

**STRONG COMMUNITIES, STRONG FAMILIES: AN EXAMINATION OF THE  
ASSOCIATION OF COMMUNITY FUNCTIONING WITH PSYCHOLOGICAL  
RESILIENCE, PSYCHOPATHOLOGY, AND FAMILY OUTCOMES IN ACTIVE  
DUTY AIR FORCE MEMBERS**

by

REBEKAH D. ADAMS

B. A., Pepperdine University, 2007  
M.MFT., Abilene Christian University, 2009

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services  
College of Human Ecology

KANSAS STATE UNIVERSITY  
Manhattan, Kansas

2012

## **Abstract**

Using a representative sample of married, active duty Air Force service members (N= 29,254), a theoretical model of community functioning was tested to examine the association between community functioning and three family outcomes (i.e., parent-child relationship satisfaction, family coping, and marital satisfaction). Tests of indirect relationships included measures of psychological resilience, depression, and PTSD, while rank and gender were examined as potential moderators. Results using structural equation modeling indicated that there was a direct, positive relationship between community functioning and all three family outcome variables and an indirect relationship through both psychological resilience and depression. In addition, there was a direct, negative relationship between community functioning and depression, as well as an indirect relationship through psychological resilience. Moderation was supported for rank only. These results demonstrate the importance of community functioning and resilience as they relate to service member's mental health and family relationships. They suggest a potential framework in which community functioning and resilience may lead to reductions in individual and family risk factors.

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## **Chapter 1 - Introduction**

Active duty service members face many challenges that can impact multiple areas of life including community involvement, psychological functioning and family functioning (Wadsworth, 2010). These challenges include long work hours, frequent relocations, deployment, combat exposure, and potentially injury and death. As a result of these challenges, military service members are at increased risk for psychopathology such as post-traumatic stress disorder and depression. A study of Army soldiers returning from Iraq during the years 2005 and 2006 found that between 20% and 40% of these military personnel were identified as fitting criteria sufficient to warrant mental health treatment (Milliken, Auchterlonie, & Hoge, 2007). Additionally, participants who warranted mental health treatment reported significant difficulties with interpersonal relationships. Consistent with these findings, research focused on civilian populations demonstrates that family relationships are at risk when parents/partners suffer from psychological symptoms (Papp, Cummings, & Goeke-Morey, 2005; Whitton & Whisman, 2010). Therefore, service members risk exposure to events and circumstances that threaten their mental and physical well-being and that ultimately may impact the lives of their loved ones. While research has demonstrated the deleterious effect of psychopathology on military family relationships (Allen, Rhoades, Stanley, & Markman 2010; Cohen, Zerach, & Solomon, 2011; Erbes, Meis, Polusny & Compton, 2011; Miliken et al, 2007), there is some evidence that suggests not all individuals are touched by psychopathology during their military experience (Cozza, Chun, & Polo, 2005; Orthner & Rose, 2005). These results have focused attention on the need to determine the factors that promote individual and family health during times of heightened stress.

Two potentially promising factors that have been found to promote individual and family health are psychological resilience and community functioning. Specifically, resilience is identified as an important characteristic as it is associated with fewer alcohol problems and less suicidality, as well as lower depressive symptom severity in military veterans (Green, 2010). Given these benefits, an effort to build resilience in service members has resulted in the identification of many community supports that are said to build resilience in individuals (Meredith, 2011).

In a multidisciplinary review, the impact of neighborhoods, social support, and overall social capital on mental health outcomes for civilian children, adolescents and adults is well documented (Almedom, 2005). In particular, this review demonstrates the importance of social integration into the community and that the use of community resources is associated with reports of stronger emotional health including decreases in mental distress for adults. With these benefits noted for civilian populations, it makes sense that the military community be viewed as an important resource for military families. For military parents, perceived community resources are associated with increases in maternal-child relationship quality (Posada, Longoria, Cocker, & Lu, 2011). Other community functions within the military community such as unit support are associated with lower rates of PTSD and greater family adjustment (Taft, Schumm, Panuzio, & Proctor, 2008). Family re-integration programs are designed to provide training for the service member and family to help prepare for and cope with psychopathology and to support family relationships. In addition to preparing the service member for return, the programs also emphasize the importance of family access to various supports needed in the base community. Perhaps strong communities offer service members an opportunity to build psychological

resilience and as a result, service members may be better able to sustain strong mental health, and strong family relationships.

As the community context becomes more integrated into family research, and in particular military family research, there is an effort to hone the conceptualization and measurement of various community processes (Mancini, Bowen, & Martin, 2005). Viewing service members and their families in their social context can add to research and intervention efforts by including an important piece of family life, the family's community, which could serve to promote family functioning particularly through its impact on resilience. This study attempts to expand literature in this area by examining a model in which community functioning is associated with family outcomes (i.e., couple relationship satisfaction, parent-child relationship satisfaction, and family coping) indirectly through individual psychological resilience and individual psychopathology in a population of active duty Air Force military service members.

### **Theoretical Framework**

The current study utilizes the community capacity model (Bowen, Martin, Mancini, & Nelson, 2000) in which components of the community, including formal networks (organizations and institutions), informal networks (neighborhoods, social relationships), and community capacity (community cohesion) are proposed to be related to individual and family related outcomes of military service members. Components of the community capacity model and specifically the role of community cohesion, or the way in which a community embodies shared responsibility and collective competence in the "ability to perform" as a community when necessary (Bowen, et al 2000), are taken from previous work targeted at identifying community factors that deter violence (Sampson, Raudenbush, & Earls, 1997). According to the community capacity model, strong community functioning promotes a sense of belonging and shared

purpose among individuals in the community which in turn results in positive individual and family outcomes and the ability to adjust to changes (Huebner, Mancini, Bowen, & Orthner, 2009; see Figure 1). Two research studies utilizing this model in military populations have been examined. The most recent study used the community capacity model to test the relationship between community factors and individual outcomes (Foran, Heyman, & Smith, 2011). Foran et al. used a broad range of community variables including support from leadership, formal agencies, support for youth, social support, community safety, among others in a sample of 40,000 active duty airmen (Air Force) to examine the association of community functioning with individual outcomes. Results showed that strong community functioning was associated with lower rates of depressive symptoms, less hazardous drinking, and higher levels of couple relationship satisfaction. This is consistent with theoretical propositions of the community capacity model in that building community networks helps grow social capital which in turn promotes strong community functioning and strengthens individual outcomes (Mancini, Nelson, Bowen, Martin, 2006).

The second empirical examination of the community capacity model investigated the relationship between community factors (i.e., informal support, formal support, and sense of community) and family adaptability. Using a large sample of active duty air force service members (N= 17,161), the study found that participants' perceived sense of community mediated the relationship between formal (unit) support and informal community network support and family adaptability. Service members who reported satisfaction with unit leadership's involvement with their family (formal support) and greater perceived likelihood that members of their community would be available to help if needed (informal support) in turn rated stronger satisfaction with the military way of life and base community (sense of community) which were

positively associated with family adaptability or feeling that their family was better able to manage conflict and solve problems (Bowen, Mancini, Martin, Ware, & Nelson, 2003).

Examinations of the community capacity model to date have focused on one or two aspects of community functioning and on one level of outcome such as individual outcomes or family related outcomes. Because military life is multifaceted, a multi-dimensional assessment is required to gain a broader picture of how these relationships work (Hoshmand & Hoshmand, 2007). Community is also multifaceted and can be defined and measured in many different ways. In the current study, community is defined as formal institutional support and informal network support. Formal support includes support from Air Force agencies and programs, support from Air Force leadership, and community resources available in the larger, non-Air Force community. Informal support includes social support such as support from neighbors and friends. It also includes a sense of community cohesion and community safety. The current study will examine the community capacity model in the context of individual perceptions of and satisfaction with these multiple aspects of community life. The current study seeks to examine the relationship between community functioning, broadly defined, and multiple aspects of individual (psychological resilience and psychopathology) and family outcomes (marital satisfaction, family coping, and parent-child relationship satisfaction).

## **Chapter 2 - Literature Review**

### **Community Functioning and Family Outcomes**

Strong community functioning has been shown to be positively associated with individual and parenting outcomes. For mothers with partners in the military, perceived informal community resources are associated with higher levels of parent-child relationship quality (Posada, Longoria, Cocker, & Lu, 2011). As mentioned previously, assessment of the community capacity model found that community supports were associated with overall family adjustment to military life (Bowen, Mancini, Martin, Ware, & Nelson, 2003). This is in line with previous work documenting the positive influence of both informal and formal community supports for families during military separations, including support groups, military social services, other families in the unit, faith-based groups, and military staff (Watson Weins, & Boss, 2006). In a study of 34,000 active duty service members, formal support such as unit relationships and tangible informal community support was found to be associated with positive perceptions of their partner's ability to cope with deployment (Spera, 2009). In general, one way to explain how community connections and resources impact families could be through the way in which they strengthen psychological resilience.

