
The Impact of Deployment on U.S. Military Families

Sean C. Sheppard, Jennifer Weil Malatras, and Allen C. Israel
University at Albany—State University of New York

Several recent articles have explored the effects of military deployment on U.S. service members' mental health outcomes. Although increased attention has also begun to focus on the effects of deployment on military families, providing a conceptualization for the mechanisms of this process can help organize existing information and inform future efforts. In this article we seek to draw greater attention to the effects of deployment on service members and to provide an overview of recent literature on the impact of deployment on service members and military families. A further goal is then to provide one conceptual perspective—a model of family stability—that may help inform our understanding of the impact of military deployment on families. Beyond informing research, the issues presented in this article have far-reaching consequences not only for American military families and their current mental health and primary care providers but also for practitioners in the broader mental health community who will be increasingly called upon to provide services to this population.

Keywords: military deployment, family stability, child outcomes, family outcomes

As the United States approaches a decade of involvement in conflicts in Iraq and Afghanistan, a diverse group of organizations including, but not limited to, the Department of Defense (DoD), the Department of Veterans Affairs (VA), and the American Psychological Association (APA) have demonstrated increasing interest in and concern for the potential effects of military deployment on American service members and their families. This concern has resulted in the formation of several task forces charged with exploring the mental health needs of service members and their families (e.g., APA Presidential Task Force on Military Deployment Services for Youth, Families, and Service Members, 2007; U.S. DoD Task Force on Mental Health, 2007). In addition, an expanding body of literature has developed spanning topics from the mental health outcomes of service members to the difficulties experienced by family members (e.g., Dirkzwager, Bramsen, Adèr, & van der Ploeg, 2005; Hoge et al., 2004). As reports have begun to document the effects of military deployment on service members, attention has begun to also focus on the potential impact of deployment on children (e.g., Castro, Adler, & Britt, 2006; Lincoln, Swift, & Shorteno-Fraser, 2008).

Since the start of the conflicts in Iraq and Afghanistan, often referred to as the Global War on Terror, over two million children have been directly affected by the

deployment of a parent (Chartrand, Frank, White, & Shope, 2008). As Chartrand and Spiegel (2007) have noted, there is growing concern about how the current conflicts and associated deployments may affect the long-term social, emotional, and behavioral outcomes of children in military families. Despite this concern, there are few recent empirical investigations that examine the effects of deployment on children and families. Similarly, theoretical and review articles seem to rely almost entirely on data and findings from past conflicts and their associated deployments. Although findings from previous conflicts may inform our understanding of the effects of deployment in general, inferences from previous research may not generalize to the current global conflict or sufficiently account for the unique characteristics of today's military families.

Given the aforementioned issues, in the present article we review emerging information regarding the nature and effects of deployment on service members and their families. In addition, we offer one possible conceptual perspective—a model of family stability—that may assist in understanding the effects of military deployment on families and may inform the development of prevention and treatment initiatives. Finally, using the unique characteristics of the rapidly changing military structure and current conflicts as a framework and guide, we offer suggestions for future research.

For the sake of clarity and precision, it seems appropriate to take a moment to define terms used throughout the literature and this article. *Service member* refers to a member of any branch of the U.S. military (Army, Air Force, Navy, Marines). Unless a specific distinction is made, *service member* encompasses all categories of duty status (e.g., active component, reserve component, National Guard). In accordance with the guidelines of the APA Presidential Task Force on Military Deployment Services for Youth, Families, and Service Members (2007), *family*

Sean C. Sheppard, Jennifer Weil Malatras, and Allen C. Israel, Department of Psychology, University at Albany—State University of New York.

In addition to his work as a doctoral student, Sean C. Sheppard is a Medical Service Corps Officer in the U.S. Army and a paid consultant for the Research to Improve Emotional Health and Quality of Life Among Service Members With Disabilities (RESTORE LIVES) Center. The views of the authors do not necessarily reflect those of the Department of the Army, the Department of Defense (Paragraph 4-3, AR 360-5), or the RESTORE LIVES Center.

