STRESS, ROLE STRAIN, AND HEALTH IN YOUNG ENLISTED AIR FORCE
WOMEN WITH AND WITHOUT PRESCHOOL CHILDREN

DISSERTATION

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Philosophy in the Graduate School of The Ohio State University

By

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Currently women comprise 15% of the United States military force and 20% of newly recruited enlisted personnel. Statistics show there are gender differences in attrition. Women are at greatest risk to prematurely leave the service. Women leave most frequently due to pregnancy, medical problems, misconduct, performance shortfalls, or parenthood. Military women report that the stress of being in the military is highest among married women with no spouse present, younger enlisted women, and women of least education. Civilian working women report that stress is the highest during the years of having preschool aged children. This suggests that military women's stress may be related both to work and family roles, as well as from being women in the military. Work and family role strain can manifest as stress related symptoms. So, by negatively influencing the health of the individual, the net effect of stress related symptoms and role strain may be to decrease the overall mission readiness of the organization through decreased individual performance and increased attrition. Unfortunately, little is known about the effect of early motherhood on an enlisted career in terms of individual health and organizational mission readiness. This research was guided by the 1999 Social Determinants of Health Model by Marmot.
and Wilkinson. The aims of the study were to answer the following research questions: Are there differences between young enlisted women with and without preschool children on the following variables: marital status, family of origin socioeconomic status, minority status, type of work, perceived availability of military resources, multiple role strain, stress-related symptoms, health status, and career aspiration. 2) Among these variables, what are the best predictors of: a) multiple role strain, b) stress-related symptoms, c) mental health status, d) physical health status and e) career aspiration. Study participants included 100 junior enlisted women (17-24 year olds). A cross-sectional descriptive design was used: One group (50) had preschool children while another group (50) did not. Both groups were stationed at a large Mid-West Air Force Base. Data were collected using a socio-demographic questionnaire that collected data on family of origin socioeconomic status, type of work, marital status, maternal status, minority status, perceived availability of military resources, and career aspiration. The Daily Hassles Scale (multiple role strain both frequency and severity), the Basic Symptoms Inventory-18 (stress-related symptoms), and the SF-8 (mental and physical health) were also used to measure study variables. These 3 instruments are widely used and demonstrate strong reliability and validity. Chi-Square and t-tests indicated no differences between the women with and without preschool children on multiple role strain (frequency and severity), stress related symptoms, mental and physical health, and career aspiration. The only differences were in marital status, rank, and age with the women with children
being older, of higher rank and mostly married. In all the women, multiple regression analysis indicated that higher severity of multiple role strain scores (10.4% of variance explained) is related to low perceived availability of military resources ratings. Higher stress-related symptoms scores were related to higher frequency of multiple role strain scores (39.9% variance explained) as well as lower career aspiration (3.8% of variance explained). Lower mental health scores were related to high stress related symptoms scores (27.9% of variance explained), lower career aspiration (4.1% of variance explained), being nonwhite (3.9% of variance explained), and high frequency of multiple role strain (4.0% of variance explained). High career aspiration scores were related to higher perceived availability of military resources ratings (16.8% of variance explained), decreased family of origin socioeconomic status (4.5% of variance explained), and increased mental health status (3.3% of variance explained). This suggests that the stress and increased attrition that junior enlisted women experience may have less to do with combining work and motherhood and more to do with individual coping skills and levels of satisfaction with organizational resources. Nursing should be aware of the specific needs of this population through directly assessing the populations served in each healthcare setting. Nursing should also be aware that these women benefit from resources outside of the primary clinic such as life skills management but they often need healthcare workers to coordinate, educate, and follow-up on ancillary services.
DEDICATION

To my husband, Brian Chadwick, the love of my life and our two children, Robert and Madeline, the loves of our lives.
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CHAPTER 1
INTRODUCTION

The state of readiness of our military depends upon the availability of professionally trained individuals who are physically, psychologically, and emotionally ready to engage in required duty. While the numbers of women who choose to enter military service continues to increase, the rate of prematurely leaving the service is higher among women than men (McManimon, 2003). One study reports that women leave most frequently due to pregnancy, medical problems, misconduct, performance shortfalls, or parenthood, in no particular order (Bacon, 1998). Military women, themselves, report that the stress of being in the military is highest among married women with no spouse present, younger enlisted women, and women of least education (Bray, Fairbank, & Marsden, 1999). This suggests that stress may be related to work and family roles, as well as from being women in the military. During Department of Defense sponsored focus groups, junior enlisted women reported the least level of satisfaction with healthcare and other support compared to enlisted men and male and female officers (Defense Department Advisory Committee of Women in The Services [DACOWITS], 2003). One explanation for higher attrition rates and decreased
satisfaction among junior enlisted women might be that they are experiencing high levels of role strain and stress, contributing to stress related symptoms, leading them to increased attrition levels. By negatively influencing the health of the individual, the net effect of role strain and stress related symptoms may be to decrease the overall mission readiness of the organization, making this a research priority for the Department of Defense (McManimon, 2003).

This dissertation is presented in several chapters, each written in the form of a manuscript. Chapter 2 entitled "Perspectives of Early Age at First Motherhood and the Military: A Clash of Cultures" lays the historical framework for the current position of women in the military. Chapter 3 entitled "The Health Readiness of Junior Enlisted Women: A Sociological Approach to Studying the Health of Potentially Vulnerable Military Women" proposes a new model for studying junior enlisted women and health and provides a theoretical framework to explore research questions. Finally Chapter 4 "Stress, Role Strain, Health and Attrition of Junior Enlisted Air Force Women with and without Preschool Children" describes the dissertation study and results.
CHAPTER 2

PERSPECTIVES OF EARLY AGE AT FIRST MOTHERHOOD AND THE MILITARY: A CLASH OF CULTURES

The state of readiness of our military depends upon the availability of professionally trained individuals who are physically, psychologically, and emotionally ready to engage in required duty. Currently women comprise 15% of the United States military force and 20% of newly recruited enlisted personnel (Defense Manpower Data Center [DMDC], 2002). Thirty-eight thousand dollars are required to train each new recruit for service (Philopott, 2000). Although costly, each recruit is vital to military function, making premature attrition an undesirable outcome (Crawley, 2005).

Statistics show gender and racial differences in premature attrition. Women remain at greatest risk to prematurely leave the service. Thirty-eight percent of all women will not finish their first three-year tour, in contrast to 33% of men. Men leave most frequently due to misconduct, substandard performance, and drug use. Black women are less likely to leave than White women. Women leave most frequently due to pregnancy, medical problems, misconduct, performance shortfalls, or parenthood, in no particular order (Bacon, 1998;
Gilmore, 2001; McManimon, 2003; Philopott, 2000). The impact that motherhood may have on attrition is not known.

The ability to stay on active duty can be affected by personal and organizational factors. A personal factor may be the decision to start a family. Although delaying the pregnancy until after basic training and advanced individual training is necessary to avoid mandatory expulsion from the service, pregnancy that occurs after initial training is not prohibited by policy. However, pregnancy at the beginning of the first assignment may be detrimental to advancement because the pregnant service member is not fully available for competitive positions and not deployable during a critical period of career development.

What is not known in the context of military service or in the civilian workforce is when is the best time to start a family for enlisted women who expect to combine a military career and a family (Sherry, 2003). Knowledge about the expectations that female enlistees have regarding the military and motherhood would be useful in determining if a gap exists between expectations of the women and the organization. Identified gaps could lead to testing and evaluation of policies and interventions tailored to better meet the needs of the individual women and therefore, of the military organization.

The purpose of this paper is to examine the predictors of early age at first motherhood for Black and White military women and to contrast the possible differences in perception about initiating a family while still in the teen years
between the women and the military. Additionally, suggestions for addressing
gender-specific enlistment propensity that may account for gender-specific
attrition are presented.

History of Women in Military Service

World War II

Although women have been present on and behind the scenes since the
beginning of America’s history, World War II was a transforming time for women
in the United States and for women in service. During World War II, Congress
debated the appropriateness of women in service, a debate that included the
right of women to exercise their responsibilities as American citizens. This
resulted in 400,000 women serving, a number that exceeded male troop strength
in 1939. Congress and the American people saw the necessity for women to
serve, although initially resistant, eventually the reality was that every woman
who served meant that one less man had to be drafted and in fact, for the first
time a draft that included women was considered. General Eisenhower became
convinced of the necessary contributions of women and became an advocate for
the permanent assignment of women to the Armed Forces (Women in military

Once the men returned from the war, men replaced the positions that women
were serving in stateside. After World War II, due to societal pressures and the
general unattractiveness of the military to women, women began leaving the
military and stopped enlisting. Even though President Harry S. Truman signed
the Women’s Armed Services Integration Act of 1948 authorizing a permanent presence for women, women did not share equally in the benefits of military service. After world war II, the military offered more restrictive opportunities for women than during the war such as limiting positions and inferior training compared to men.

The Korean War

The Korean War brought new incentives for recruiting women but most women continued to stay away. During this time, the military waffled on pregnancy and marriage policies. Discharge for pregnancy continued to be automatic. Mothers with children under 18 were not permitted to serve.

Another inequity was the family members of women were not entitled to military benefits. A large campaign was launched to recruit the needed women for the Korean War. The goal was 5,000 women by mid-1952. Radio and television along with printed material were used to try to make the service more attractive to women. The Defense Advisory Committee of Women in the Service (DACOWITS) was formed in 1951 to assist in the recruiting effort. The DACOWITS committee advised a door-to-door campaign that brought uniformed women into towns to represent the “girl next door”. What the services did not do was open competitive positions to women even though DACOWITS advised that women were leaving the military due to a lack of career opportunities and challenges. The recruitment campaign was a failure. Women continued to stay away from the Service (*WIMSA inc: 1950, 2004; WIMSA inc: 1960, 2004*).
Probably due to less of a need for women to fill the ranks, the early 1960s brought even more disparities as women were segregated from training and not provided the same style of uniforms as men. A ceiling of not more than 2 percent of the service being women was strictly enforced and women officers were not permitted to be more than 10% of that 2%. Lieutenant Colonel/Commander was the highest permanent rank women could obtain (until the Women's Armed Services Integration Act was modified by P.L. 90-130 in 1967) (WIMSA inc: 1960, 2004).