### **Mediating Role of Resilience**

Strong community functioning has been found to be one important factor in promoting and strengthening resilience (Melvin, Gross, Hayat, Jennings, & Campbell, 2012; Meredith et al 2011; Peters, 2005). Resilience is commonly used to describe personal hardiness, defined as an ability to achieve personal growth in the face of adversity. Resilience is also defined as the ability to bounce back to a level of functioning that is equal to or greater than before a crisis (Boss, 2005). Research indicates the potential benefits resilience carries for individuals.

In their extensive literature review, Meredith et al. (2011) identified several factors, including community level variables, which promote resilience among military personnel. Such community factors include belongingness, cohesion, connectedness, and collective efficacy. Belongingness refers to an individual's sense of integration into the community. This includes involvement in organizations; participation in events and social services as well as the amount of friendships or social ties that have been created. Cohesion and connectedness refer to shared values and common goals that bring people together. The quality of these connections is also included in the identification of connectedness, in that the individual has a connection to the goals, structure, roles and responsibilities of a community. Collective efficacy from this review identified perceptions of the community's ability to work together. Military members who benefited from these types of community support participated in formalized community structures, were involved with other members of the community through informal networks and believed that the overall community was successful at working together. This documents the type of supports that promote psychological resilience. Other studies, based primarily on civilian samples, have identified the role of social support and various informal social networks and resources as factors that promote resilience. Bonanno, Galea, Bucciarelli, & Vlahov (2007) used data collected from residents of New York shortly after the September 11<sup>th</sup> terrorist attacks and found that high and medium levels of social support, including membership in community based groups such as veterans groups, and exercise groups, was a significant factor in individuals who were classified as resilient. In the same study, Bonanno et al (2007) noted that resilience was associated with lower incidence of depression compared to others in the survey.

## **Mediating Role of Psychopathology**

Not only do community factors seem to promote resilience, but there is also evidence to suggest community functioning also decreases the risk for psychopathology. In particular, there is an inverse relationship between social support and PTSD. In a meta-analysis, Ozer, Best, Lippy, & Weiss (2007) reported that the association between social support and PTSD is stronger for military-related combat trauma as opposed to other sources of trauma. Specifically, perceptions of higher levels of social support following exposure to trauma were associated with fewer PTSD symptoms. Social support, from this meta-analysis, included emotional support and psychological processing of the trauma such as making meaning out of the trauma, coping with nightmares, and dealing with memories, and was provided by all types of supports ranging from informal networks (such as family and friends), to formal supports (like leaders and various helping professionals). This support was most needed after some time had passed since the event rather than shortly after the experience.

Community functioning specific to military life has also been examined. A study of 272 war veterans from Operations Iraqi Freedom and Enduring Freedom, found both unit support and post-deployment support to be inversely associated with incidents of depression and PTSD (Pietrzak, Johnson, Goldstein, et al, 2010). Service members who reported good relationships among their units as well as high levels of emotional and instrumental support from employers, family, and friends upon returning from deployment reported lower levels of PTSD symptoms. Additionally, they found that resilience mediated the relationship between these two types of support and psychopathological symptoms of trauma exposure. They found that unit support was associated with higher levels of resilience which in turn was associated with lower levels of PTSD and depressive symptomology. Resilience is said to serve as a protective function against psychopathology specifically following traumatic events in military samples and non-military



samples (Bensimon, 2012; Green, 2010; Pietrzak et al, 2010). Green (2010) found higher levels of resilience were associated with lower levels of PTSD following combat exposure in a sample of reserve soldiers. It is likely that strong community networks promote psychological resilience, which in turn reduces the risk of experiencing symptoms of psychopathology. In sum, community functions are said to promote resilience in individuals and in turn this resilience is associated with lower levels of psychopathology.

### **Psychopathology and Family Outcomes**

Service members are regularly screened for mental health concerns and often report symptoms associated with PTSD and depression. These mental health disorders have a negative effect on family outcomes including marital satisfaction and the parent-child relationship (Cohen, Zerach, & Solomon, 2011; Erbes, Meis, Polusny & Compton, 2011; Galovski & Lyons, 2004; Knobloch & Theiss, 2011; Papp, Cummings, & Goeke-Morey, 2005; Samper, Taft, King, & King, 2004). Particularly, parents with limited psychological resources tend to experience greater difficulties in their role as a parent and partner. Depression in both fathers and mothers has been linked to negative outcomes in children as well as negative perceptions of the parent-child relationship (Downey & Coyne, 1990; Ramchandani, Stein, Evans, & O'Connor, 2005). For military partners who recently returned from deployment, feeling depressed was associated with more uncertainty about the romantic relationship and in turn reported lower relationship quality (Knobloch & Theiss, 2011).

Of importance for military families, parents with post-traumatic stress disorder symptoms and combat exposure, report lower levels of parental satisfaction and family adjustment (Cohen, Zerach, & Solomon, 2011; Taft, Schumm, Panuzio, & Proctor, 2008). Family adaptability and cohesion was lower among parents with high levels of combat exposure. This relationship was

explained by the number of PTSD symptoms reported by the parent. It is also important to note that greater PTSD symptoms in male veterans have a negative association with parent-child relationship satisfaction independent of symptoms of depression, substance use and partner violence (Samper, Taft, King, & King, 2004). Furthermore, Sayers, Farrow, Ross, & Oslin (2009) found that PTSD symptoms were associated with veterans' perceptions of family members. Specifically, veterans with greater PTSD symptoms were more likely to report that their children were "acting afraid or not acting warm" toward the veteran. Similarly, scores on depression were associated with the veteran feeling like a guest in his/her own home. Depression in both fathers and mothers has been linked to negative perceptions of the parent-child relationship (Ramchandani, Stein, Evans, & O'Connor, 2005), similar to the results found for PTSD symptoms. Orthner & Rose (2005) found that a child's overall ability to cope with military stress was a direct result of the parent's adaptation to military life and coping success. The parent's ability to adjust during a time when psychological resources are limited, such as living with depression or PTSD, is potentially indicated by the parent's level of psychological resilience. It is clear that parents with depleted psychological resources are at increased risk to be unable to have and maintain successful family relationships.

For couples, trauma symptoms reported by soldiers are associated with lower reported relationship quality. In particular, Nelson Goff, Crow, Reisbig & Hamilton (2007) found that trauma symptoms, such as anxiety and disassociation, held an inverse relationship with both partners reports of relationship quality. Similarly, Erbes and colleagues (2011) found that PTSD factors predicted poor relationship adjustment in National Guard service members who had recently returned from the Iraq war. Similar findings have been found for active duty members of the US army. Allen, Rhoades, Stanley, and Markman (2010) found that PTSD symptoms were

negatively related to relationship quality including satisfaction with their partner and the relationship as well as the level of commitment and dedication to the relationship. In addition to the relationship with marital quality, couple functioning, or the couple's ability to resolve conflict and communicate is lower for those who report PTSD symptoms as well (Melvin, Gross, Hayat, Mowinski Jennings, & Campbell, 2012). This study did find, however, that resilience was associated with higher levels of couple functioning, even with those who reported PTSD symptoms.

### **Moderators**

A series of moderation analyses will be conducted to identify potential differences between types of military service members based on characteristics known to be associated with the study variables. Specifically, the current study will examine potential moderating effects for rank and gender.

#### ***Rank***

In a sample of Army veterans from the Gulf War, lower rank was associated with multiple psychiatric disorders such as depression, anxiety, and substance use (Fiedler, Ozakinci, Hallman, Wartenberg, Brewer et al 2006). A later study confirmed this finding, in that higher rank was correlated with lower reported rates of depression (Riddle, Sanders, Jones, & Webb, 2008). One explanation offered in the literature for this finding is that rank is seen as a measure of socio-economic status which in civilian populations is also associated with risk for mental and physical health difficulties. Contrary to this finding, Bowen et al. (2003) tested their model of community capacity and family outcomes and found no differences across five groups of different pay grades. In addition, since we know rank is a moderator of job satisfaction in the military (Sanchez, Bray, Vincus, & Bann, 2004) it is plausible that differences in perceptions of

community networks might also exist among members in different ranks. Therefore, the current study will be testing the moderating effect of rank on the associations between community functioning, individual resilience, psychopathology and family outcomes.

### *Gender*

In a review of recent literature on military related PTSD and intimate relationships, Monson, Taft, and Fredman (2009) noted that most research was with male samples. As the number of women service members grows, it is important to examine potential differences for outcomes based on gender. Fiedler and colleagues (2006) found a gender effect in which female service members were more likely to experience psychiatric disorders than their male counterparts. Research has also documented that symptoms of PTSD associated with the parent-child relationship were different for female nurse veterans than they were for male veterans in two separate studies indicating a potential gender difference (Berz, Taft, Watkins, & Monson, 2008 & Samper, et al 2004). Specifically, symptoms related to hypervigilance seemed to impact female veterans' relationships with their children whereas the avoidance and emotional numbing were associated with male veterans' parent-child relationships. While the current study does not separate PTSD symptoms, these findings highlight a potential gender difference in the relationship between psychopathology and parent-child relationship satisfaction.