Correspondence concerning this article should be addressed to Sean C. Sheppard, Department of Psychology, SS 369, 1400 Washington Avenue, Albany, NY 12222. E-mail: ss586385@albany.edu



Sean C. Sheppard

refers to traditional and nontraditional families (e.g., binuclear families), and *spouse* refers to a partner in a committed relationship with a service member. Although the term *spouse* is used for both, a married spouse and a partner in a committed relationship with a service member may differ in terms of access to benefits, services, and activities. Finally, *child outcome* refers to a broad array of domains, including psychological and social functioning, academic performance, and child maltreatment.

Impact of Deployment on Service Members: Preliminary Research on the Current Conflicts

In terms of manpower utilization and multiple deployments, the current U.S. military is considerably strained. To get a sense of the scope of the issue, consider the following statistics. Since September 11, 2001, American service members have deployed nearly 3.3 million times to a combat zone. This number reflects the fact that over 2 million individual service members have deployed to Afghanistan or Iraq, with nearly 800,000 deploying multiple times (Tan, 2009). This unprecedented multiple deployment rate coincides with a significant decrease in the size of the military over the past 25 years. More than 4,800 service members have been killed in action, and over 33,000 have been wounded (U.S. DoD, DoD Personnel & Procurement Statistics, 2009). Although military deployment is not a novel research area, several unique aspects of the current conflicts have led researchers to begin a series of seminal descriptive studies re-examining the effect of deployments on service members' mental health (e.g., Hoge, Auchterlonie, & Milliken, 2006; Hoge et al., 2004). These studies are noteworthy in terms of their scope and impact on policy

development; however, several authors have noted methodological concerns, including the use of screening inventories to measure prevalence rates of psychopathology (for a recent review see Karney, Ramchand, Osilla, Caldarone, & Burns, 2008).

Several findings from these studies are worth highlighting insofar as they speak to the potential long-term impact of deployment on the well-being of service members and their families. Hoge and colleagues (2004) presented cross-sectional descriptive data as part of the first phase of a longitudinal study designed to examine mental health outcomes of over 5,000 service members deployed to Iraq and Afghanistan from 2003 to 2004. They found significant postdeployment increases in the percentage of individuals who met screening criteria for symptoms of depression, anxiety, and, most dramatically, posttraumatic stress. More than 17% of participants met screening criteria for posttraumatic stress, and the authors noted a nearly linear relationship between symptoms and number of fire-fights (i.e., direct combat exposure). This dose-response (i.e., combat-mental health problem) relationship may have considerable implications for mental health outcomes in the context of multiple deployments. Last, the authors found that only 23% to 40% of individuals who screened positive for a psychological disorder sought mental health-care services. This finding highlights the challenges facing mental health care delivery in the military.

A follow-up population-based study by Hoge and colleagues (2006) examined rates of mental health problems, health-care utilization, and attrition from military service in over 300,000 service members deployed to Iraq or Afghanistan in 2003-2004. In terms of mental health problems, the authors noted results similar to those of the previous study, including the dose-response relationship of combat exposure and psychological problems. The authors found an increased rate of mental health-care utilization relative to the previous study and also that individuals with a psychological problem were significantly more likely to have left military service in the year following deployment. These findings suggest not only that military mental health care has the potential to become overburdened but also that the responsibility of providing mental health care may be shifting to the civilian sector.

Grieger and colleagues (2006) examined predictors of posttraumatic stress disorder (PTSD) and depression in a sample of 613 severely injured Army soldiers. In addition to finding approximately similar rates of PTSD and depression symptomatology as in the two studies mentioned earlier, the authors found that married soldiers were 3.1 times more likely than single soldiers to meet PTSD criteria and 2.7 times more likely to meet criteria for depression at one month after injury. After controlling for other relevant variables, they further found that, at the seven-month mark, severity of physical injury better predicted both PTSD and depression than did combat severity or deployment length. What makes this last finding particularly salient is that the current conflicts have produced an unusually high number of severely injured service members. Gawande (2004) found that improvements in medical technology in the



**Jennifer Weil
Malatras**

current conflicts have resulted in the highest casualty survival rates (currently 90%) in the history of U.S. conflicts. Although this translates to fewer killed in action, it also increases the number of severely wounded individuals needing ongoing care and support from families. In the end, the overall prevalence of psychological problems might be expected to increase in light of data that suggest severity of physical injury as a strong predictor of psychological difficulties.