Post Korean and Vietnam Wars

The draft ended in 1972 making the Armed Forces an all volunteer force. Since women had always been volunteers the only impact this had was to increase the need for women, as fewer men volunteered than were previously drafted. Promotion ceilings were repealed. More positions were opened to women. Weapons training became mandatory and uniform requirements became the same for women and men. Recognizing that women were not staying in the service and that without the draft the needed number of personnel could not be recruited, family policies began to change. In 1973, the Supreme Court upheld that family members were eligible for benefits and in 1975 the automatic dismissal for pregnancy was repealed although pregnant women could still leave voluntarily (WIMSA inc: 1970, 2004).

The 1980s brought more sweeping changes as training was gender integrated. Now 12 percent of the force was female. Women were now in
traditionally male jobs and deployed for combat operations in Grenada and Panama. In 1982 in a memorandum to the Service Secretaries, Caspar Weinberger said women were essential to filling the numbers of people needed to maintain the readiness of the force (WIMSA inc: 1980, 2004).

Operation Enduring Freedom and Iraqi Freedom

Today 91% of Army occupations are open to women, 99% of the Air Force positions, and in the Navy 91% of assignments are open to women. Submarines and SEAL teams are excluded, and only 62% of Marine Corps position are open to women (Manning, 2003). The debate over the role that women should play continues with a recent move by the Armed Forces Committee to add an amendment to the 2006 Department of Defense appropriations bill that would codify into law the previous commitment to bar women from any position that would put them in combat. The services countered that as the battlefield becomes more and more asymmetrical, the line of combat is blurred and the needs of the military demand that all service members be ready to engage in combat (Scott Tyson, 2005).

As the nation debaters what "they" want for women in service, it appears that from a historical perspective, women are inclined to serve voluntarily, but unwilling to remain past initial tours of duty when their career and family goals are in conflict with the organization.
Military Culture

Military women continue to be minorities within a hierarchical, traditionally male military culture (Hoiber & White, 1992; Nice & Hilton, 1994; Norwood & Ursano, 1997; United States Army Medical Readiness and Materiel Command [USAMRMC], 1995). A military sociologist described the traditional culture of the military in these terms: conservatism, moralism, combat, masculine warrior, exclusion, homogeneity, separatism and hostility (Dunivin, 1994). Masculine norms and values predominate in the military, thus women are viewed as "outsiders and deviants in a man's world" (p. 536). Social imperatives of the 1990's resulted in such changes as women assigned to combat units and gender-integrated basic training in the Air Force, Army and Navy (not in the Marines (Hillen, 1999). It has been said that a new model of military culture is evolving that provides for more inclusion, heterogeneity and egalitarianism; however, conservatism, moralism, combat, and masculine warrior characteristics remain (Dunivin, 1994).

As noted in the history section of this paper, although the military is not civilian society, it reflects the same social and political pressures that American society experiences. As women continue to be present in the workplace and increasingly combine full-time work that results in career employment with motherhood and other family responsibilities, it is expected that the tension of motherhood and work will continue for American society and the military.
Junior Enlisted Women

If women do not choose military service, it is clear that junior enlisted ranks will be impacted the most. Currently women comprise 15% of all of the Armed Forces, a trend that has steadily increased (refer to Figure 2.1). Figure 2.2 depicts that most women are enlisted and that these women make up 95% of all the women in the Armed Forces (Business women's network, 2003). About 45% of these women are junior enlisted, defined as women between the ranks of E-1 (Private, Seaman Recruit, and Basic Airman) to E-4 (Specialist, Petty Officer Third Class, and Senior Airman). This reflects the time of entry to service through basic training and advanced individual training to about the end of the first assignment or the beginning of the second. Figure 2.3 depicts the age at enlistment to be mostly 17-19 years old. This would make initial training and the beginning of the first assignment to be when women are 18-19 years old. Technically, civilian society would refer to these ages as adolescent or teenage years. Another aspect of this population is that new recruits are racially/ethnically diverse, while most are White (49%), Blacks (33%) and Hispanics (11%) are overrepresented compared to the general U. S. population, leaving 7.1% reported as "other" (DMDC, 2002).

Typical Course of Service

Typically, recruits attend six weeks of basic training specific to their service. After basic training, they attend a specialized school (advanced individual training, technician school) that prepares them for an occupation within the
military. These schools vary in length culminating in an assignment usually within the first year. These assignments can be at a variety of military installations either within the United States or abroad. Each Service differs in assignment lengths but typically, they are 2-4 years. Within that time, the enlistee is expected to progress in rank from an E-1 at least to an E-4. This progression in ranks signals an increase in training and experience that translates into areas of assignment that require more specialization and responsibility.

Motherhood and Military Service

Since young enlisted women are of reproductive age, policies that influence pregnancy continue to influence them.

Currently women cannot enter active duty if they are already pregnant and/or if they become pregnant during basic training or advanced individual training. There is no stipulation about already having children except that in the case of single (male or female) parenthood the enlistee must demonstrate that there is a legal plan in place for the children to be cared for when the service member deploys. However, some women report that initiating a family at the same time that they are beginning and getting used to military service is more than they can handle. Some officers report that they time their initial pregnancies to occur after the second assignment (Moskos, 1990).

No research is available that addresses the expectations enlisted recruits have about the timing of family initiation. What is available is a large amount of
research concerning pregnancies in the civilian teen years. With the mean age at first motherhood currently at an all time high of 25.1 years in 2002, pregnancies that occur prior to this are addressed as early age at first motherhood (Center for Disease Control [CDC], 2003). Examining the historical context of early age at first motherhood should prove useful in placing the current early age at first motherhood studies in context. Furthermore, exploring the predictors of early age at first motherhood may provide a framework for translating and extending this work to the junior enlisted military population who may be experiencing teen and young adult pregnancies.

History of Motherhood in the United States

After World War II, women were commonly pregnant in their teen years. By 1957, 10% of teen women were pregnant every year compared to less than 5% today (Ventura, Mathews, & Hamilton, 2001). Even though more women were pregnant in their teens than today, little to no discussion took place in the public sector concerning the impact of these teen births on the individual or society.

During the next decade, changes occurred to catapult the issue of teen pregnancy into the socio-political arena. While overall fertility rates began to decline, the rate of decline for older women was much more rapid. Children of the “baby boom” generation were entering their teen years, which artificially inflated the teen fertility rate. Finally, the most troubling change for society was that even through pre-martial fertility rates had not increased, the ensuing marital rates had decreased. The former effect was most pronounced for
Black women. At this point (1960s) teenage motherhood entered public debate as more teen mothers than ever were unmarried (Furstenberg, 2003).

**Early age at First Motherhood**

*Proposed Causes*

Stewart (2003) outlines several theories for the causes of early age at first motherhood. The first and perhaps the oldest is the welfare culture model of poverty transmission that holds that premarital fertility is encouraged by the incentive of increased welfare benefits. However, Furstenberg (2003) found in his longitudinal study that followed 400 women for 9 years that attitudes about fertility were not influenced by welfare policies.

A group of alternative theories holds that the “meaning” (someone to love them) that children have for young women who have limited opportunities may influence early age at first motherhood (Stewart, 2003). Finally, Geronimus (1997) contends that early age at first motherhood is a rational choice for urban Black women given that waiting for marriage seems unattainable (reported lack of suitable partners) coupled with the encouragement of elders to begin childbearing early before the effects of chronic disease both in terms of themselves and their relatives (Geronimus, 1997).

*Socio-demographic Predictors for Early Age at First Motherhood*

In 2001, among women between 15 and 19, 14.4% of Black women, 15.8% of Hispanic women, and 7.2% of White women had at least one child (Bachu &
O’Connell, 2001) demonstrating that there were more Black and Hispanic teen pregnancies than White. In the past few years teen pregnancy rates have been declining. This decline is reflected in the average age of first motherhood reaching an all time high in 2002 of 25.1 years for all Americans. However when viewed by race and ethnicity the mean for Whites is 26 years while the mean for Blacks is 22 years (Demko, 2002), so there remain racial differences in age at first motherhood with Blacks experiencing motherhood earlier. The research is unclear concerning the explanation of racial and ethnic differences in age at first motherhood. Some work supports the connection that the increased rate of Black teen pregnancies is a reflection of the limited opportunities of poverty (having a child will add to self-worth) while other work suggests that there are cultural influences driving the differences among Black and Hispanic pregnancy rates (earlier emergence of chronic disease and need to care for elders) (Bachu & O’Connell, 2001; Collins, 1990).

Studies have found several predictors for early pregnancies. Having a parent with at least a high school diploma and coming from an intact family greatly reduce teen pregnancies (Stewart, 2003). Educational and occupational aspirations act as protectants to deter early pregnancy while timing of marriage and childbearing are the single best predictors of educational status (Sharef, 2002).

Recognizing that poverty is associated with decreased age at first motherhood, Stewart (2003) used the National Longitudinal Survey of Youth
(NLSY) to test if gender ideology and educational/occupational aspirations mediated the connection between poverty and teen fertility patterns. The NLSY is a random multi-staged data set that has followed a cohort of youth who were 14-22 in 1979 to today. The NLSY over sampled Hispanic, Blacks, and Whites from low socioeconomic backgrounds. For Stewart’s study, women who had had at least one birth by 1989 were included for a sample of 951 women.

The variables of interest for the study were gender role ideology and educational/occupational aspirations. Additional variables that were regressed on the dependent variable of age at first motherhood included self-esteem, personal sense of control, region of origin, urban versus rural, number of siblings, parental education and occupation, academic achievement, and race/ethnicity. Descriptive statistics revealed that White and Black women differed on many of the study variables.

Although the database examines Whites and Blacks in low socio-economic situations, the Blacks in this study were more urban, came from more families with only one parent (mother), had less household education and less net family income, and more siblings. All of these differences were statistically significant at least the p= .05 level. So although race was a significant predictor for early age at first motherhood the mechanism could not be isolated. Data analysis included an estimation of a series of regression models that tested the variables in blocks and then together, controlling for race/ethnicity. The author found that gender role ideology (measured by how traditional the women were), aspirations
(measured by education that they hoped to complete), and self-concept (measured by the Rosenberg Self-Esteem Scale) were all significant predictors of age at first motherhood. Women who had a more traditional gender role ideology, lower educational aspirations, and lower self-concept had younger ages at first motherhood (Stewart, 2003).

Among the background variables, being raised in the South, being raised urban, and having more siblings decreased age at first motherhood. As parental education and occupation increased, age at first motherhood increased. Stewart (2003) hypothesized that the reason for this action was that parents with greater education and better occupations had more resources to invest in the human capital of their children. Similarly, higher academic achievement also predicted higher age at first motherhood (Stewart, 2003).

Although the NLSY provides a longitudinal database and access to large samples, it is limited by the amount and quality of information that has been systematically gathered on the respondents. In order to provide a more detailed description of the attitudes that teens have regarding early age at first motherhood, it is necessary to consider qualitative studies.