A gender difference was found between combat exposure and family adjustment when PTSD symptoms were included but not when PTSD was excluded (Taft et al, 2008). In a civilian sample, satisfaction with social support as well as experience with negative reactions from family and support networks effected women's PTSD symptoms greater than men's (Andrews, Brewin, & Rose, 2003). Gender differences in military populations in relation to depression and military related measures have not yet been examined. This, in combination with the gender

differences among active duty members' reports of post traumatic stress during deployment also warrant further investigation of gender as a moderator (Vogt, Samper, King, King, & Martin, 2008).

### **Controls**

A number of control variables were used in this study to account for various factors known to be associated with the study variables. Participant's age, number of children, and relationship length were included in the model given their association with marital satisfaction. Military related controls were also included in the model such as years of service, whether or not the service member lived on or off base, as well as whether or not their family was currently living with them.

### **The Current Study**

The current study tested a model of community functioning to explore interrelationships between resilience, psychopathology, and family outcomes (see Figure 2). In addition, several moderation analyses were conducted to identify potential variations of the model based on characteristics of the individual. The following hypotheses were examined:

1. Community functioning will be positively related to reports of psychological resilience
2. There will be an inverse relationship between resilience and psychopathology (i.e., depressive symptoms and PTSD symptoms)
3. Higher levels of depression and PTSD symptoms will be negatively associated with marital satisfaction, parent-child relationship satisfaction, and family coping
4. Resilience will mediate the relationship between community functioning and psychopathology

5. Resilience, depressive symptoms, and PTSD symptoms will mediate the relationship between community functioning and marital satisfaction, family coping, and parent-child relationship satisfaction.

The study provides several additions to the literature. First, empirical examinations of the community capacity model are lacking. There have only been two documented studies testing this model (Bowen, Mancini, Martin, Ware, & Nelson, 2003; Foran, Heyman, & Slep, 2011). Bowen et al (2003) examined the model only in the context of family outcomes while Foran et al (2011) tested the model with individual outcomes. The current study tests the model while simultaneously examining both individual and family outcomes to provide a comprehensive framework for how these variables function together. Furthermore, tests of indirect effects are lacking in the research. Many studies report resilience as a mediator yet results do not report specific tests of indirect effects leading to broad conclusions about the role of resilience in family outcomes. Previous research examines the relationships between these variables with large proportions of Reserve and National Guard veteran service members. Little research involves large samples of other duty status service members, specifically active duty military members. This study attempts to address these current limitations to move the field forward toward an understanding of the community capacity model with regard to community functioning and various individual and family outcomes.

## Chapter 3 - Methods

### Sample

To test the proposed model, data from the 2011 U. S. Air Force Community Assessment Survey will be used ( $N = 56,137$ ). The survey gathered information through an anonymous web-based survey that targeted 80 bases worldwide. The sample for this study included active duty Air Force members who were currently married and had children ( $N = 29,254$ ). Out of this sample the majority of participants were male (84%). Participants were, on average, between the ages of 26 and 35 (45%), but also included individuals aged 18-20 (0.4%), 21-25 (8.6%), 36-45 (40%), and 46-55 (5.5%). In addition, the average length of marriage was 10.7 years.

Participants were asked to identify the type of housing in which they were currently living. Of those in the study population, about 30% reported living on-base either in government housing or dorms. The other 70% reported living off-base in government-leased housing, condos, apartments, and homes in which they either rent or lease. Participants were also asked if their families were living with them on assignment. Almost all participants (96%) reported that their families were currently living with them, with 34% reporting that they had one child currently in the home, 42% reporting that they had two children in the home, and the remaining 24% reported having three or more children currently living with them.

Participants reported the number of years they have in military service both as active duty and reserve. In this sample responses ranged from less than one year to a total of 40 years ( $M = 14.33$ ). The variable rank was dichotomized to represent status as junior or senior rank. Junior rank included those who reported falling into the pay grade category of E1 to E9 while senior

rank included those who reported O1 rank or higher. Junior service members represented 60.6% of the sample population and 39.4% fell into the senior category.

### **Analysis Plan**

To test the hypothesized model, data was examined using structural equation modeling procedures using Mplus, Version 6.1 (Muthén & Muthén). Preceding the testing of the model, measurement models were analyzed to test the adequacy of proposed latent variable models for various constructs identified in the model. Measurement invariance was examined for each of the latent variables across the groups being examined. To do this, factor loadings were constrained to be equal between the two groups for gender (male and female) and rank (junior and senior). These constrained loadings were then compared with the unconstrained counterpart models in which factors were freely estimated for each group. Tests of model fit were examined to guide model specification of the latent constructs for the structural model. Similar tests were conducted in the examination of the structural models to test for moderation. Factor loadings and model pathways were constrained to be equal in each group and then tested against loadings and pathways specified to freely load across the structural model. For this study, missing data was handled using full information maximum likelihood (FIML). The FIML method for handling missing data demonstrates ability to produce unbiased estimates and more robust calculations over traditional approaches (Acock, 2005).

Some of the study variables did not meet the assumption of normal distribution. To account for this violation, bootstrapping techniques were specified in the model. Bootstrapping is a re-sampling technique that, in the cases of non-normal distribution, allows for more precise estimates of standard errors especially when used for large sample sizes (Finney & DiStefano, 2005). Bootstrapping methods were also used to estimate indirect effects and test for mediation



in the model (Preacher & Hayes, 2008). In order to provide a more rigorous test of the theoretical model, the sample was randomly divided into two groups. The first group was a targeted sample for model development and the second group was a sample used for model validation. Before comparing the two groups, appropriate analyses were conducted in order to determine whether significant differences exist between the model development group and the validation group on relevant demographic and model variables.

## **Measures**

### ***Family Outcomes***

***Parent-Child Relationship Satisfaction.*** Three items were used to assess the participant's satisfaction and enjoyment with parenting experiences. All items used a 6-point scale with higher scores indicating greater satisfaction. The first item asked "All things considered, how much of the time is being a parent to your child(ren) an enjoyable experience? Answers ranged from Almost never to Almost always. The second item asked about the participant's relationship with the child, "All things considered, how satisfied are you with your relationship(s) with your child(ren)? Participants rated satisfaction from Very dissatisfied to Very satisfied. The third item asked about the ease of raising the child and asked, "Children are sometimes described as difficult or easy to raise. How would you describe raising your child(ren) during the last 12 months? Answers ranged from Very difficult to Very easy ( $\alpha = .68$ ).

***Marital Satisfaction.*** Four items from the Quality of Marriage Index (Norton, 1983) were used to assess participant's level of marital satisfaction with their current partners. One item asked the participant to rate a statement about their relationship, "I have a warm and comfortable relationship with my partner". Two items asked how satisfied and how rewarding the participant

believes the relationship to be. And the fourth item asked participants to rate their level of happiness, all things considered, on a scale from 1 to 7 *fairly unhappy* to *could not possibly be any happier* with higher scores indicating greater marital satisfaction ( $\alpha = .98$ ).

***Family Coping.*** Three items were used to assess participant's perception of their family's ability to work as a team, keep a positive perspective, and confront problems directly using a 6-point scale. Responses ranged from *almost never* to *almost always*. Example items included "when my family has to cooperate to accomplish something, we work together as a team" and "when my family is going through a rough period, we keep a positive perspective." Higher scores indicate greater perceived family coping ( $\alpha = .90$ )

### ***Mental Health Variables***

***Depressive Symptoms.*** Seven items from the larger 20-item Center for Epidemiological Studies Depression Scale (Radloff, 1977) were included to examine in the past week how many days the participant "felt that you couldn't get going", "felt sad", "had trouble getting to sleep or staying asleep", "felt that everything was an effort", "felt lonely", "felt you couldn't 'shake the blues'", and "had trouble keeping your mind on what you were doing?". Participants rated from *no days* to *5-7 days*. The seven item measure is highly correlated .92 with the original 20-item measure (Mirowsky & Ross, 1992) and in this sample demonstrated good reliability ( $\alpha = .84$ ). Since this is a unidimensional construct with seven items, the item-to-construct parceling technique was utilized to create a latent construct with three parceled items (Little, Cunningham, Shahar, & Widaman, 2002).

***PTSD.*** Participants responded to the four item Primary Care-PTSD screen (Prins, Ouimette, Kimerling, et al, 2003). Responses to each item were either *no* (0) or *yes* (1) related to hypervigilance, detachment, and re-experiencing. Items were introduced with the following

statement: In your life, have you ever had any experience that was so frightening, horrible, or upsetting that in the past month you: (1)“have had nightmares about it or thought about it when you did not want to?”, (2)“tried hard not to think about it or went out of your way to avoid situations that reminded you of it?”, (3)“were constantly on guard, watchful, or easily startled”, and (4)“felt numb or detached from others, activities, or to your surroundings?” Used as a manifest variable, items from this scale were summed ( $\alpha = .82$ ).

***Resilience.*** The items used to assess participant’s level of resilience come from the Connor Davidson Resilience Scale which identifies resilience as a state characteristic rather than a trait characteristic (Connor & Davidson, 2003). Used as a manifest variable, scores on this measure were trichotomized representing low (1), moderate (2), or high (3) levels of resilience. Individual items from this scale were not included in the dataset.