These studies suggest potential similarities between other recent conflicts (e.g., Vietnam, Operation Desert Storm) and current military operations in terms of the initial prevalence rates of psychological problems in returning combat veterans. However, current findings are based on service members deployed only once, which may not reflect the experience of many service members today. Although preliminary in nature, the data on service members with multiple deployments give cause for concern. One recent report found that soldiers who were deployed three or four times were at increased risk for behavioral health problems including anxiety, depression, alcohol use, and acute stress (U.S. Army Surgeon General, 2008). In a recent study using a sample of nearly 300,000 veterans from the current conflicts, Seal and colleagues (2009) found that 36.9% of veterans received a mental health diagnosis, 21.8% were diagnosed with PTSD, and 17.4% were diagnosed with depression. Furthermore, Seal et al. indicated that greater combat exposure was related to PTSD. Given the observed relationship between combat exposure and trauma symptoms, one could reasonably suspect that these rates might climb as further outcome data become available on service members with multiple deployments. It is, of course, important to appreciate the influence of preexisting adjustment on the likely effects of combat exposure.

In terms of health-care utilization and attrition, these findings point to the challenges facing mental health-care delivery in the military, VA, and civilian sector. As more service members depart the military, current discussions about how to resolve the civilian health-care crisis become more complex as well, particularly in the context of the global financial crisis. Additional service needs may arise with increased survival of service members with serious injuries and associated risk for psychological problems. Furthermore, there may be additional implications for these service members' families. These findings highlight not only some of the unique characteristics of the current conflicts but also the potential mental health-care crisis facing military families and the nation. It also serves as a starting point for thinking about how deployment may affect child and family outcomes.

Military Deployment and Child Outcomes

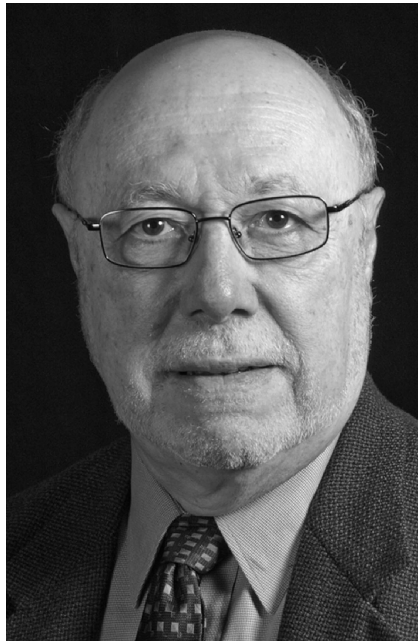
An examination of the literature regarding military deployment and its effects on children makes clear that there is a paucity of recent empirical research, in general, and that further elaboration of existing knowledge is warranted. Existing research has explored the effect of military deployment on child maltreatment, academic functioning, and mental health and behavior.

Much of the research on maltreatment has focused on general rates within the military without explicitly considering the impact of deployment (e.g., Dubanoski & McIntosh, 1984; Raiha & Soma, 1997). To our knowledge, three studies have been conducted since the beginning of the wars in Iraq and Afghanistan that have explicitly examined deployment in terms of its effect on child maltreatment (Gibbs, Martin, Kupper, & Johnson, 2007; McCarroll, Ursano, Fan, & Newby, 2008; Rentz et al., 2007).

Gibbs and colleagues (2007) utilized the Army Central Registry database to examine the relationship between deployment and substantiated incidents of child maltreatment. A total of 1,771 families were identified as having both a deployed soldier and an incidence of substantiated child maltreatment. The authors found that the overall rate of child maltreatment was 42% greater during deployment than during nondeployment. They further found that the rates of moderate or severe maltreatment were significantly elevated during deployment and that the rate of neglect nearly doubled.