Qualitative Studies of Early Age at First Motherhood

In 17 robust interviews, Mims and Biordi (2003) used thematic analysis to analyze conversations with African American women who had daughters experiencing unwed teen pregnancies. The themes surrounded the lack of education and negotiation skills that the mothers of adolescent mothers
demonstrated. All of the teens reported little to no contact with their own father. The mothers with least education tended to lean toward absolutist approaches and negative solutions to keep their daughters from experiencing another teen pregnancy (Mims & Biordi, 2003). This would suggest another mechanism through which education of the parent of the teen may contributes to age at first motherhood.

Still other researchers examined the ambivalence about pregnancy prevention that African-American teens appeared to display (Crump et al., 1999). Using semi-structured focus groups, six 90-minute sessions of 37 non-parenting African-American women aged 14-17, were used for analysis. After an initial icebreaker, the girls were asked, “How does getting pregnant affect a girl’s life? The next question was, “After a girl gets pregnant, how is she treated by her friends”? The final two questions were, “When is the best time for a girl to get pregnant”? and “What methods of pregnancy prevention are the best for girls to use”?

In response to the best time to have a child, the teens mostly agreed that the best time was after the teen years. The teens also expressed that teen mothers were not prepared for the challenges of childrearing and that childrearing should be delayed after the teen years. Despite the sentiments that teens should not have children, the teens also noted that although not ideal, having a child during
the teen years was manageable and in some cases admirable as it keeps the mother's age closer to the babies and encourages the mother to improve herself (Crump et al., 1999).

Perhaps the most striking of the studies findings was that while 79% of the participants were sexually active most of the teens reported that highly effective forms of contraception like birth control pills and implants were not to be trusted. Other teens noted that the use of contraception was seen as a lack of trust by boyfriends (Crump et al., 1999). The authors did not clarify what the participants meant by "trust" even though the word was used in quotations referring to condoms and the "pill".

Although still few in number, these qualitative studies combined with the ongoing quantitative work can add valuable insight into the decision-making that young women undergo while still in their teen years.

Admittedly, using research that addresses non-military teenage pregnancy to understand the possible expectations that young Black and White women have regarding the initiation of motherhood early in a military career is limited. However, given that no other data exists, it does at least provide a starting point to begin to ask the right type of questions to potential recruits and new enlistees.

Propensity to Enlist in the Military

Despite the fact that the Armed Forces remains dedicated to recruiting women, research to predict the propensity for high school students to enlist is most
available for men. Research on women does not ask the right questions and shows very little variance accounted for and conflicting results in comparison to men.

*Monitoring the Future Database*

Sociologists have been using the Monitoring the Future (MTF) database to determine the propensity and actual enlistment of a representative sample of high school students. The MTF employs a cohort-sequential research design and contains information from 1979 until today. The military propensity study used survey data from 100,000 respondents in the senior classes of 1984-1991 coupled with follow-up data from 15,000 seniors a year after graduation. The data were analyzed separately for men and women due to previous research findings that there were gender differences in the propensity to enlist and the actual enlistment. The conceptual framework for the study included family background and demographics, values, educational attainment and enlistment plans of the individual as well as military service requirements. The researchers held that the decision to enlist is a two-part decision, both the individual and the military have an influence (Bachman, Segal, Freedman-Doan, & O'Mally, 2000).

*Gender and Military Propensity*

The researchers found that the propensity to enlist was highly correlated with enlistment for men, and less highly correlated for women. The most important gender difference was that far fewer women expected to serve and even fewer actually served. Another way to look at this data, is that there is a bigger gap
between expecting to serve and actually serving for women than there is for men. And still another way to interpret this data published in a previous article using the same data, is that more women expect to serve than actually do (Segal, Segal, Bachman, Freedman-Doan, & O'Mally, 1998). Coincidentally, predictors for military propensity are also predictors for early age at first motherhood. Low career aspirations, low educational attainment, African-American, and lower levels of parental education all increase the likelihood that women will chose the military (Bachman et al., 2000).

The number of parents in the household was not a significant predictor of enlistment for women nor was it a significant predictor for early age at first motherhood in the Stewart (2003) study (Bachman et al., 2000; Stewart, 2003).

In the MTF study, the correlations between the measured variables and propensity to enlist were overall stronger for men than women; one variable was actually stronger for women. Attitudes toward the military workplace were a better predictor for propensity to enlist for women than men. This variable measured how respondents rated the military on a variety of job experiences and opportunities for people who work in the military service. The items included questions about getting ahead, obtaining more education, advancing to a more responsible position, having a personally more fulfilling job, having ideas heard, and getting things changed and setting things right if treated unjustly by a superior (Bachman et al., 2000). Given that having a propensity to enlist and actually enlisting was a weaker correlation for women there may be some clues
in this variable that can explain why more women expect to serve than do. Is it
possible that although women who perceive the military as an attractive work
opportunity are more likely to display a propensity to enlist, something may
happen between propensity to enlist and actual enlistment to change their minds.
In addition, as early as the 1950s women began telling the military that they were
leaving because their jobs were not challenging enough and that there was not
enough advancement. It would seem that women demonstrated that they desire
a job that is personally and professionally fulfilling.

Motherhood and Military Propensity

Finally, while the propensity (MTF) study analyzed genders separately, it does
little to address the potential differences between men and women regarding
work aspirations and military propensity. In an effort to understand the gap
between propensity and actual enlistment, another study used the same
database to explore whether the presence of children had an impact on the
women’s decision not to serve. The technique was to follow women who
reported a high expectation to enlist 1-2 years after high school and determine
what they did instead of enlisting. The investigators found that the high
propensity women who did not enlist were more likely to have children; however,
the effect was not large. Of women who "definitely" expected to serve, 40%
joined who had no children and 33% joined who had children. For the women
who "probably" expected to serve, 8% without children joined and 5% with
children joined (Segal et al., 1998). This refutes a popular myth that women who have a expectation to enlist end up not enlisting and instead starting a family.

Limitations of database

Trying to determine the perceptions of potential female recruits and new enlistees regarding work and family becomes like a puzzle, applying early age at first motherhood research and marketing research that attempts to determine the likelihood of joining the service may leave out important personal and social context variables. A better approach would be to begin with focus groups of high school age women, to develop questions for quantitative studies of the same type of participants that are represented by the propensity study (MTF) with the addition of capturing GED entry enlistees that are currently not included in the MTF study.

Conclusion

It is clear from historical data and current recruitment trends that women are ready, willing, and able to serve at the enlisted level and that the having children is not a negative factor in deciding to enlist (according to the propensity study). The problem is that the same historical data show women continue to leave the service before or shortly after their first tour of enlisted duty. It is possible this could be due to a culture clash where the military expects women to delay pregnancy until after their first tour of duty or in an extreme interpretation, even not have children at all, while women would rather time their pregnancies considering their own situation above the military organizational ideal.
Women who are more likely to enlist are also women who are more likely to experience early age at first motherhood. These women typically come from families with lower material resources in the form of finances, education, and career aspiration. In so in some ways they represent a unique subculture in America. Although having children is not prohibited during military service, it is prohibited during initial training. It is also possible that initiating a family soon after the completion of initial training can lead to a decision by the women or the military to prematurely terminate military service

Measures should be taken to directly examine the perceptions enlisted women have regarding work and family before and upon entry to military service. Additionally, when appropriate, data already being gathered should be reported by gender and race/ethnicity. This information would be useful in determining if gaps exist between the individual and the organization as well as to tailor policies and interventions that address the identified gaps.

The military of today is in a unique position to capitalize on the desire of women to enlist and the support of the American society for women in service to create a military culture that leaves room for young women who wish to combine work and family.
Figure 2.1

Percentage of Women in Military Service by year (Defense Manpower Data Center, 2002)
Figure 2.2

Number of Enlisted Women and Women Officers (Defense Manpower Data Center, 2002)
Figure 2.3

Percentage of Women at Enlistment by Age (Defense Manpower Data Center, 2002)
CHAPTER 3

THE HEALTH READINESS OF JUNIOR ENLISTED WOMEN: A SOCIOLOGICAL APPROACH TO STUDYING THE HEALTH OF POTENTIALLY VULNERABLE MILITARY WOMEN

The state of readiness of the United States military depends upon the availability of professionally trained individuals who are physically, psychologically, and emotionally ready to engage in required duty. Currently women comprise 15% of the 1.4 million United States active military forces (210,000) and 20% of the 1.2 million reserve force (240,000) (United States Army Reserve Component [USARC], 2003; Women’s Research and Education Institute [WREI], 2002). Enlisted women comprise about 140,000 of the total 210,000 women in the active duty military (WREI, 2002). Each year, 20% of newly recruited enlisted personnel are women (McManimon, 2003). The number of women on active duty has steadily increased from 1.3% of the force in 1970 to the current level of 15% (Business women's network, 2003).

Greater than 91% of the positions in the Army, and 99% of the assignments in the Air Force are now open to women. Although women continue to be excluded from the infantry, many assignments and positions require deployment to hostile and austere environments (Manning, 2005). With so many opportunities for
women and such a need for highly qualified and capable service members, at
face value, the military appears to be a promising career opportunity for women.

Past medical research regarding this population has focused mostly on
individual health care needs. After the Gulf War, access to health care for female
veterans became a priority (Huynh-Hohnbaum, Damron-Rodriquez, Washington,
Villa, & Harada, 2003; McNeil & Hayes, 2003; Vogt, Stone, Salgado, King, &
King, 2001; Washington, Caffrey, Goldzweig, Simon, & Yano, 2003; Yano,
Washington, Goldzweig, Caffrey, & Turner, 2003). Other research addressed
the individual health behaviors of military women, mostly in health promotion
(Agazio, Ephraim, Flaherty, & Gurney, 2002). Still other work addressed the
unique needs of female soldiers regarding gynecological and obstetrical care
(Ryan-Wenger, 1992). More recently, research is being done to explore the
effects of sexual assault on women in the military (Sadler, Booth, Nielson, &
Doebbeling, 2000).

With few exceptions, past research was not based on a theoretical framework
and provided little basis for proposed causal links. In addition, findings were
typically framed from an individual behavioral perspective. The social context in
which military women function was rarely addressed. Finally, junior enlisted
women were often aggregated with all other military women, making it more
difficult to discover causal links for this sub-group.

The purpose of this paper is to propose a model of social determinants of
health that places the individual within a social context and recommend
additional research needed to address this largest population of military women. This review of literature is not meant to be a meta-analysis or an exhaustive review of literature, rather it is a selection of literature that supplies the linkages between the variables in the model in the context of military women. The criteria for selecting articles included using peer-reviewed publications from credible journals and reports from the Department of Defense available electronically or in print.