### ***Community Functioning***

The community functioning construct for this study is theoretically derived from the community capacity model (Mancini, Bowen, & Martin, 2005) and modeled after the empirical results derived from Foran and colleagues’ 2011 study for which they used the 2006 Air Force Community Assessment Survey data. Their use of the community capacity model included scales from all three components (i.e., formal networks, informal networks, and community cohesion) that were theoretically distinct, but empirically they formed a single latent construct called community functioning. All three factors of the community capacity model fit the data in a more parsimonious way as one latent construct rather than three separate constructs. Given the similarity in scales and data between the current study and the study identified above, one construct entitled community functioning was used in the model for the current study. The construct identified in the model is comprised of eight manifest variables covering all three

components of the theoretically derived model. Two scales address support from formal networks (support from leadership and support from formal agencies), three scales address informal networks (social support, support from neighbors, and support for youth) and three scales target perceptions of communities (community unity, community safety, and community resources). All items were assessed on a 6-point scale and total scores were derived averaging all items in each scale with higher scores indicating greater community functioning.

***Support from leadership.*** Nine items were used to assess participants' sentiments about support from AF leaders, unit-leaders and immediate supervisors. Two items asked the effectiveness of specific AF leaders in addressing needs of members and their families rating *extremely ineffective to extremely effective*. Four items asked participant's agreement with statements made about unit-level leaders sponsoring activities, helping families get settled and connected in their new communities, working as a team, and supporting AF agencies to address needs of members and families. These items were given responses ranging from *strongly disagree to strongly agree*. The last two items asked participants to rate their satisfaction with the support they and their families received from their immediate supervisor during their most recently deployment with answers ranging from *very dissatisfied to very satisfied* ( $\alpha = .90$ ).

***Support from formal agencies.*** Participants were asked to rate their level of agreement with four statements about the staff from agencies' abilities to serve the community. Example statements include "Staff from agencies have a good working knowledge of the services offered by their own agency", "staff from agencies know and understand the need of Active Duty personnel", and "staff from agencies are effective in addressing the needs of members and families". Responses ranged from *strongly disagree to strongly agree* ( $\alpha = .96$ ).

***Social support.*** Participants were asked to respond *almost never* to *almost always* on four items measuring whether or not they had friends, neighbors, co-workers, or relatives (besides spouse or significant other) outside the home who would: (1) provide transportation if needed, (2) lend household tools or equipment, (3) give information about available community agencies and resources, and (4) take care of children in an emergency ( $\alpha = .95$ ).

***Support from neighbors.*** This scale was derived of four items in which participants were asked to rate their level of agreement with statements related to people in the neighborhood in which they live. Items include; “People in the neighborhood in which you live: (1) ‘know the names of their neighbors’, (2) ‘look out for one another’, (3) ‘talk or visit with neighbors’ and (4) ‘offer help or assistance to one another in times of need’”. Participants rated agreement from *strongly agree* to *strongly disagree* ( $\alpha = .95$ ).

***Support for youth.*** Two items assessed the participants’ agreement with the level of support given to youth by base leadership, and opportunities for youth that promote interesting and meaningful use of time. Participants’ answers ranged from *strongly disagree* to *strongly agree* ( $\alpha = .91$ ).

***Community cohesion.*** Fourteen items assessed participants answered their level of agreement with various statements about the sense of community, teamwork, and responsibility to the base community felt among active duty members as well as their families. Items began by asking participants to rate their level of agreement various statements such as; “members and families assigned to this base feel a sense of common mission and purpose”, “members and families assigned to this base feel connected to other members and families”, and “people like me can make a positive difference in the lives of other people assigned to this Air Force Base” ( $\alpha = .94$ ).

**Community safety.** Participants answered four items targeted at the general feeling of safety from crime and violence in the community and neighborhood with two items asking about child's level of safety. Two items were reverse coded to remain consistent with higher scores representing more safety. Sample items include, "how safe are you from crime and violence in your residence?" with responses ranging from *very unsafe* to *very safe* and "how often are you afraid that someone will hurt or bother your child(ren) at school?". Responses for these items ranged from *almost never* to *almost always*. Adequate reliability was achieved for this scale ( $\alpha = .74$ ).

**Community resources.** Thirteen items were used to assess the availability and quality of various resources including housing, healthcare, childcare, job opportunities, public transportation, and activities for youth. Two additional items asked participants to rate their satisfaction with the educational opportunities and quality of schools. Participants gave responses ranging from *very dissatisfied* to *very satisfied*. Chronbach's alpha indicated good reliability for the scale ( $\alpha = .84$ ).

## Chapter 4 - Results

### Descriptive Statistics

In general service members reported low levels of PTSD symptoms ( $M = 4.36$ ,  $SD = .917$ , Range = 4-8) and high levels of marital satisfaction ( $M = 22.52$ ,  $SD = 6.30$ ), family coping ( $M = 15.06$ ,  $SD = 2.65$ ), and parent-child relationship satisfaction ( $M = 22.52$ ,  $SD = 2.22$ ). Service members also reported moderate levels of resilience ( $M = 2.10$ ,  $SD = .715$ ) as well as low incidence of depressive symptoms ( $M = 9.56$ ,  $SD = 3.39$ , Range = 0 - 21).

Independent sample t-tests were conducted to test for differences among relevant study variables with the development and validation samples. No significant differences were noted between these two samples. Bivariate correlations indicated a pattern consistent with study hypotheses and are reported in Table 1. Resilience was negatively correlated with depressive symptoms ( $r = -.36$ ,  $p < .001$ ) and PTSD symptoms ( $r = -.17$ ,  $p < .001$ ), and positively correlated with marital satisfaction ( $r = .23$ ,  $p < .001$ ), parent-child relationship satisfaction ( $r = .27$ ,  $p < .001$ ), and family coping ( $r = .36$ ,  $p < .001$ ). Depressive symptoms were positively related to PTSD symptoms ( $r = .51$ ,  $p < .001$ ) and negatively related to family coping ( $r = -.33$ ,  $p < .001$ ), marital satisfaction ( $r = -.29$ ,  $p < .001$ ), and parent-child relationship satisfaction ( $r = -.27$ ,  $p < .001$ ). PTSD symptoms were also related to all three family outcomes ( $r = -.18$ ,  $p < .001$  for family coping;  $r = -.16$ ,  $p < .001$  for marital satisfaction;  $r = -.14$ ,  $p < .001$  for parent-child relationship satisfaction). Significant relationships were found between all eight community variables and study outcomes as well.

## Confirmatory Factor Analysis for Gender and Rank

All analyses were conducted using sampling weights with robust estimates. When bootstrapping was needed, models were run without sampling weights. Before the full structural model was tested, a measurement model with all five latent variables was specified to examine whether the indicated items loaded well onto the latent variables (Figure 3). These analyses were conducted with the development sample ( $N=13,830$ ). Results indicated that the measurement model fit the data well:  $\chi^2(211) = 2117.110$ , Root Mean Square Error of Approximation (RMSEA) = .026, (90% CI = .025, .027), Comparative Fit Index (CFI) = .971; Tucker-Lewis Index (TLI) = .965. Measurement invariance was then examined for both gender and rank prior to the testing of the full structural model. To test for this, the initial models were free to vary across the two groups (i.e., men and women, enlisted and officer). Subsequent analyses included constraining factor loadings of each latent variable to be equal across groups as well as factor covariances. For each of these changes, the Satorra-Bentler Scaled Chi-squared difference test was computed and used due to the non-normal distribution of the data (2001). For gender, the model fit indices indicated good fit to the data:  $\chi^2(374) = 2486.753$ , RMSEA = .029 (90% CI = .028, .031), CFI = .969; TLI = .965. Constraining the factor loadings to be equal across men and women also yielded appropriate model fit:  $\chi^2(390) = 2489.602$ , RMSEA = .029 (90% CI = .028, .030), CFI = .969; TLI = .967. After factor loadings were constrained and the chi-square difference test was computed, no significant change to the model was indicated ( $\Delta \chi^2_{SB}(16) = 17.682$ , ns) and acceptance of measurement invariance across gender was assumed.

For rank, the measurement model also indicated good fit for both groups when freely estimated  $\chi^2(374) = 2522.088$ , RMSEA = .030 (90% CI = .029, .031), CFI = .965; TLI = .961. Difference tests between this model and the model with constrained factor loadings indicated no significant difference confirming measurement invariance for rank ( $\Delta \chi^2_{SB}(16) = 19.703$ , ns).



Covariance estimates between groups for gender and rank were not invariant and were left unconstrained in the final structural model.

