deployments. The results of this study were consistent with the available literature, finding that divorce

rates are correlated to the different occupations performed by the six different Air Force career groups.

The results were, however, surprising in a similar manner to the results presented in RQ1. Contrary to expectations, the greatest rates of divorce were not found in Operations (11.5%), Logistics and Maintenance (10.7%), or Support (12.1%), the career groups that include dangerous, combat related occupations such as aerial gunners (Operations), munitions systems (Logistics and Maintenance), and security forces (Support). Instead, the highest rates of divorce were found among the Professional (16%), Medical (15.6%), and Acquisition (15.5) career groups. As stated in the discussion of RQ1, the Air Force may need to reallocate its family-care resources to focus more on those career groups that need it most.

#### **Research Question Four**

The fourth research question was, "Does divorce status within the six career groups vary by gender and race during fiscal year 2011?" The results indicated that the null hypothesis can be rejected, concluding the status of divorce among specific demographic groups within the six Air Force career groups is statistically significant for all subgroups except race within Professional and Acquisition careers groups, the two smallest career groups, which represent only 0.65% and 1.7% of the population studied, respectively.

The results of research question 4 confirmed the effects of the stress hypothesis on females and Black couples. This research question demonstrated that the relevant marital stressors are not limited to a given career group that skews the data. Instead, the

findings indicate that the rates of divorce among female servicemembers are higher than the rates of divorce among male servicemembers in all six career groups studied.

Similarly, the heightened rates of divorce among Black couples were observed in all but the two smallest career groups, Professional and Acquisitions.

These findings offer some hope, in that they direct further research toward the Professional and Acquisition career groups to inquire about means of reducing marital stressors among Black couples. Regrettably, there exists no similar illustrative career group with which to guide researchers toward ameliorating the excessively high rates of divorce among female Air Force servicemembers.

#### **Research Question Five**

The fifth research question was, "Does divorce status vary by deployment rate among the six Air Force career groups during fiscal year 2011?" The results indicated that the null hypothesis can be rejected, concluding that there is some, albeit small, correlation between divorce status and deployment rates across all six Air Force career groups. The results, however, were not practically significant ( $p = 0.046$ ) and may only have reached statistical significance due to the large sample size.

Common lore readily attributes military divorce rates to the increase in deployments in support of the Global War on Terror. Over 2.1 million U.S. troops have deployed to the Middle East and Southwest Asia since September 11, 2001, and about one third of those troops deployed for two years or more (Baiocchi, 2013). To the layperson, the increase in deployments serves as the logical explanation for the increase in military divorce rates. To the researcher, the nexus between the two variables is

murky. The findings of this study fall in line with a body of research that questions the correlation between deployments and divorce.

Certain studies do support the theory that deployments contribute toward military divorce. A recently published quantitative study found a positive relationship between subsequent divorce rates length of deployments (Negrusa et al., 2014). But other research found that deployments had no effect on marital functioning at all. A cross-sectional study in the field of army troops have confirmed that that couples who had been separated due to a deployment did not differ on any aspect of relationship functioning compared to their colleagues who had not deployed (Allen et al., 2010). Still other research found that deployments might be beneficial to a marriage. One qualitative study found that many members of the armed forces have reported that their marriages had been strengthened through the course of a deployment (Baptist et al, 2011). And an earlier quantitative study found that 77% of the population sample reported some positive consequences of deployment while only 63% reported negative consequences of deployment. The most commonly cited positive effects of deployment were pay increases, and time for self-improvement and reflective thought (Newby, 2005).

The results of the present study confirm the ambiguity surrounding the possible correlation between deployments and divorce. While there is some small correlation, the relationship between the two variables remains minimal.

### **Limitations of the Study**

The chief limitation to this study was that individual data relating to the deployment tempos of airmen are masked due to classification concerns. In other words,

the Air Force will not release whether a given individual deployed or whether a given individual was divorced. Instead, the Air Force released the demographic and divorce data of each Air Force Specialty or Career Group, so as to protect the privacy of the individual. The researcher, in turn, extrapolated the given data to obtain the reported results. It bears noting that this scenario was the best data that the researcher could get. Further, the research assumed that deployment ratios are more or less uniform for individual servicemembers within each military career group (Engel et al., 2006). It is noteworthy that this may not be absolutely accurate but this was the best assumption that the researcher could make. Thus, this has also been included in the limitation of the study.

It should also be noted that the data only listed the percentage of individuals within each subgroup who were either divorced or not divorced. The data did not indicate whether or not the given individuals divorced while they were in a given AFS or career group. That said, in 2011, 91 percent of Basic Trainees entered the Air Force single, while only .03 percent entered the Air Force divorced (AFPC, 2016). Thus, while the archival data to be studied does not specifically state whether or not a divorce occurred while the servicemember was in the military; there is a 99.7% chance that the divorce occurred while on active duty. Moreover, of the nine Air Force career groups, groups seven through nine were excluded from the study due to the high rate of Airmen who had crossed over from a different career group.