Findings from the ensuing research agenda will be useful at both individual and organizational levels to inform and promote individual choices as well as organizational values and policies.

Background and Significance

Women in the Military

Unique quality of life and health issues arise from women’s status as a minority in a hierarchical, traditionally male military culture (Hoiber & White, 1992; Nice & Hilton, 1994; Norwood & Ursano, 1997; USAMRMC, 1995). A military sociologist described the traditional culture of the military in these terms: conservatism, moralism, combat, masculine warrior, exclusion, homogeneity, separatism and hostility (Dunivin, 1994). Masculine norms and values predominate in the military, thus women are viewed as "outsiders and deviants in a man's world" (p. 536). Social imperatives of the 1990's resulted in such changes as women being assigned to combat units and gender-integrated basic training in the Army, Navy, Air Force (not in the Marines) (Hillen, 1999). A new
model of military culture is evolving that provides for more inclusion, heterogeneity and egalitarianism. However, conservatism, moralism, combat, and masculine warrior characteristics remain (Dunivin, 1994). The percentage of male and female officers and enlisted are depicted in Figure 3.1. What should become clear from Figure 3.1 is that women in general are a minority. Not shown in Figure 3.1 is that more women are enlisted than officers (95% vs. 5%) making the concentration of most women in the military within the enlisted ranks.

**Junior Enlisted Women in the Military**

Personnel positions decline as rank increases. In other words, the number of men and women steadily decreases as rank increases. Because women make up only 15% of the total force they are nearly absent from the most senior ranks (33 out of 889 general officers) (Business women's network, 2003).

Female enlisted recruits are most likely recent high school graduates, 92% are 17-24 years old (refer to Figure 3.2). Figure 3.3 shows the ethnic make-up of new female recruits (DMDC, 2002). Typically, recruits attend six weeks of basic training specific to their service. After basic training, they attend a specialized school that prepares them for an occupation within the military. These schools vary in length, culminating in a new duty station assignment usually within the first year. These assignments are at a variety of military installations either within the United States or abroad. Each service differs in assignment lengths but typically they are 2 to 4 years. Within that time the enlistee is expected to progress in rank from an E-1 (Private, Seaman Recruit and Basic Airmen), to at
least an E-4 (Specialist, Petty Officer Third Class, and Senior Airman). This progression in rank signals an increase in training and experience that translates into areas of assignment that require more specialization and responsibility.

Contrary to the American civilian culture that emphasizes liberty and individuality, the military culture emphasizes self-sacrifice and uniformity (Center for Strategic and International Studies [CSIS], 2000; Dunivin, 1994; Segal & Segal, 1983).

Junior enlisted women differ from their male peers in a number of aspects. Statistics show there are gender and racial differences in attrition (Bacon, 1998). Despite a slow decrease in the overall attrition rate, women are at greatest risk to leave the service before and immediately after their first tour of duty. In 2003, thirty-eight percent of all women did not finish their first three-year tour, in contrast to 33% of men. White women were likely to leave the military than Black women. Men left most frequently due to misconduct, substandard performance, and drug use. Women left prematurely due to, medical problems, misconduct, performance shortfalls, pregnancy or parenthood (Bacon, 1998; McManimon, 2003). Each early discharge represents a substantial economic loss to the military, as each recruit costs approximately $35,000 in training dollars (Gilmore, 2001). In the case of voluntary discharge, leaving represents a decision by the service member that continued military service is undesirable.

Social Determinants of Health Model

A growing body of literature addresses health disparities in minority populations. Early research in this area has revealed that by simply being a
member of a minority population, the risk of cardiovascular disease, diabetes mellitus, and obesity is increased, possibly through the mechanism of stress (Institute of Medicine [IOM], 2003). Gender-specific literature points to the inability to explain all of the differences in health care and health outcomes found in cardiovascular disease, neurological disease, and cancer, between men and women in terms of hormone and environmental exposure influences (IOM, 2001). Attitudes, beliefs, and behaviors at the provider level explain some of the racial and ethnic differences in health outcomes that cannot be explained by socioeconomic status and patient preferences (IOM, 2003). Additionally, years of individual behavior modification interventions for behaviors such as smoking and sexual activity have left us with marginal results.

A new approach is to consider the individual within the broader social context. Marmot and Wilkinson's Social Determinants of Health Model (1999), depicted in Figure 3.4, provides such a framework. The model proposes that social structure, early life, and material factors have an impact on well-being through the variables of work, social environment, health behavior, psychological changes, brain/physiological, and pathophysiological changes. The advantages of this model are that it enables military researchers to explore the questions unique to military women from an individual to population perspective, framing the inquiry within the military context of the individual and population.
Model Components

The model (Figure 3.4) demonstrates that early life (nurture), genes (nature) and culture (environment) are “upstream” constructs that influence all aspects of life, including the individual health and well-being. In the United States, the social structure is influenced by a democratic form of government as well as an intensely individualistic philosophy shared by most of its citizens (Bellah, Madsone, Sullivan, Swidler, & Tipton, 1996).

Junior enlisted military women exist within the broader American social structure as well as within the social environment created by the military organization and individual unit of assignment. The broader social structure influences material factors, characteristics of work, and the social environment that junior enlisted experience. For example, the decision to open more military occupational positions to women was made by the broader American society (social structure) but it quickly influenced the positions available for women that were needed for better advancement which in turn influenced the service members material factors and work environment. Opening traditionally male positions to women also influenced the unit climate of the units that typically did not have women assigned (social environment).

Psychological factors, health behaviors, and physiological responses influence pathophysiological changes that affect levels of well-being mortality and morbidity. An example of these influences might be alcohol use behavior,
escalated by stress, leading to unplanned sexual activity, resulting in sexually transmitted disease and unplanned pregnancy.

Enlisted Women and Health Issues

Defense Advisory Committee on Women in the Services (DACOWITS) focuses on health care issues for military women and female military family members. Formed in 1951 by George C. Marshall, the then Secretary of Defense, the advisory committee consists of civilian women and men appointed by the Secretary of Defense. The purpose of the Committee is to provide advice and recommendations to the Secretary of Defense on all issues regarding military women (DACOWITS, 2004). From the Health Care Survey of DoD beneficiaries (2002 HCSDB) and the 2002 Status of Forces Survey of Active Duty members (2002 SOF Survey), DACOWITS Committee members analyzed and reported on the current state of health care issues for women in a 2003 interim report. The findings represented 6 main categories: perceptions of health care, health promotion/disease prevention behaviors, obstetrical and gynecological care, pregnancy and prenatal care, stress, and women’s health during deployment (DACOWITS, 2003). A closer look at the report reveals that there are some differences for junior enlisted women. While most women are satisfied with their health care, the least satisfied are junior enlisted women. One area of dissatisfaction was customer service and provider communication when receiving care from a military treatment facility. Focus group participants from the above study, reported that they found providers failed to listen to their
concerns, were inconsiderate, left the patient feeling as though they were not an individual, and had “negative attitudes” (DACOWITS, 2003). This finding is consistent among minority populations in civilian health care facilities in studies done by the Institute of Medicine (IOM, 2003).

Another finding was that unplanned pregnancy and use of prenatal care were strongly related to military rank (DACOWITS, 2003). Similar to the civilian population, one half of all pregnancies are unplanned, with single women in the lowest socioeconomic status being at the greatest risk (Stewart, 2003). In the military context, this group of women is the junior enlisted. Focus groups conducted by DACOWITS revealed that one of the primary reasons that junior enlisted women delay prenatal care is the anticipation of a negative impact on work climate and stigmatization. There is some evidence reported by Evans and Rosen (1997) that well timed, planned pregnancies are positively associated with increased rank, better work climate experienced, and better work effort expended. The investigators also found that junior enlisted women are the least likely to experience planned, well-timed pregnancies (Evans & Rosen, 1997).

DACOWITS focus groups continue to find support for gender-specific health concerns during deployment. Women report that hygiene, dehydration, isolation, sexual harassment and substance abuse are issues for all military women while deployed (DACOWITS, 2003).

Norwood and Ursano (1995) identified the potential health effects that stressors of extreme military environments can have on women. The authors
proposed that there are biological and psychological differences between men and women in their responses to stress and that military climate is an important stress mediating variable in both men and women. Norwood and Ursano (1995) propose that research studies consider a military career through stages across the life span both in terms of biological/developmental and contextual/life events variables (Norwood & Ursano, 1997). This point is germane to junior enlisted women. To date a literature review revealed no longitudinal studies regarding junior enlisted women and health issues. All available research is cross-sectional. While probably most practical for a transient population like junior enlisted women, a cross-sectional design is inadequate for determining causal links among variables.

The effects of stress were also the focus of a study conducted by Bray et al (2001), in a predominately young, enlisted, white military population. Using the 1995 DoD survey of Health Related Behaviors among Military Personnel, the authors studied the relationship between job functioning and work and family stress for military women and men in the independent variables of work stress, family stress, symptoms of depression, substance abuse, and coping styles. Enlisted women comprised 2,355 or 83.6% of all of the women surveyed. Thirty-three percent of women surveyed reported a great deal or fairly large amount of stress related to being women in the military. Women reported slightly higher stress than men in family issues (29% for women, 22% for men). Lower job functioning was found to be related to increased depression, increased perceived
stress family and work, increased substance abuse, and negative coping styles. The only difference was that in women, increased family stress did not lead to decreased job functioning. The authors speculated that because women may be used to assuming multiple roles, they may be more able to keep family stress from affecting job functioning. What was not clear was the family structure of this sample. The incidence of single parenting was not reported. This study did not directly evaluate the negative effects that stress had on the individual.

Junior enlisted women may be more prone to be single parents. In a study done by Bowne, Orthner, and Zimmerman (1993), single-parent Army families reported that availability of family, community, and Army resources were stronger indicators of adaptation than work stressors (Bowen, Orthner, & Zimmerman, 1993). Female soldiers, sailors, marines and airmen are exposed to stressors in the military that affect them in different ways than their male peers (Norwood & Ursano, 1997). Thirty-one percent of females say they feel stressed due to being women in the military. This stress is highest among married women with no spouse present, younger enlisted women, and women of least education (Bray, Camplin, Fairbank, Dunteman, & Wheeless, 2001; Bray, Fairbank, & Marsden, 1999). This suggests that stress may be related to work and family roles, as well as from being women in the military. Stress can be manifested as stress related symptoms, work, and family role strain. By negatively influencing the health of the individual, the net effect of these stress related symptoms and role strain might be to decrease the overall readiness of the organization. Even though
about a third of the women decide to leave military service before the end of their first tour of duty, many military women choose to extend their first 4 year tour of active duty making the military a career choice. Typically, they are in their reproductive years, marry, have children, and continue to serve. The continued contributions of these women are both needed and desired as the force continues to grow to maintain readiness to defend the nation.