### **Structural Equation Models**

The standardized path coefficients for the full structural model are reported in Figure 4. The hypothesized model approached good fit  $\chi^2(307) = 4055.247$ , RMSEA = .031 (90% CI = .030-.031), CFI = .947; TLI = .932. Based on modification indices a path was added from PTSD to depressive symptoms. Theoretically this is consistent with literature in which those with PTSD have a greater likelihood to experience other mental health problems such as anxiety or depression. Adding the path improved the model fit and indicated consistency with the observed data:  $\chi^2(307) = 2984.761$ , RMSEA = .026 (90% CI = .025-.027), CFI = .962; TLI = .952. After controlling for number of children, age, years of military service, relationship length, if the member's family was living with them and location of current housing, community functioning was positively associated with all three family outcomes (family coping,  $\beta = .18$ ,  $p < .001$ ,  $r = .46$ ; marital satisfaction,  $\beta = .09$ ,  $p < .001$ ,  $r = .28$ ; and parent-child relationship satisfaction,  $\beta = .18$ ,  $p < .001$ ,  $r = .42$ ). Community functioning also had a strong positive association with resilience ( $\beta = .31$ ,  $p < .001$ ,  $r = .67$ ). In other words stronger community functioning is associated with having higher levels of resilience and higher levels of marital satisfaction, satisfaction with the parent-child relationship, and higher levels of family coping. Resilience was negatively associated with both PTSD ( $\beta = -.12$ ,  $p < .001$ ,  $r = .43$ ) and depressive symptoms ( $\beta = -.24$ ,  $p < .001$ ,  $r = .74$ ). PTSD was not associated with any of the family outcomes. Depressive symptoms and resilience were associated with family outcomes. Higher levels of depressive symptoms were negatively associated with marital satisfaction ( $\beta = -.20$ ,  $p < .001$ ,  $r = .42$ ), parent-child relationship satisfaction ( $\beta = -.15$ ,  $p < .001$ ,  $r = .30$ ), and family coping ( $\beta = -.16$ ,  $p$

< .001,  $r = .29$ ). Higher levels of resilience were associated with reports of higher marital satisfaction ( $\beta = .12$ ,  $p < .001$ ,  $r = .44$ ), higher levels of family coping ( $\beta = .24$ ,  $p < .001$ ,  $r = .64$ ), and more satisfaction with the parent-child relationship ( $\beta = .16$ ,  $p < .001$ ,  $r = .50$ ). Age, number of children and years of military service were all negatively associated with parent-child relationship satisfaction ( $\beta = -.06$ ,  $p < .05$ ;  $\beta = -.12$ ,  $p < .01$ ,  $\beta = -.08$ ,  $p < .01$ , respectively).

To empirically test for moderation of rank and gender, two models were run for each group in which path coefficients were free to vary, and then constrained to be equal. Chi-square difference tests were then computed to determine if there were statistical differences between the models. For gender, the constrained model did not significantly worsen model fit ( $\Delta \chi^2_{SB}(18) = 14.93$ , ns), rejecting the hypothesis that gender moderates the relationships specified in the model. Moderation was supported for rank as evidenced by a worsened model fit when constraining the paths ( $\Delta \chi^2_{SB}(18) = 46.03$ ,  $p < .01$ ). Paths coefficients were then constrained one by one to determine which associations were different based on rank. Tests for moderating paths revealed a stronger association between community functioning and resilience for officers ( $\beta = .34$ ,  $p < .001$ ) compared to enlisted members ( $\beta = .28$ ,  $p < .001$ ) as well as stronger associations for enlisted members regarding the relationship between PTSD and depression ( $\beta = .45$ ,  $p < .001$ ) and resilience and family coping ( $\beta = .26$ ,  $p < .001$ ) compared to officers ( $\beta = .38$ ,  $p < .001$ ,  $\beta = .21$ ,  $p < .001$  respectively). The model accounted for 11% of the variance in relationship quality, 16% of the variance in parent-child relationship satisfaction and 20% of the variance in family coping.

Mediation analyses were run with the full structural model using bootstrapping techniques. Standardized results of the analysis can be seen in Tables 2 and 3. Consistent with study hypotheses, resilience mediated the relationship between community functioning and

depression ( $\beta = -.09, p < .001, 95\% \text{ CI} = -.09, -.08$ ). However, this was not the case for PTSD ( $\beta = .01, p < .001, 95\% \text{ CI} = .02, .00$ ). Resilience also mediated the relationship between community functioning and all three family outcomes ( $\beta = .07, p < .001, 95\% \text{ CI} = .06, .08$  for family coping;  $\beta = .03, p < .001, 95\% \text{ CI} = .03, .04$  for marital satisfaction; and  $\beta = .05, p < .001, 95\% \text{ CI} = .04, .06$  for parent-child relationship satisfaction). This means that higher levels of community functioning are associated with higher levels of marital satisfaction, family coping, and satisfaction with the parent-child relationship satisfaction through its positive association with resilience. Significant indirect effects from resilience to depressive symptoms to all three family outcomes were found. This included the outcomes of family coping ( $\beta = .05, p < .001, 95\% \text{ CI} = .04, .06$ ), marital satisfaction ( $\beta = .06, p < .001, 95\% \text{ CI} = .04, .06$ ), and to parent-child relationship satisfaction ( $\beta = .05, p < .001, 95\% \text{ CI} = .04, .06$ ). This indicates that depression significantly mediated the relationship between resilience and family outcomes. Similar findings were found for the indirect effect from community functioning, to depression, to all three family outcomes. Direct effects from community functioning to the family outcomes remained after accounting for indirect effects. This indicates that community functioning is associated with service members' reports of family coping, parent-child satisfaction and marital satisfaction both directly and indirectly, through their associations with psychological resilience and depression.

### **Validation Analyses and Alternative Models**

To test the model with the validation sample, a multi-group analysis was conducted in which the model was estimated across the development sample and the validations sample. Path coefficients and factor loadings were freely estimated across groups and then constrained. Both the constrained and free models indicated acceptable model fit. The chi-square difference test revealed no difference between the models ( $\chi^2_{\text{SB}}(34) = 28.169, \text{ns}$ ). Imposing these constraints

did not significantly worsen the model supporting cross-validation of the model with the second half of the sample.

Due to the cross-sectional nature of the data, an alternative model was computed in which family outcomes were specified to predict psychopathology and psychological resilience with the assumption that it is equally plausible that relationship quality or family coping could impact levels of depression or improve resilience. The Aikaike Information Criterion (AIC) was examined to determine if the alternative model indicated a more parsimonious fit. This fit index is often examined when comparing nonhierarchical models (Kline, 2011). The original hypothesized model yielded a smaller AIC (AIC= 809171) than the alternative model (AIC = 821851.323) indicating it is the model more likely to replicate across samples. A second alternative model was examined in which both family outcomes and psychopathology were specified to mediate the relationship between community functioning and resilience. This model yielded a significantly poorer model fit in which fit indices did not meet cut off criteria and the AIC was larger than the originally hypothesized model (AIC = 819433.673).

## Chapter 5 - Discussion

Using the Community Capacity Model, the current study examined how perceptions of community functioning among active duty Air Force service members are directly associated with three family outcomes (marital satisfaction, parent-child relationship satisfaction, and family coping) and indirectly associated with family outcomes through psychological resilience, PTSD, and depressive symptoms. The study tested for moderation of these relationships by gender and rank. Overall, active duty Air Force service members who reported strong community functioning (greater satisfaction with community resources and community relationships), reported higher levels of resilience, lower levels of both PTSD and depressive symptoms, and in turn, reported more satisfaction with family relationships (spouse and children), and greater confidence in their family's coping ability. These relationships remained significant even after the model accounted for age, number of children, length of marriage, location of housing, whether or not the family was on assignment with the service member, and number of years in the service.

Moderation tests were supported for rank but not for gender, meaning differences among relationships in the model existed based on pay grade but not by gender. For rank, the relationship between community functioning and psychological resilience was stronger for those who classified themselves as O1 and higher (officer) than those who reported a pay grade of E9 or lower (enlisted). While there was a significant positive association between community functioning and resilience in both groups, results indicated this relationship is strong among officers. Two factors likely contribute to the finding that the association between community functioning and resilience is stronger for officers than for enlisted airmen. First, it is established that community involvement leads to greater levels of resilience (Meredith et al, 2011). Officers,

due to the nature of their public position may have more engagement with the larger Air Force and civilian community, providing them deeper and potentially stronger community ties.

Enlisted airmen may have fewer opportunities to engage with the larger Air Force and civilian community and they may be more hesitant to completely engage in activities outside of work where their leaders are involved (Johnson, et al 2007). Second, higher pay grade is associated with more ease at making connections within the community compared to members with lower rank status (Bowen, Martin, Mancini, & Nelson, 2001). Not only are these members likely to be more familiar with the Air Force community and feel at ease in this community setting but they are also more likely to seek out and maintain these social relationships during times of heightened stress.

A second difference between rank was found in the relationship between psychological resilience and family coping. Although airmen who reported higher levels of psychological resilience were more likely to report higher levels of family coping (the belief that their family could tackle problems, work as a team, and keep a positive outlook), there appeared to be a stronger association between these variables for enlisted service members than for officers. One potential explanation could lie in the differential level of community connection and economic status between officers and enlisted airmen. Officers tend to have higher levels of economic status, greater education, and larger community networks. Therefore, it could be that officers' perceptions of their family's coping level are less tied to their own personal well-being than enlisted airmen. Current empirical research and theory do not provide ready explanations for this particular finding, though overall, psychological resilience is positively associated with family coping for both officers and enlisted airmen.