Another limitation of this study is that the results only illustrated which groups have the highest prevalence of divorce. Subsequent research is still necessary to explain

why the instances of divorce are higher for those subgroups. The results were limited by quantitative results because the researcher was not able to deal with the participants in a deeper level as how it is done if the method is qualitative. The sample population for this study was also designed to maintain validity and maximize generalizability. However, this also posed a limitation because the large population also meant that the researcher lacked the time to personally examine the background of each participant.

Only active component members of Air Force were included in this study. It can be said that even the inactive component members might also have various and significant experience that could contribute to the findings of this study. Members of the National Guard and Reserves have been excluded so as to limit external confounding variables that may be present in those members' civilian lives (Karney, Loughran & Pollard, 2014). This posed a limitation because the topic of the study may have been enriched if the abovementioned members had not been excluded.

Despite the limitations inherent to this study, the methods utilized in this research proved to be the most efficient and accurate method of analyzing the entire population of active duty, ordinary enlisted, airmen. The results of this study may guide targeted future studies that better answer the research questions herein.

### **Recommendations**

Among the three demographics observed in this study—career group, gender, and race—gender exhibits the highest correlation to divorce. Deployments, on the other hand, bear a tenuous relationship to divorce. Gender is the greatest predictor of divorce, as a female in the Air Force is more than twice as likely to be divorced than a male airman.

Policymakers and the media continue to wrongly to assume that deployments bear the strongest relationship to military divorce (Karney & Trail, 2017). It is strongly recommended that interest holders among both military and civilian leadership recognize this phenomenon by refocusing family-care resources and striving to reduce marital stressors among female servicemembers.

It is also recommended that future studies will also focus on other forms of theoretical foundation and not just the stress hypothesis. A quantitative research design was selected for the study. Quantitative methods focus upon empirically objective statistical measurements that can in turn be used to explain a given phenomenon. It is recommended that future studies employ qualitative or mixed methods to better understand the experiences and perceptions of Air Force families.

### **Implications**

The results of this study have the potential to improve the lives of countless families by reducing the rate of marital dissolution among military couples. The findings of this research may bear significance to theoretical understanding, practical application, and contribute to positive social change. Due to the practical application of the results of the study, the social implications of these findings are inevitably real. The study may contribute to our understanding of the stress hypothesis as it pertains to marital dissolution among military couples, particularly among families of female servicemembers. This understanding may in turn help ameliorate marital stressors and unlitamately reduce the rates of military divorce.

While research on the stress hypothesis dates to the post World War II era the nature and stressors of military service have changed drastically. The results of this study contribute to our understanding of the evolution of the stress hypothesis and how military stressors affect the contemporary Air Force servicemember. This research may further contribute to the overall performance of military servicemembers, both as professional warriors and as family members. The research in this study add to the understanding of the stress hypothesis and the stress theory, specifically regarding deployments and specific Air Force demographics and career groups, a heretofore unstudied topic.

The interpretation of the findings in this research may have practical significance if military leaders and troops apply the data and information derived from this study to reduce marital stressors and shift family-care resources to those demographics at the highest risk of divorce. The exploratory nature of this study may enlighten policymakers to broaden their perspective on marital stressors and shift the conversation from one that focuses overwhelmingly on deployments to one that recognizes the marital stressors attendant to women, minorities, and certain occupational specialties. Furthermore, post-hoc analysis of the characteristics and nature of the AFSs and career groups with the lowest rates of divorce may yield cross-sectional adaptations that can be utilized to reduce divorce across the Air Force and the Armed forces.

The findings of this research may contribute to positive social change on both the individual and organizational levels because the findings focus both on the work performance and the capability of the military personnel to maintain their social relationships. On the individual level, the research may help improve servicemembers'

marriages and families. On the organizational level, reducing the rates of divorce may enhance the operation readiness and re-enlistment rates of servicemembers (Lundquist, 2007); thereby improving the national security of our country.

### **Conclusion**

Quality family relationships among military personnel are imperative to our national security and the wellbeing of military families. This study explored whether different AFSs exhibited statistically different rates of divorce. The study also looked at the relationship of three independent variables and divorce. The null hypothesis of each of the five research questions in this study was rejected, finding a statistical significant correlation among each respective independent variable and divorce. Among the three independent variables, gender is most correlated with divorce. Female servicemembers in the Air Force are more than twice as likely to be divorced than their male co-workers. Race and career group were also correlated with divorce rate. Among all the independent variables studies, deployments bore the weakest correlation to divorce. The data presented in this study has significant implications for how leadership perceives military stressors. It has the ability to contribute to positive social change and improve the manner in which our nation cares for its military families.

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