In a May 2003 briefing to DACOWITS, the Department of Defense Research of Health and Performance of Military Women presented results from numerous studies designed to study all military women. This work focused on the gender-unique issues related to integration into a male work environment. Examples of this type of research are including women in drug studies, including women in equipment/chemical protective gear studies, and addressing issues that have a higher prevalence among women (stress fractures, gynecological challenges in a field environment, low iron status, and reproductive and teratological material hazards). Initial findings from these studies have informed policy regarding women and deployments (Friedl, 2003).

Summary and Recommendations for Future Research

Most studies focus on individual disease and health behaviors targeting individuals at the pathophysiological and psychological levels of the social determinants of health model. The “upstream” components of the model (social structure, material factors, work, and social environment) are understudied. Most individual health behavioral and disease/illness research (maternal-child and
reproductive health, musculo-skeletal injuries, stress, and coping and preventive health behaviors) can be extended to include the social context represented by the upstream model components.

Figure 3.5 provides examples of research questions that could be considered using the social determinants of health model. More studies are needed to compare the current civilian minority health research findings with junior enlisted women. Although much work has been done to address the unique reproductive issues of these young women who are at the entry level of service, the work needs to advance to studying individuals longitudinally within a social context. Although it has been demonstrated that junior enlisted women are the least satisfied with the adequacy and acceptability of mental and physical health services available to women before, during, and after deployments, additional studies need to explore the mechanisms for this dissatisfaction. Research should also address the personal empowerment factors that equip women to deal directly with issues that affect their health as well as the policy changes that need to occur to protect the most vulnerable population within the military. Existing interventions need to be tested and new interventions developed to address the mechanisms involved in mediating or moderating health consequences.

Conclusion

Junior enlisted women continue to be a growing minority within the United States military occupying the least powerful and most vulnerable positions within
the organization. To date most research regarding the health of this population has been addressed from a cross-sectional individualistic perspective. This perspective is limited in that it does not provide the longitudinal data needed to make casual linkages between sociological variables and health. Future research should include the social context and developmental/life span aspects of this population. Findings from the proposed research questions will be useful at both the individual and organizational level to promote more informed, individual choices and organizational values and policies.
Figure 3.1

Percentage of Male and Female Officers and Enlisted in the United States Military (Defense Manpower Data Center, 2002)
Figure 3.2

Percentage of United States Military recruits for fiscal year 2000 by Age (Defense Manpower Data Center, 2000)
Female Recruits FY 2000

Figure 3.3
Percentage of United States Military recruits for fiscal year 2000 by Age (Defense Manpower Data Center, 2000)
Figure 3.4.

Adapted from the Military Social Determinants of Health Model adapted from Marmot and Wilkinson (1999)
Figure 3.5

Research Questions for Health Readiness of Junior Enlisted Military Women from a Social Determinants of Health Perspective

Social Structure
1. How does the incidence of preventable disease/illness differ between civilian women age 17-24, to junior enlisted women of the same demographics?
2. What are the racial and ethnic differences in preventable disease/illness in junior enlisted women?

Material Factors
3. Junior enlisted salaries are low and even after adjustment for family members' salaries may not be adequate. What is the influence of financial adequacy on health, well-being, and military readiness?
4. The military provides many no-fee health and family resources for its members. What are junior enlisted women’s perceptions of these resources, accessibility, barriers to access and usefulness?

Work
5. What are the racial/ethnic and gender differences in work and family stress and what affect does that have on junior enlisted women's attrition and health?
6. What characteristics of military work lead to positive and negative health consequences for junior enlisted women?

Social Environment.
7. To what extent do the characteristics of work climate affect junior enlisted women’s health?
8. What are the most effective interventions to empower junior enlisted women resulting in increased physical and mental health?

Health Behavior
9. What are the most effective interventions in reducing unplanned pregnancies and increasing pregnancy timing in junior enlisted women?
10. What mechanisms explain the differential satisfaction and health care utilization between female junior enlisted women and other military personnel?
CHAPTER 4

STRESS, ROLE STRAIN, ATTRITION, AND HEALTH IN JUNIOR ENLISTED WOMEN WITH AND WITHOUT PRESCHOOL CHILDREN

The state of mission readiness of the United States military depends upon the availability of professionally trained individuals who are physically, psychologically, and emotionally ready to engage in required duty. Thirty-eight thousand dollars are required to train each new Air Force recruit for service (Philopott, 2000) making attrition a concern for the Department of Defense (Crawley, 2005). Although costly, each recruit is vital to military function. Currently women comprise 15% of the United States military force and 20% of newly recruited enlisted personnel (WREI, 2002). Statistics show that there are gender and racial differences in attrition (Bacon, 1998). Thirty-eight percent of all women will not finish their first three-year tour, in contrast to 33% of men. White women are more likely to leave than Black women. Women leave most frequently due to pregnancy, medical problems, misconduct, performance
shortfalls, or parenthood in no particular order while men leave most frequently due to misconduct, substandard performance, and drug use (Bacon, 1998; McManimon, 2003)

Female soldiers, sailors, marines and airmen are exposed to stressors in the military that affect them in different ways than their male peers (Norwood & Ursano, 1997). Thirty-one percent of women say they feel stressed simply due to being women in a predominately-male military. This stress is highest among married women with no spouse present, younger enlisted women, and women of least education (Bray, Camplin, Fairbank, Dunteman, & Wheeless, 2001; Bray, Fairbank, & Marsden, 1999). Little is known about the stress related effects of motherhood in young enlisted women. The stress that military women report may be due to the combination of work and family roles, as well as from being a minority in the military. Despite the availability of military resources in the form of family support groups, friends, and neighbors in a common situation, and liberal leave policies for personal and family illness, these resources may be perceived as inadequate for young enlisted military women with children. A contributor to stress may be multiple role strain and negative consequences of stress may be stress related symptoms and poorer health with a net effect of decreasing the overall mission readiness of the military.

The purpose of this study was to describe a sample of junior enlisted Air Force women with and without preschool children in regards to socio-
demographic characteristics, perceived availability of military resources, multiple role strain, stress-related symptoms, health status, and career aspiration and to explore the interrelationships among these variables.

*Social Determinants of Health Model*

This study was guided by Marmot and Wilkinson's Social Determinants of Health Model (Figure 4.1). This model is informed by studies that have shown that a person's place within a society matters to their health outcomes and that psychological and biological factors play a role in health behavior and disease. This model considers the personal and the social factors that lead to health status.

The influences of social structure in the top left of Figure 1, work on well-being and health in the bottom right of the model. Three main pathways exist, material circumstances that relate directly to health, and social and work environment that move through psychological factors and health-related behaviors. Early life experiences, cultural, and genetic factors act overall in the model. In other words the left-hand side of the model considers social causes in the form of the social and cultural environment and the organization of work as upstream factors. The right of the model considers the downstream psychological and biological factors and are the intermediates between social level and health (Brunner & Marmot, 2003).
Military Culture

In order to understand the broader social context within which military women must function it is necessary to explain the military environment. Military women are a minority in the hierarchical, traditionally male military culture, thus giving rise to unique quality of life and health issues (Hoiber & White, 1992; Nice & Hilton, 1994b; Norwood & Ursano, 1997; USAMRMC, 1995). A military sociologist described the traditional culture of the military in these terms: conservatism, moralism, combat, masculine warrior, exclusion, homogeneity, separatism and hostility (Dunivin, 1994). Masculine norms and values predominate in the military, thus women are viewed as "outsiders and deviants in a man's world" (p. 536). Social imperatives of the 1990's resulted in women being assigned to combat units, and gender-integrated basic training in the Air Force, Army and Navy (not in the Marines) (Hillen, 1999). It is said that a new model of military culture is evolving that provides for more inclusion, heterogeneity and egalitarianism. However, conservatism, moralism, combat, and masculine warrior characteristics remain (Dunivin, 1994) as evidenced by the recent attempt by the Armed Forces committee on May 18th, 2005 to exclude women from combat support positions below the brigade level (Scott Tyson, 2005).

The military provides a work environment with less personal control than the civilian sector. The threat of frequent deployments and working until the mission
is completed accounts for countless demands on a service member's time. Nice (1994) noted that military women in jobs that are typically male had a worse impact on women's health (Nice & Hilton, 1994).

Socio-demographic Characteristics of Military Women

*Education and Training*

Female enlisted recruits are most likely recent high school graduates, 92% are 17-24 years old. For fiscal year 2000, eighty-three thousand new recruits were women 53% were under the age of 19 and of the total population, 9.5% were married. Forty-nine percent were White, 33% Black, 11% Hispanic and 7.1% other (DoD, 2000). Typically, these recruits attend six weeks of basic training specific to their Service. After basic training, they attend a specialized school that prepares them for an occupation within the military. These schools vary in length culminating in an assignment usually within the first year. These assignments can be at a variety of military installations either within the United States or abroad. Each service differs in assignment lengths but typically, they are 2-4 years. Within that time the enlistee is expected to progress in rank from an E-1 (Private, Seaman Recruit, and Basic Airmen) to at least an E-4 (Specialist, Petty Officer Third Class, and Senior Airman). This progression in ranks signals an increase in training and experience that translates into areas of assignment that require more specialization and responsibility. Due to the
military structure and the current demographics of service recruits it is clear that these women are in the ages where decisions about starting and maintaining a family are taking place.

Personnel positions decline as rank increases. In other words, as careers progress, fewer positions for advancement are available. Although women make up only 15% of the total force, they are disproportionately under represented in the most senior ranks (e.g. 33 out of 889 general officers are women) (Business women's network, 2003). This means that most women are in the junior ranks of officer and enlisted, and leave the military at these lower ranks.

Age at First Motherhood

The national average for age at first motherhood as of 2002 is 25.1 years. Since junior enlisted women are usually between the ages of 17-24 those women who have children fall below the national average (CDC, 2003; Demko, 2002). Therefore it is important to look at the civilian literature regarding early age at first motherhood. Of women between 15 and 19, 14.4% of black women, 15.8% of Hispanic women, and 7.2% of white women have at least one child (Bachu & O'Connell, 2001). Several deterrents have been found for early pregnancies. Having a parent with at least a high school diploma and coming from an intact family greatly reduces teen pregnancies (Stewart, 2003). Educational and occupational aspirations can act to delay motherhood while educational level also predicts income, socioeconomic position, and occupation, and timing of
marriage and childbearing are the single best predictors of educational status (Sharef, 2002). Stewart (2003) found that young women who had parents with greater socioeconomic status, possibly interpreted as greater resources, had higher ages at first motherhood (Stewart, 2003).