Finally, a stronger positive association between PTSD and depression was found for enlisted members compared to officers. Mentioned previously, lower rank has been found to be correlated with more reports of depression (Riddle, et al, 2008) and greater psychiatric difficulties (Fiedler et al, 2006). Consequently, the strong negative association between resilience and mental health found in this study combined with previous findings that lower rank is more likely to report more mental health difficulties, point to the importance of building resilience in enlisted level service members and providing more support for accessing mental health services. The findings for rank support this statement and demonstrate some of the different ways in which resilience could function according to pay grade. Rank was not found to moderate the relationships between community functioning and family outcomes which are supported by prior findings (Bowen et al, 2004). This is important as it generalizes the community factors tested in this study to be important to the well-being of all Air Force families. The fact that moderation was not supported for gender is surprising considering previous support documenting the gender difference between psychopathology and family variables. Much of the gender differences that have been examined are in the context of PTSD. In this study, PTSD was not a salient factor for the model, so this could explain the reason for the lack of findings for gender.

PTSD did not contribute to explanatory power of the model with regard to family outcomes. This is contrary to previous findings in which PTSD is linked to problems with both the marital relationship and the parent-child relationship (Nelson Goff et al, 2007; Taft et al, 2008). One potential explanation is the difference in measurement for PTSD in this study than in previous studies. Previous studies measure PTSD using scales with more items to account for those symptoms. In this study, PTSD was examined using a screening instrument that consisted of four items in which participants were asked to answer “yes or no”. This potentially takes away

the ability to be sensitive to variance across symptoms; something previous studies have shown to be important when studying PTSD and the family (Samper et al, 2004; Taft et al, 2008). This lack of variance was demonstrated in this sample as less than 10% reported yes to each of the four items indicating that overall, the sample did not report high levels of PTSD. Secondly, the association between resilience and depression was stronger than that of resilience and PTSD indicating the possibility that more variance is explained by the construct of depression. PTSD, however, was associated with community functioning and resilience both directly and indirectly further solidifying the importance of these two constructs in the context of military life.

Additionally, psychological resilience mediated the relationship between community functioning and depressive symptoms and depressive symptoms also served as a mediator between several relationships in the model. Though depressive symptoms had moderate to strong associations with family outcomes, direct effects still held up after accounting for indirect effects. This further supports and clarifies the tenets of the Community Capacity Model in which community functioning uniquely impacts both individual and family outcomes.

Depressive symptoms were negatively associated with all three family outcomes. It is known that depressive symptoms impact relationship quality and partners with depressive symptoms tend to report lower levels of relationship satisfaction (Whisman, 2001). In the current study, the relationship between depressive symptoms and marital satisfaction had the strongest association compared to the other family factors. One potential explanation for this relationship is the way in which depression is linked to greater reports of relationship uncertainty, meaning military service members suffering from depressive symptoms might be more unsure about the nature of their relationships which may reduce relationship satisfaction (Knobloch & Theiss, 2011). Therefore, it is likely that those who do not report high levels of depressive symptoms



have less uncertainty in their relationships and report greater levels of marital satisfaction. Similar explanations are true for satisfaction with the parent-child relationship. Soldiers who reported higher levels of depression also reported feeling discomfort in their home and saw their children as less warm (Sayers et al, 2009). The service members in the current study who reported a lower number of depressive symptoms reported more satisfaction with family relationships.

Finally, this study revealed psychological resilience as a salient mediator and important target for intervention, not only for individual mental health but for family factors as well. Overall, effect sizes for resilience and family outcomes were larger than those for depression and family outcomes revealing the importance of resilience within the family context. The relationship between resilience and family coping is of particular interest given the large effect size ( $r = .64$ ) of this relationship. Airmen who identify as having high levels of psychological resilience also perceive their family members as being able to handle conflict and work together as a team. Explanations in the literature for the mediating role of resilience with PTSD have proposed that resilience's connection to task oriented coping, or dealing with challenges directly, allows individuals with higher levels of resilience to be active in coping rather than engaging in emotional disengagement, avoidance and behavioral withdrawal (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). This seems to be relevant to family outcomes as well, in particular family coping. If those with higher levels of resilience are more likely to take an active coping stance with PTSD, then they would also be likely to extend this coping style to other challenges in their life including family challenges. Service members are then more likely to confront family challenges head on rather than engage in behavioral withdrawal and emotional disengagement from these relationships thus maintaining their satisfaction with family

relationships and the perception that their family can successfully handle challenges. Positive associations were also found for marital satisfaction and satisfaction with the parent-child relationship. Resilience is important for families undergoing stress or exposure to change (Walsh, 2007) and is seen as an important factor for military duty (Meredith et al, 2011). This demonstrates how psychological resilience can be related to family life.

This study supports the usefulness of the Community Capacity Model and demonstrates the benefit of community on both mental health and family life for active duty service members. Previous work with the community capacity model identifies only a general connection between community functioning and individual and family outcomes. While an important addition to the work on supporting military members and their families, the current study provides several specific pathways through which community functioning is linked to individual and family outcomes. In particular, this study further clarified that community functioning is directly associated with both individual and family outcomes, and that community functioning is also important to family outcomes through its connection with factors within the individual airman (depression, resilience). While results indicated more parsimony for the model in which psychopathology was examined as a mediator, opportunities for longitudinal studies are needed with this model to continue teasing out the way these relationships function together.

### **Clinical Implications**

Findings from this study point to implications for potential areas of prevention and intervention in active duty Air Force service members. The findings suggest that service members who report high satisfaction with their community also reported high levels of resilience and low levels of depression and PTSD symptoms and in turn reported greater satisfaction with family relationships. Prevention efforts targeted toward strengthening

community functioning could be important to improving service member mental health by increasing resilience and decreasing incidence of psychopathology as well as building family relationships. It has been previously noted that an increased focus on the community in which service members are embedded is important for practitioners who traditionally target individual psychopathology or family relationships (Bowen et al, 2003). Community contexts are a valuable tool for practitioners who are working with service members and their families. When addressing the mental health needs of an active duty airman, assessment of the service member's satisfaction with and connection to community supports is a way to gather more information about potential avenues for strengthening mental health and family relationships. Interventions targeted at building psychological resilience can be useful given its potential to decrease psychopathology and strengthen quality family relationships particularly with active duty service members.

### **Future Research and Limitations**

Future investigations using more concrete observations of community functioning is justified. Significant effort is employed to build communities and develop programs for service members and their families. Information targeting how much involvement is needed to support resilience and increase individual and family adjustment is warranted. Additionally, future research examining these relationships across different groups including duty status, other military branches and spouses of services members is warranted. For example, reserve members are involved in communities that are different than those of active duty status and therefore community may have a different impact on their well-being. There tends to be more isolation from the military community for reserve members who often are embedded in the civilian communities in which they work. In this case, when deployment comes and reserve members are

united with their active duty counterparts, unit cohesion may be of more importance for the reserve soldier's mental health outcomes (Vogt, et al. 2008), whereas community cohesion is important for the active duty soldier. This leads to other potential research questions such as how results from the current model may be different depending on how community is defined. For example, this study did not include extended family support or other geographically varying community constructs that might make a difference to the service member. Examining these differences is important to determine how communities can be strengthened depending on the needs of the different groups. Longitudinal tests of the model are necessary to determine temporal ordering of the relationships to provide a more cohesive assessment of the model as well as to find specific prevention targets. Previous studies indicate variation in the development and progression of PTSD and depression in injured soldiers across time (Grieger, Cozza, Ursano, Hoge, Martinez, Engel, & Wain, 2006). More research is needed to examine how prevalence varies between the two across time. Finally, examining the model in the context of other factors that contribute to the variation in resilience, psychopathology, and family outcomes would help expand the model and provide information on other important pieces needed to promote strong military families. For example, application of the model using other important outcomes such as divorce, domestic violence, and suicidality is needed to examine how the model can be useful in understanding other factors connected to service member well-being and adjustment. In addition, personality factors such as neuroticism, extraversion, and openness to new experiences could influence service member's psychopathology risk, their perception of community functioning as well as their level of engagement with the community (Cambell-Sills, Cohan, & Stein, 2006). Including these along with other factors are also important to strengthen the explanatory power of the model. Currently the model accounts for limited variability among the targeted

family outcomes. Including constructs such as level of financial distress, time spent with family, and involvement in mental health services could all be important factors to include in future models.

While this study adds several pieces to current literature, there are some limitations to how the results can be interpreted. First, the study involves cross sectional data in which causal assumptions cannot be made. The directions of effects are hypothesized based on theory and previous research. Community functioning might actually increase resilience, lower rates of depression and PTSD, and in turn strengthen family relationships, but it is important to note that these effects are likely to be bidirectional. Second, the model was tested using service members' self report. When examining mental health, perceptions may be skewed due to the likelihood that someone reporting higher symptoms of depression will report decreased satisfaction in other areas of life and shared variance of these reports cannot be tested. Additionally, the model did not account for previous history of mental health problems and family relationship problems which is likely to have an impact on the way in which members answered items on the measures examined in the current study. Results from this study may not be applicable across other military branches or among civilian samples.