The research is unclear concerning reasons for the racial and ethnic differences in early motherhood for Blacks and Hispanics compared to Whites and Asians. Some work supports that the increased rate of Black and Hispanic teen pregnancies is a reflection of poverty while other work suggests that there are cultural influences driving the differences such as timing births to occur before illness and the burden of taking care of elders begins (Bachu & O'Connell, 2001; Collins, 1990).

Multiple Role Strain and Health

The military and motherhood have been described as “greedy institutions” (Segal, Segal, Bachman, Freedman-Doan, & O'Mally, 1998). Both place high demands and personal sacrifice on the military women. Poth (1996) noted that because women are traditionally the primary caretakers of the family, including children and ill family members; they may experience disproportionately higher role strain than men while pursuing their military career. Poth (1996) also speculated that the young, junior, and minority military members might be even more vulnerable to role strain.
In a classic editorial, Newman (1979) noted that traditionally women are socialized to expect to find fulfillment in the roles of wife, mother, and homemakers, but changes in economics and family structure have led more women to seek and maintain employment outside of the home. Conflict arises when women need to balance the demands of professional and personal fulfillment with the demand of the family, especially when these demands are in opposition of one another (Newman, 1979). The fact is that most civilian women at some time work either full or part-time in paid employment outside of the home (95%) including 2/3 of women with children under 18 years of age (Wyn, Ojeda, Ranji, & Salganicoff, 2003). Often military and civilian women interrupt their careers to stay at home with the children at least until they attend elementary school.

Military women have many of the same work and family challenges that their civilian counterparts report, such as caring for elderly family members. Kralovansky Wahl and Randall (1996) noted that women are traditionally more responsible for the day-to-day running of the household in addition to their career work. This remains true for military women (Kralovansky Wahl & Randall, 1996). Moskos (1990) discovered through qualitative interviews that officers had discovered a way to time their pregnancies so that their career progression would not be interrupted (Moskos, 1990)
Generally, multiple social roles have been found to be healthy for women. Combining the role of wife, mother, and some outside interest whether it be paid employment or active volunteerism benefits women over their life span. Problems arise when there is conflict between the roles or simply too many roles at one time. When this occurs women experience stress that can result in stress related symptoms (Williams & Kurina, 2002). Education level and occupational status play an important role in mediating stress in working women with small children. Clearly the presence of children greatly increases the workload of women as they continue to be responsible for 75% of the childcare even when a spouse is present and preschool age children (infant to 5 years old) require the most custodial attention (Williams & Kurina, 2002).

Workers who face ongoing job pressure and stresses that compete with family responsibilities experience role overload. Military women in dual-career families report greater role overload than men. Job stress has been related to depression and marital strain in women (Kelley et al., 2001). Although women and men may expect to combine careers and families, the combination may create acute conflict for women who are seeking professional careers that conflict with their personal lives especially during the preschool age years (Looker & Magee, 2002).
Stress-Related Symptoms and Health

In regards to stress, in some areas, military women experience more consequences of stress than their civilian counterparts. Military women are more likely to smoke, smoke while pregnant, get less sleep and not eat as regularly as civilian women as a response to stress according to the 1995 Department of Defense Survey of Health Related Behaviors Among Military Personnel that used a representative sample of 16,153 respondents with a response rate of 79% and over sampling for officers and women (Agazio, Ephraim, Flaherty, & Gurney, 2002; Bray et al., 1999). Kelley et al. (2001) noted burgeoning evidence that women in the military report more psychological symptomatology than do military men and that these symptoms may be directly proportional to motherhood. In a sample of 141 active-duty women with children, investigators found that resource availability and commitment were the key factors in balancing work and home demands. Their sources of stress were job-related, family/child related, or related to marital conflict, moves, new job position, and health of themselves or a family member (Agazio et al., 2002).

Working mothers who have young children experience considerable demands balancing the roles of work and family. The demands of family and work can cause multiple role strain and stress resulting in stress-related symptoms that can have an impact on health and mission readiness. Social determinants of health such as perceived availability of resources, marital status, and type of
work may also be at work. Military women experience many of the same stressors as civilian working women with the added stress of the military environments. Understanding the influences of these variables on junior enlisted women will help inform the individual women and the organization.

In summary, young enlisted women with preschool-age children experience considerable demands balancing the roles of work and family in a pre-dominantly male military culture. This study will examine the extent to which young enlisted women with and without preschool age children experience role strain and stress-related symptoms that could have a negative impact on the woman's health and mission readiness of the military. Social determinants of health such as perceived availability of military resources, family of origin socioeconomic status, racial/ethnic status, marital status, type of work and military career aspiration will also be examined in the context of role strain and stress related symptoms.

Methodology

Design

A cross-sectional descriptive design was used to answer the following research questions:

1) Are there differences between young enlisted women with and without preschool children on the following variables: marital status, family of origin...
socioeconomic level, minority status, type of work, perceived availability of military resources, multiple role strain, stress-related symptoms, health status, and career aspiration.

2) Among these variables, what are the best predictors of:
   a) multiple role strain
   b) stress-related symptoms
   c) physical health status
   d) mental health status
   e) career aspiration

Setting and Sample

Data were collected over an 4 month period in 2004-2005. A power analysis for t-test indicated that a sample size of at least 100 was needed to detect a moderate effect size with a power of .80 and an alpha of .05. The convenience sample included two groups of junior enlisted Air Force women between the ages of 17-24. By self-report, one group did not have preschool children (n=50) while the other had at least one child under the age of five living with them (n=50). All the women were enlisted and on active duty at a large, mid-west Air Force Base. Human subject approvals were obtained from a university review board, military base review board, and Department of Defense review board. Written informed consent was obtained after the study was explained to the participants. Data were collected on site by the principal investigator using electronic versions of
the instruments loaded onto a Palm Pilot. Participants were recruited using signs, e-mail announcements, and word of mouth. Participants completed the electronic survey at the Base Exchange, the Medical Center, the Fitness Center, and selected operational buildings located on Base.

**Measurement and Instruments**

A socio-demographic questionnaire was used to obtain data for usual demographic information (e.g. participants’ education level, birth date, and current rank) and the following study variables:

Maternal status was coded 0 for no preschool children and 1 for at least one child living with them under the age of 5.

Marital status was coded as 0 for not currently married or cohabitating, and 1 for currently legally married.

Family of origin socioeconomic status was measured as the highest education level (in years) attained by the person they lived with the most while growing up. For example if they lived with their grandmother and she completed high school and one year of college and their grandfather who also lived with them completed the 8th grade, the women would record 13 years.

Race/Ethnicity of the participant was measured by self-report using the NIH categories. The women noted if they were Hispanic/Latino. They also noted if they were Black or African American, White, American Indian/Alaska Native,
Asian, Native Hawaiian or Other Pacific Islander. The data were later collapsed into two minority status categories for data analysis: nonwhite (0) and white (1).

Type of work in the military: The women reported their Air Force specific occupational codes. For data analysis these were coded as 1 = historically non-female occupation; 0 = historically female occupation. Examples of historically non-female male occupations included truck driver and communications specialist, examples of historically female occupations included healthcare and administrative positions. This distinction was made in a study of military health care utilization (Nice & Hilton, 1994).

Since a suitable instrument did not exist for perceived availability of military support, a one item global assessment was used. The women were asked, "On a scale of 0-10, (0 being not available and 10 being the most available) how would you rate the support that is available from the military to meet your needs outside of your professional duties?"

Multiple Role strain was measured by The Daily Hassles Scale (DHS) which consisted of 117 items that measured the severity and frequency of self-appraised stressful interactions with the environment. Each item was measured on a scale of 0-3 (none or did not occur, somewhat severe, moderately severe, or extremely severe). The tool was scored by summing the items for frequency (number of hassles) and calculating severity (summation of scores of hassles divided by number of hassles). The tool took 5-10 minutes to complete and was
written at an eighth grade reading level. The Cronbach’s alpha for this study was 0.96. The DHS consisted of the following sub-scales: future security, time pressures, work, household responsibilities, health, inner concerns, financial responsibilities, and neighborhood/environmental but only total scores were used in analysis. The items were based on the Lazarus and Folkman Stress model and therefore have face and content validity. Factor analysis revealed 8 sub-scales that are consistent with the theoretical basis of the instrument. Discriminate validity was demonstrated by a low correlation ($r = 0.36$) with a major life events scale. Correlation of DHS scores with psychological symptoms demonstrated convergent validity ($r = 0.34-0.60$). (Lazarus & Folkman, 1989). Both the total frequency and severity scores were used for analysis. Higher scores indicate more frequency and intensity of daily hassles.

Stress-related symptoms were measured using the Basic Symptom Inventory-18 (BSI-18). This scale measured how much participants were bothered by distress-related symptoms within the past 7 days (e.g., “Nervousness or shakiness inside” and “Feeling worthless”). Responses ranged from 0 (not at all) to 4 (extremely). Higher scores indicate more distress. Global subscale scores were obtained that measured somatization, depression, and anxiety. The instrument was written at an 8-9th grade level and took 5-10 minutes to complete. Convergent validity has been demonstrated by correlations between the BSI-18 and subscales on the Minnesota Multi-Phasic Personnel Inventory (MMPI).
ranging from \( r = 0.41 - 0.75 \). Internal consistency coefficients of the sub-scales range from 0.77 to 0.90. Test retest (1-week apart) is 0.78-0.90. (Mitchell, 1985). The Cronbach’s alpha was 0.89 for this study. Due to a non-normal distribution the BSI-18 was transformed for data analysis by using the LOG 10 method.

Health status was measured with the SF-8 health survey. The SF-8 is an abbreviated form of the Medical Outcomes Study (MOS) SF-36. The SF-8 is an 8 item instrument that uses self-report to measure eight common domains of health: physical functioning, role limitations due to physical health problems, bodily pain, general health, vitality, social functioning, role alterations due to emotional problems, and mental health on a scale of 1-5 for items 2-8 and 1-6 for item 1. The instrument took 1-3 minutes to complete. Scoring was done by summing the item scores, then standardizing them to yield a mean of 50 and a standard deviation of 10. Two scores sub-scales were generated, the mental component summary score (MCS) and the physical component summary score (PCS). The 95% confidence interval for clinical significant was +/- 6.3 for mental score and +/- 5.7 for physical score. In the past the SF-8 demonstrated convergent validity with the SF-36 scale (\( r = 0.70-0.88 \)). The Cronbach’s alpha for this study was 0.85.