## **Conclusion**

This is the first study to simultaneously examine the association of community on both individual and family factors for active duty service members. Depression and resilience mediated the relationship between community functioning and family coping, relationship satisfaction, and parent-child relationship satisfaction. The association from community functioning remained for all study variables after accounting for indirect effects supporting the tenets of the Community Capacity Model. Findings point to important factors that are associated

with the well being of active duty air force service members and their families. Findings also contribute to the process of identifying a theoretical model that points to potential areas of intervention that are needed to continue strengthening military families.

Figure 1. Adapted from Community Capacity Model, Huebner et al (2009).

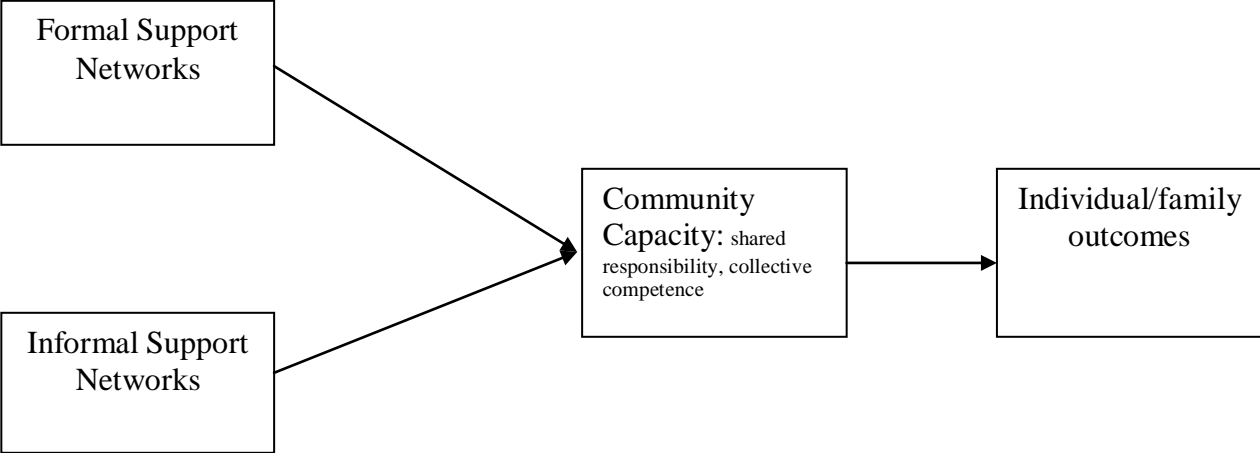


Figure 2. Hypothesized Model of Individual and Contextual Factors That Influence Family Outcomes for Active Duty Personnel

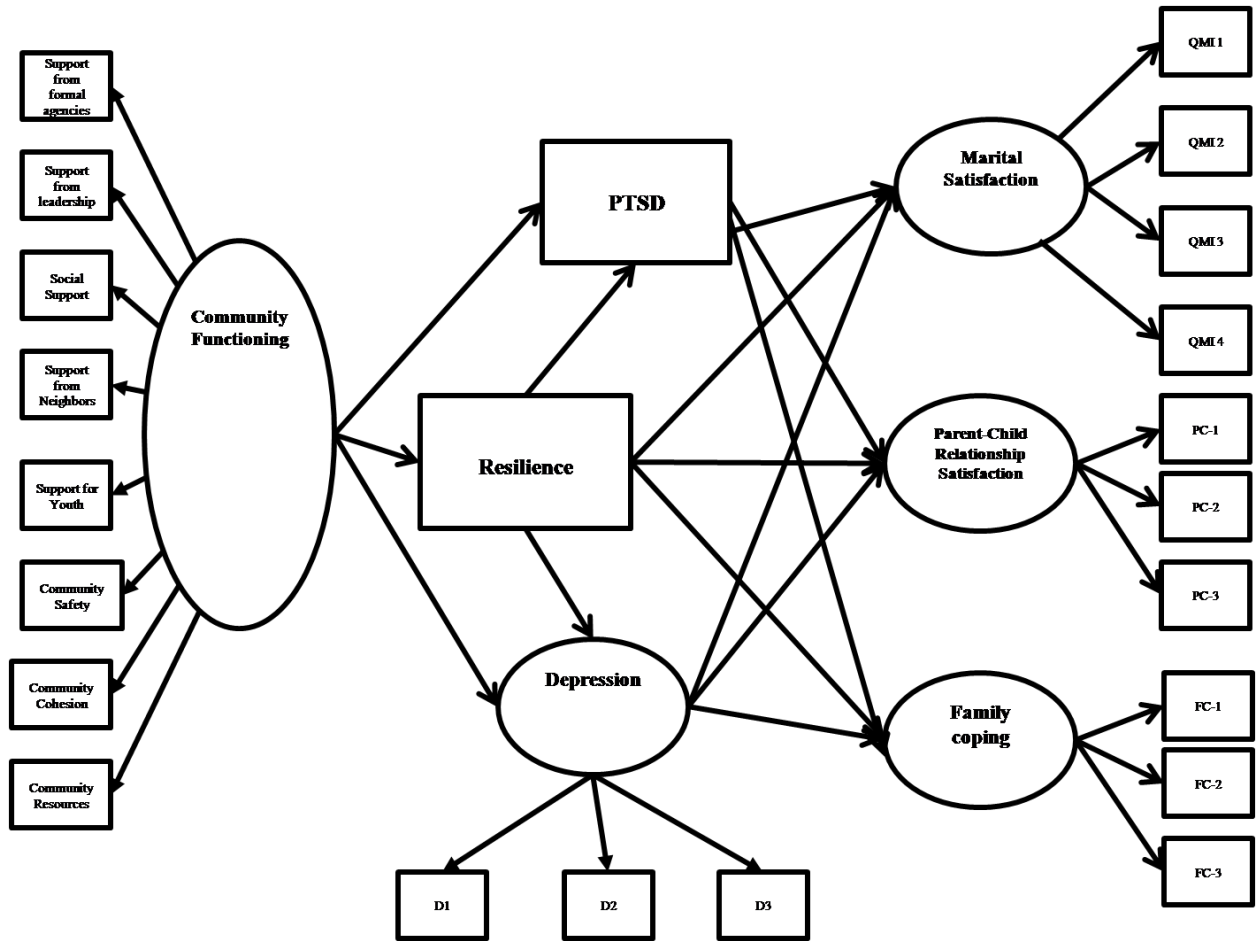
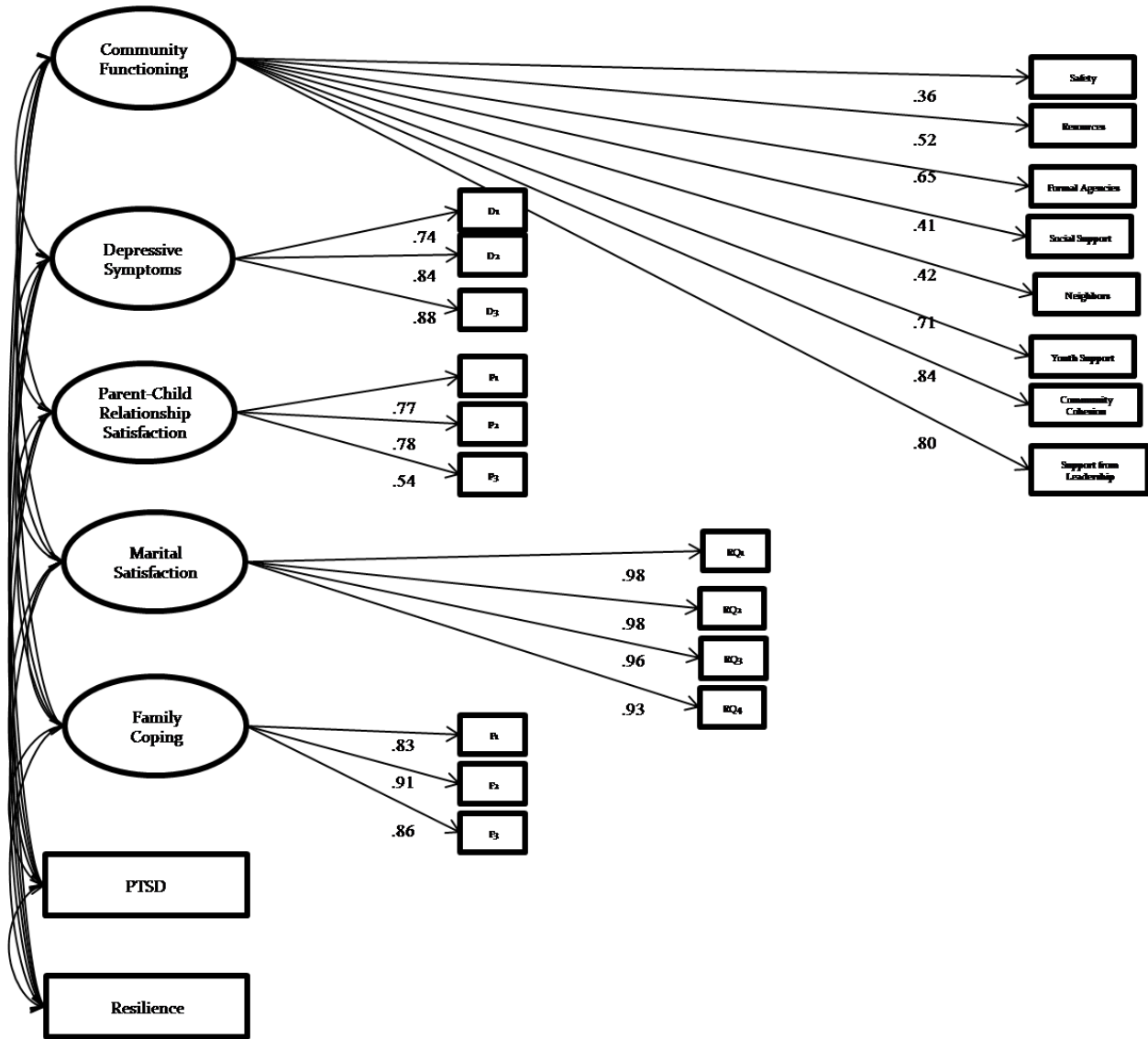


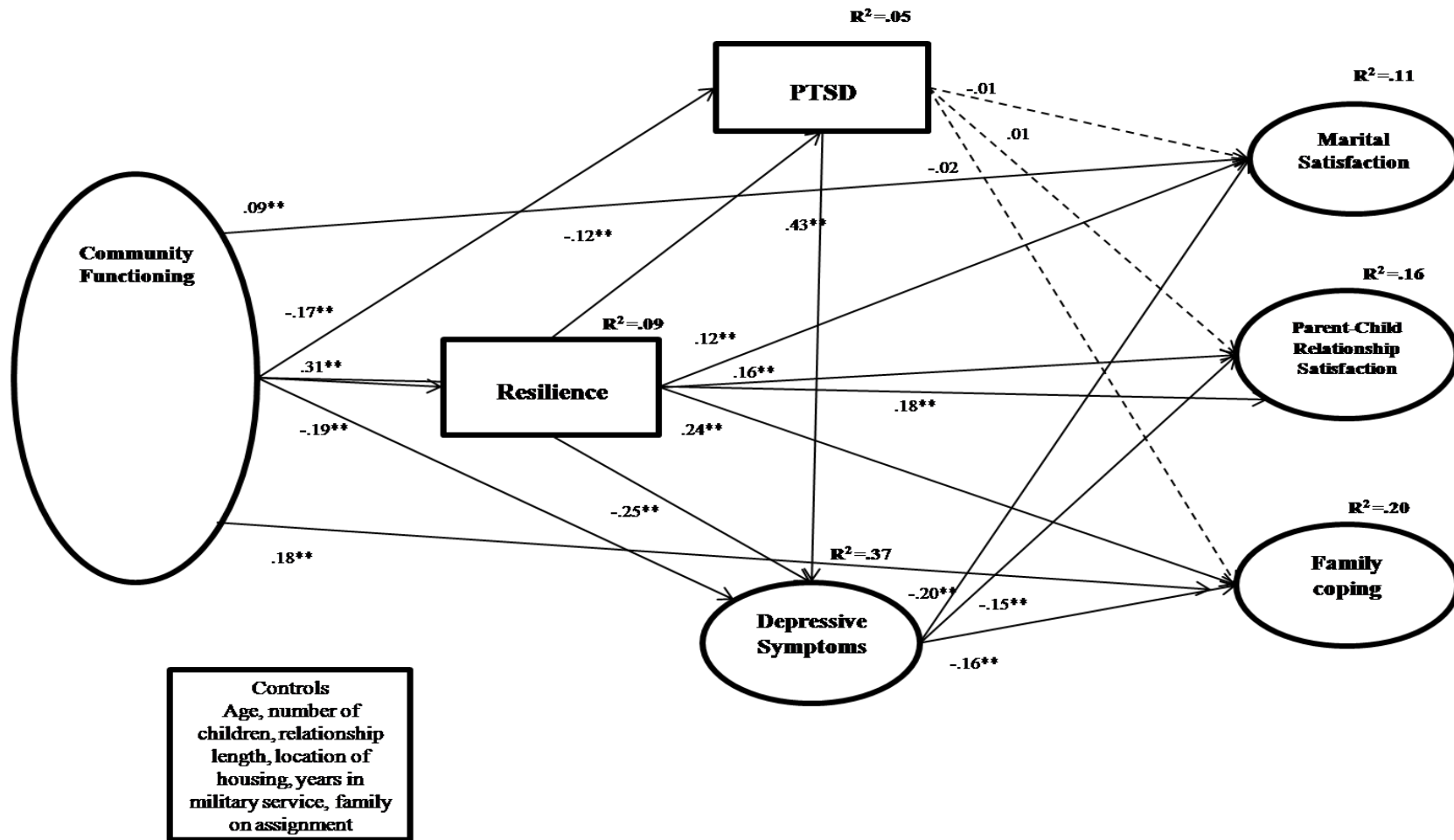


Figure 3. Confirmatory Factor Analysis Among Latent Variables



Note. Model Fit Indices  $\chi^2(211) = 2117.110$ , (RMSEA) = .026, (90% CI = .025, .027), (CFI) = .971; (TLI) = .965.

Figure 4. Full Structural Model of Individual and Contextual Factors That Influence Family Outcomes for Active Duty Personnel



Note. Model Fit Indices for structural model  $\chi^2(291) = 2889.740$ , RMSEA = .026 (90% CI = .025 .027), CFI = .964; TLI = .954. \* $p < .05$ , \*\* $p < .001$ .

Table 1. Correlation Matrix for Latent and Observed Variables

Variables	1	2	3	4	5	6	7
1 Comm. Functioning	--						
2 Resilience	.31*	--					
3 PTSD	-.20*	-.17*	--				
4 Depression	-.34*	-.36*	.51*	--			
5 Family Coping	.31*	.36*	-.18*	-.33*	--		
6 Marital Satisfaction	.20*	.23*	-.16*	-.29*	.66*	--	
7 Parent-Child Satisfaction	.27*	.27*	-.14*	-.27*	.48*	.30*	--

Note. Development Sample \*p < .001.

Table 2. Mediating Effects with Community Functioning and Resilience as Independent Variables, Psychopathology as Mediators and Family Coping, Parent-Child Relationship Satisfaction, and Marital Satisfaction as Outcomes. Bootstrap Analysis of the Magnitude and Significance of Mediating Pathways (Standardized Solution;  $N = 13,072$ )

Predictor	Mediator	Outcome	$\beta$	CI	$t$ -value
Resilience →	Depression→	Family Coping	.05*	.04, .06	10.23
Resilience →	Depression→	Parent Satisfaction	.05*	.04, .06	9.084
Resilience →	Depression→	Marital Satisfaction	.06*	.05, .07	12.56
Resilience →	PTSD→	Family Coping	.00	.00, .01	0.631
Resilience →	PTSD→	Parent Satisfaction	.00	.00, .01	1.00
Resilience →	PTSD→	Marital Satisfaction	.00	-.00, .00	-0.785
Community→	Depression→	Family Coping	.05*	.04, .05	10.01
Community→	Depression→	Parent Satisfaction	.05*	.04, .06	8.650
Community→	Depression→	Marital Satisfaction	.06*	.05, .06	12.80
Community→	PTSD→	Family Coping	.00	-.01, .00	-0.602
Community →	PTSD→	Parent Satisfaction	-.01	-.00, .00	-1.201
Community→	PTSD→	Marital Satisfaction	.00	-.00, .00	0.817

*Note.* Development sample. \* $p < .001$ , (two-tailed). Indirect paths tested with 2,000 bootstraps. CI= 95% confidence interval.

Table 3. Mediating Effects with Community Functioning as Independent Variables, Resilience as Mediators and Psychopathology, Family Coping, Parent-Child Relationship Satisfaction, and Marital Satisfaction as Outcomes. Bootstrap Analysis of the Magnitude and Significance of Mediating Pathways (Standardized Solution;  $N = 13,072$ )

Predictor	Mediator	Outcome	$\beta$	CI	$t$ -value
Community →	Resilience →	Depression	-.09*	-.09, -.08	-24.90
Community →	Resilience →	PTSD	.01*	.004, .02	3.52
Community →	Resilience →	Family Coping	.07*	.06, .07	18.20
Community →	Resilience →	Parent Satisfaction	.05*	.04, .06	12.66
Community →	Resilience →	Marital Satisfaction	.03*	.03, .04	9.77

Note. Development sample. \* $p < .001$ , (two-tailed). Indirect paths tested with 2,000 bootstraps. CI= 95% confidence interval.

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