Career Aspiration was measured by the woman's response to the question "On a scale of 0-10 with 10 being the highest what is the likelihood that you will remain in the Service beyond your current service obligation?". Since no
instrument was available this question was created for this study. It is a single-item indicator, thus no internal consistency can be calculated.

Results

Data were analyzed using the Statistical Package for the Social Sciences (SPSS version 13.0). Independent sample t-tests were performed to examine differences between the groups on multiple role strain, stress-related symptoms, health status, career aspiration and socioeconomic status of family of origin, (interval level data). Chi-square tests were used to compare the women with and without preschool children on minority status, type of work, and marital status (nominal level data). Multiple regression was used to look for predictors of role strain, stress-related symptoms, physical and mental health, and career aspiration.

Characteristics of the Sample

Table 4.1 summarizes the demographic characteristics of the sample. The women with preschool children were significantly older, higher ranking and more likely to be married than women without preschool children (Table 4.1). Other demographic characteristics were not significantly different. Women with and without children reported getting most of their emotional support from friends, spouses, and relatives. Few women reported getting their support from co-workers. Women with children reported up to 5 people including themselves that
were financially dependent on them. While 94% (n=44) of women without children reported having had no other dependents besides themselves. The education and age at first birth of women with preschool children is shown in Table 4.2. The majority were high school graduates and age 21 at first motherhood.

*Differences between women with and without preschool children*

As shown in Table 4.3, there were no statistically significant differences between women with and without preschool children in, family of origin socioeconomic level, minority status, type of work, perceived availability of military resources, multiple role strain, stress-related symptoms, health status, and career aspiration. Having preschool children was not associated with lower career aspirations, higher stress related symptoms, or lower health perceptions.

*Predictors of Multiple Role Strain*

The standard method of multiple regression analysis was performed for both frequency and severity of multiple role strain as the dependent variable with marital status, maternal status, type of work, perceived availability of resources and career aspiration as independent variables. None of the variables significantly contributed to the frequency of multiple role strain (Table 4.4). But when the variables were regressed on severity of multiple role strain perceived availability of resources contributed 10.4% to the variance in multiple role strain (Table 4.5).
Predictors of Stress Related Symptoms

The stepwise method for multiple regression was used for stress-related symptoms as the dependent variable with marital status, maternal status, type of work, perceived availability of resources, career aspiration and frequency or severity of multiple role strain as independent variables. Forty-three point seven percent of the variance in stress related symptoms was accounted for by frequency of role strain (39.9%), and career aspiration (3.8%) (Table 4.6). No other variables were significant. On the other hand, only, 17.3% of the variance in stress related symptoms was accounted for by severity of role strain (Table 4.7).

Predictors of physical health status

Stepwise method multiple regression analysis was performed for physical health as the dependent variable with marital status, maternal status, type of work, perceived availability of resources, career aspiration and frequency or severity of multiple role strain as independent variables, stress related symptoms, SES of family of origin, and minority status. Seventeen point one percent of the variance in physical health was accounted for by frequency of role strain alone (Table 4.8), while only 15.1% of the variance in physical health status was accounted for by severity of role strain (3.8%), and stress-related symptoms (11.3%) (Table 4.9).
Predictors of mental health status

Stepwise method multiple regression analysis was performed for mental health as the dependent variable with marital status, maternal status, type of work, perceived availability of resources, career aspiration and frequency or severity of multiple role strain as independent variables, stress related symptoms, SES of family of origin, physical health, and minority status. Thirty-nine point eight percent of the variance in mental health was accounted for by stress related symptoms (27.9%), career aspiration (4.1%), and frequency of multiple role strain (3.8%) alone (Table 4.10) while 37.9% of the variance in mental health status was accounted for by stress related symptoms (27.9%), career aspiration (4.1%), minority status (3.1%), and severity of multiple role strain (2.8%) (Table 4.11).

Predictors of career aspiration

Stepwise method multiple regression analysis was performed for career aspiration as the dependent variable with marital status, maternal status, type of work, perceived availability of resources, career aspiration and frequency or severity of multiple role strain as independent variables, stress related symptoms, SES of family of origin, physical health and mental health status, and minority status. Twenty-nine point two percent of the variance in career aspiration was accounted for by perceived availability of resources (16.8%), socioeconomic status of family of origin (4.5%), mental health status (3.3%),
frequency of multiple role strain (4.7%) alone (Table 4.12), while 24.6% of the variance in career aspiration was accounted for by perceived availability of resources (16.8%), socioeconomic status of family of origin (4.5%), and mental health status (3.3%) using severity of multiple role strain in the model (Table 4.13).

Discussion

The average age at enlistment for the sample in this study is comparable to the total Air Force and the Army norms. The Navy and Marines enlist more women at 16-17 years old than the other two services (DoD, 2000). The rank of this sample reflects the average progression in Air Force service comparable to the other services. There were more White enlisted women in this study (65%) than the Air Force overall (58.5) and certainly more than the Army enlisted women (37.9%) (WREI, 2002). However the sample for this study was 15% Hispanic compared to the Air Force average of 6.7% for enlisted and the Army average of 12.2% for enlisted women. This overrepresentation of Hispanics is desirable in that most studies do not provide adequate ethnic representation. Forty-one percent of this sample was married as compared to 55.8% for Air Force enlisted men and women and 41% for Army women. This sample was more educated at enlistment than Army women, less than Marine and Navy women, but representative of the Air Force. This sample was not socio-demographically representative of the total military force nor was it representative
of the range of occupations that include historically male work, so generalizability is limited. There continues to be service differences in demographic characteristics. The Air Force is more White, more married, and more educated with fewer single parents when compared to the other services (DMDC, 2003).

This study shows that in this sample, young enlisted women with preschool children were not much different from women without preschool children on most demographic variables nor on any of the role strain, stress symptoms or health variables that were measured. In fact, young enlisted women were about 1 year older than their childless counterparts, higher ranking, and more likely to be married. Certainly, they were not the typical high risk young mothers found in the civilian world. Stewart (2003) found that in a random, multi-stage sample that followed a cohort of individuals between the ages of 14-22, young women whose parents had higher education and they themselves held higher career aspirations (such as joining the military) were more likely to delay motherhood. However 64% of the women in this study were 19-23 years old at first birth so it could be argued that although below the national average of 25.1, these women do not represent the extreme lower at first motherhood or "teen pregnancies".

Contrary to theoretical expectations, the groups did not differ on their report of perceived availability of military resources and neither group reported significantly higher multiple role strain or stress related symptoms. Bowen, Ortherner, and Zimmerman (1993) found that for single Army parents, the
greatest predictors of family adaptation were the availability of family, community, and Army resources. While the single item instrument developed for this study may not have been sensitive enough to detect differences in the two groups it suggests that globally, they all perceive that resources are available. Future research might separate adequacy of military resources, personal resources, and family and community resources with multiple item instruments.

To date there has not been a study in this population using the SF-8 to measure health status. Findings from this study did not show any differences between the two groups in regards to health status despite the fact that both groups expressed stress and role strain. One explanation may be that in this young and healthy population, the health consequences of stress in the form of role strain and stress-related symptoms may not yet be detectable.

Although the current study did not directly examine pregnancy planning and timing, there does not seem to be evidence to support that in this sample pregnancy early in a military career differentially impacts junior enlisted women on the variables of stress, role strain, health, and attrition.

Another factor that was not considered in this study and should be included in further research was the immediate organizational climate as a factor in role strain and stress related symptoms. Evans and Rosen (1997) examined 345 pregnant active duty military women from all the services and found that rank predicted both pregnancy planning and career timing. When pregnancy planning
was present, it was positively associated with workplace support and better psychological well-being. In addition, junior officers and enlisted reported less workplace support when their pregnancies were self-reported to not be planned. It appears that work climate could have an impact on the support that mothers receive.

Multiple role strain (measured as frequency and severity of daily hassles) was an important variable, particularly with respect to stress related symptoms so there does seem to be a relationship between the piling up of daily hassles and the stress experienced in these women. Importantly, this remained true for those women with and without preschool children. It appears to be less related to how bad hassles are than how frequent they are since only 17.3% of stress related symptoms was explained by the severity of multiple role strain. Despite role strain for both groups of women, resilience was evident from all measures of stress related symptoms and health remaining within community norms.

Stress related symptoms did not predict physical health status when the frequency of daily hassles were considered but it did contribute to physical health (11.3%) when the severity of daily hassles were considered. This suggests that in regards to physical health perhaps the severity of hassles does matter. Contrast that to mental health status where the greatest contributor to explaining mental health status variance is stress related symptoms scores (29.7% for both multiple role strain frequency or severity as independent variables). Here stress
related symptoms makes the most contribution suggesting that the BSI-18 may be tapping into more psychosocial constructs.

When using frequency of multiple role strain as one of the independent variables, 29.2% of the variance in increased career aspiration can be explained by increased perceived availability of military resources, increased frequency of multiple role strain, decreased socioeconomic status of family of origin, and increased mental health status. It would seem that perceived availability of military resources is the most important contributor but certainly not the only contributor. Contrary to theoretical explanation, in this sample coming from a family with less educational attainment actually increased career aspiration. Perhaps this is because "enlisted" ranks are historically less formally educated.

Future research should include measurements of coping, measures of unit climate, deployment situation and interpersonal resources. As there are socio-demographic and operational differences between the services it is important to study women in the other services. As this research in concert with other research regarding junior enlisted women's health begins to be operationalized care should be taken to consider the age-specific needs of this population.

Junior enlisted women are necessary and valuable members of the Armed Forces. These women experience unique stressors due to their position within the military and their position within their life course. Results of this study begin to describe the role that work and family demands early in a military career have
on junior enlisted women with and without young children. Future studies should focus on the predictors of multiple role strain and stress related symptoms. More studies need to be done to determine the best ways to support all women, those with and without children and future research results need to be disseminated to junior enlisted women so that they can make informed choices about starting and maintaining a family and planning their life course.
Figure 4.1.

Adapted from the Social Determinants of Health Model (1999)
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<th>With</th>
<th>Without</th>
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<th>Statistic</th>
<th>Df</th>
<th>Sig</th>
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</tr>
<tr>
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<td>X (SD)</td>
<td>Total (SD)</td>
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<td>22.5 (1.3)</td>
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<td>21 (2.9)</td>
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<tr>
<td>Age of</td>
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<td>Education At</td>
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<td>Freq (%)</td>
<td>Freq (%)</td>
<td>X² =28.5</td>
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<td>.000*</td>
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<td>15 (30%)</td>
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<tr>
<td>Cohab*</td>
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<tr>
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<td>47 (46%)</td>
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<td>44 (88%)</td>
<td>41 (83%)</td>
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<tr>
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<td>17 (34%)</td>
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<td>1 (2%)</td>
<td>2 (2%)</td>
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<tr>
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<td>4 (8%)</td>
<td>8 (8%)</td>
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</tr>
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</table>

* Significance at p < .05

Table 4.1

Selected Characteristics of Women with and without Children
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<th>Education at First Birth</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
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<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>High School Graduate</td>
<td>37</td>
<td>74%</td>
</tr>
<tr>
<td>1 year College</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>2 years College</td>
<td>6</td>
<td>12%</td>
</tr>
<tr>
<td>3 years College</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>4 years College</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age at First Birth</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>17</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td>19</td>
<td>10</td>
<td>20%</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>21</td>
<td>14</td>
<td>28%</td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>8%</td>
</tr>
<tr>
<td>23</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4.2
Women with Preschool Children

<table>
<thead>
<tr>
<th>With Pres-School Aged</th>
<th>Without Pres-school aged</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>74</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Children (n=50) X(SD)</td>
<td>Children (n=50) X(SD)</td>
<td>t-value</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------</td>
<td>-----------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Perceived Availability of Military Resources</strong></td>
<td>6.54(2.4)</td>
<td>5.88(2.4)</td>
<td>-1.393</td>
</tr>
<tr>
<td><strong>Multiple Role Strain Frequency</strong></td>
<td>40.9(20.3)</td>
<td>37.3(17.9)</td>
<td>-.995</td>
</tr>
<tr>
<td><strong>Multiple Role Strain Severity</strong></td>
<td>1.43(.34)</td>
<td>1.36(.23)</td>
<td>-1.094</td>
</tr>
<tr>
<td><strong>Stress Related Symptoms</strong></td>
<td>10.8(10.6)</td>
<td>8.7(7.3)</td>
<td>-.812</td>
</tr>
<tr>
<td><strong>Health Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td>50.3 (8.1)</td>
<td>52.1(6.5)</td>
<td>1.211</td>
</tr>
<tr>
<td>Mental</td>
<td>46.3(10.8)</td>
<td>47.4(9.3)</td>
<td>.546</td>
</tr>
<tr>
<td><strong>Career Aspiration</strong></td>
<td>5.76(3.7)</td>
<td>6.6 (3.6)</td>
<td>-.217</td>
</tr>
</tbody>
</table>

Table 4.3
Interval Level Variables for Junior Enlisted Air Force Women with and without Pre-School Aged Children
<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted R$^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>40.122</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td>3.138</td>
<td>.469</td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td></td>
<td>3.090</td>
<td>.472</td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td></td>
<td>1.074</td>
<td>.845</td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td></td>
<td>-1.438</td>
<td>.115</td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td></td>
<td>.733</td>
<td>.205</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.048</td>
<td>-.003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4

Predictors for *Frequency* of Multiple Role Strain

<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted R$^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td>.16</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td>.009</td>
<td>.604</td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td></td>
<td>.019</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td></td>
<td>.020</td>
<td>.395</td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td></td>
<td>.104</td>
<td>-.008</td>
<td>.029*</td>
</tr>
<tr>
<td>Career Aspiration</td>
<td></td>
<td>-.001</td>
<td>.59</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.104</td>
<td>.056</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at p < .05

Table 4.5

Predictors for *Severity* of Multiple Role Strain
<table>
<thead>
<tr>
<th>Variable</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.394</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.009</td>
<td></td>
<td>.907</td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.015</td>
<td></td>
<td>.852</td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.026</td>
<td></td>
<td>.742</td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>-.094</td>
<td></td>
<td>.278</td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>.038</td>
<td>-.021</td>
<td>.014*</td>
<td></td>
</tr>
<tr>
<td>* Frequency of Multiple Role Strain</td>
<td>.399</td>
<td>.014</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.437</td>
<td>.425</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at p < .05

Table 4.6

Predictors of Stress related Symptoms with frequency of Multiple Role Strain as one of the Independent Variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.538</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>.028</td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>.011</td>
<td>.907</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.039</td>
<td>.684</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>-.107</td>
<td>.272</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>-.075</td>
<td>.430</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of Multiple Role Strain</td>
<td>.173</td>
<td>2.043</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.173</td>
<td>.164</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at p < .05

Table 4.7

Predictors of Stress related Symptoms with severity of Multiple Role Strain as one of the Independent Variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>57.582</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>.035</td>
<td>.711</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.082</td>
<td>.388</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.013</td>
<td>.895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>-.007</td>
<td>.939</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>.046</td>
<td>.628</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Role Strain</td>
<td>.171</td>
<td>-.161</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>-.124</td>
<td>.307</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status of family of origin</td>
<td>.039</td>
<td>.678</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Status</td>
<td>.107</td>
<td>.257</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.171</td>
<td>.162</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at p < .05

Table 4.8

Predictors of Physical Health with frequency of Multiple Role Strain as one of the Independent Variables
Table 4.9

Predictors of Physical Health with severity of Multiple Role Strain as one of the Independent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>57.58</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>.030</td>
<td>.762</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.094</td>
<td>.328</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.001</td>
<td>.994</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>-.087</td>
<td>.384</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>-.059</td>
<td>.546</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of Multiple Role Strain</td>
<td>.038</td>
<td>-19.282</td>
<td>.045*</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>.113</td>
<td>.104</td>
<td>-4.531</td>
<td>.021*</td>
</tr>
<tr>
<td>Socioeconomic Status of family or origin</td>
<td>.069</td>
<td>.543</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Status</td>
<td>.096</td>
<td>.319</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.151</td>
<td>.133</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at p < .05
<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.200</td>
<td>.000</td>
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<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>.000</td>
<td>.998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.053</td>
<td>.518</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.119</td>
<td>.145</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Availability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>.041</td>
<td>.057</td>
<td>.002*</td>
<td></td>
</tr>
<tr>
<td>Frequency of Multiple Role Strain</td>
<td>.040</td>
<td>-.012</td>
<td>.009*</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>.279</td>
<td>-.603</td>
<td>.004*</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status of family or origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Health Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority Status</td>
<td>.038</td>
<td>.315</td>
<td>.019*</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.398</td>
<td>.371</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at $p < .05$

Table 4.10

Predictors of Mental Health Status using *frequency* of Multiple Role Strain as one of the Independent Variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.253</td>
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<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>0.004</td>
<td></td>
<td>0.965</td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-0.059</td>
<td></td>
<td>0.483</td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-0.112</td>
<td></td>
<td>0.181</td>
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</tr>
<tr>
<td>Perceived Availability of Resources</td>
<td>0.096</td>
<td></td>
<td>0.303</td>
<td></td>
</tr>
<tr>
<td>Career Aspiration</td>
<td>0.041</td>
<td>0.042</td>
<td>0.019*</td>
<td></td>
</tr>
<tr>
<td>Severity of Multiple Role Strain</td>
<td>0.028</td>
<td>-1.738</td>
<td>0.044*</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>0.279</td>
<td>-0.820</td>
<td>0.000*</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status of family or origin</td>
<td>0.153</td>
<td></td>
<td>0.070</td>
<td></td>
</tr>
<tr>
<td>Physical Health Status</td>
<td>-0.039</td>
<td></td>
<td>0.671</td>
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<tr>
<td>Minority Status</td>
<td>0.031</td>
<td>0.293</td>
<td>0.031*</td>
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</tr>
<tr>
<td>Total</td>
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<td>0.351</td>
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</tr>
</tbody>
</table>

* Significance at p < .05

Table 11

Predictors of Mental Health Status using *severity* of Multiple Role Strain as one of the Independent Variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-4.601</td>
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</tr>
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<td>Marital Status</td>
<td>-.054</td>
<td>.551</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.028</td>
<td>.757</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.023</td>
<td>.801</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>.169</td>
<td>.544</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>Frequency of Multiple Role Strain</td>
<td>.047</td>
<td>.047</td>
<td>.016*</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>-1.02</td>
<td>.413</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status of family or origin</td>
<td>.045</td>
<td>-.343</td>
<td>.012*</td>
<td></td>
</tr>
<tr>
<td>Physical Health Status</td>
<td>.069</td>
<td>.481</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Health Status</td>
<td>.033</td>
<td>1.449</td>
<td>.004*</td>
<td></td>
</tr>
<tr>
<td>Minority Status</td>
<td>-.144</td>
<td>.112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.292</td>
<td>.261</td>
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</tr>
</tbody>
</table>

* Significance at $p < .05$

Table 4.12

Predictors of Career Aspiration using *frequency* of Multiple Role Strain as one of the Independent Variables
<table>
<thead>
<tr>
<th>Variable</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>B</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.772</td>
<td>.820</td>
<td>.772</td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td>-.023</td>
<td>.800</td>
<td>-.023</td>
<td></td>
</tr>
<tr>
<td>Maternal Status</td>
<td>-.012</td>
<td>.896</td>
<td>-.012</td>
<td></td>
</tr>
<tr>
<td>Type of Work</td>
<td>-.026</td>
<td>.787</td>
<td>-.026</td>
<td></td>
</tr>
<tr>
<td>Perceived Availability of Military Resources</td>
<td>.168</td>
<td>.568</td>
<td>.568</td>
<td>.000*</td>
</tr>
<tr>
<td>Severity of Multiple Role Strain</td>
<td>.010</td>
<td>.921</td>
<td>.010</td>
<td></td>
</tr>
<tr>
<td>Stress related symptoms</td>
<td>.062</td>
<td>.566</td>
<td>.062</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status of family or origin</td>
<td>.045</td>
<td>-.343</td>
<td>-.343</td>
<td>.014*</td>
</tr>
<tr>
<td>Physical Health Status</td>
<td>-.023</td>
<td>.802</td>
<td>-.023</td>
<td></td>
</tr>
<tr>
<td>Mental Health Status</td>
<td>.033</td>
<td>.908</td>
<td>.908</td>
<td>.049*</td>
</tr>
<tr>
<td>Minority Status</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.246</td>
<td>.221</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significance at $p < .05$

Table 13

Predictors of Career Aspiration using severity of Multiple Role Strain as one of the Independent Variables
LIST OF REFERENCES