McCarroll and colleagues (2008) used the Central Registry database to examine maltreatment trends in the Army from 1990 to 2004. Overall rates of child maltreatment in military families decreased from 1991 to 2000 but by 2004 had reached levels similar to those seen in 1991. Also, during two periods of heavy deployment (Operation Desert Storm and the current conflicts), rates of child maltreatment increased. Similar to findings of Gibbs and colleagues (2007), rates of neglect accounted for most of the increase.

In an innovative study, Rentz and colleagues (2007) conducted a time-series analysis of child maltreatment data



Allen C. Israel

collected in the state of Texas from 2000 to 2003 to compare the rates in military and civilian samples. Of note, early in this time period, military rates of child maltreatment were lower than civilian rates. By the end of 2002 and the initiation of the war in Afghanistan, the rate of substantiated child maltreatment in the military had doubled from the initial measurement point. Furthermore, by 2003 and the initiation of the Iraq conflict, the rate had more than doubled again, rising above civilian rates. The rates of civilian child maltreatment remained stable over the entire period. Although these findings provide evidence that military life may provide a protective influence, they also highlight the potential magnitude of impact military conflict and deployment may have on families.

Research conducted over the course of the last several decades on academic functioning, although relatively limited, has provided mixed findings with regard to the effect of deployment. Generally speaking, most studies conducted prior to the current conflicts found either slight decreases or negligible impact of deployment on academic outcomes (e.g., Hillenbrand, 1976; Rosen, Teitelbaum, & Westhuis, 1993). Only two studies conducted since the beginning of the current conflicts in Iraq and Afghanistan were identified as demonstrating a negative effect. Engel, Gallagher, and Lyle (2010) found significant decreases in test scores across most subject areas for children of deployed parents. They also reported that lower test scores were associated with longer deployments as well as with deployments that occurred during the month of test administration. They further noted that the effect sizes were small, with the largest effects seen for the subjects of math and science and smaller effect sizes seen for language, arts, social studies, and reading (Engel et al., 2010). In a separate study, Lyle (2006) similarly found that deployment

was associated with lower test scores, with the largest effects seen for children who were young, who were from a single-parent home, who had mothers in the Army, and whose parents had lower abilities as measured by the Armed Forces Qualification Test scores. These findings remind us that the potential impact of deployment is embedded in a complex set of influences.

Although there is a substantial body of research demonstrating the impact of military deployments on children's mental health, recent investigations are sparse. In general, research has suggested that deployment is associated with both externalizing problems (e.g., aggressiveness, irritability) and internalizing problems (e.g., crying, sadness, depression, anxiety), but it is challenging to understand if these rates are clinically relevant or markedly different from those of civilian controls (e.g., Jensen, Martin, & Watanabe, 1996; Levai, Kaplan, Ackermann, & Hammock, 1995; Rosen et al., 1993).

Recent investigations appear to be limited to two articles that examined the effects of deployment on child outcomes (Barnes, Davis, & Treiber, 2007; Chartrand et al., 2008). Barnes and colleagues (2007) compared physiological and subjective indices of stress among adolescents from three groups: those with currently deployed military parents, those with military parents who were not deployed, and civilian controls. Youths with a deployed military parent had significantly elevated subjective stress, heart rate, and systolic blood pressure. Though intriguing, these results are not indicative of psychological problems, *per se*, but they do suggest elevated stress levels, which might in turn function as a risk factor for psychological problems.

Chartrand and colleagues (2008) investigated the effect of combat deployment on externalizing and internalizing behavior problems in children five years of age or younger. Importantly, the authors used multiple informants and controlled for a variety of relevant variables, including maternal psychopathology. They found, relative to age-matched controls, that three- to five-year-old children with deployed parents had significant and clinically elevated externalizing scores. This study is compelling in part due to the rigor of its design and partially to the fact that the authors controlled for relevant and potentially confounding variables. Notably, the service member parents in this study were deployed for less than four months, on average, and longer deployments might be hypothesized to increase the effects seen in this sample.

As noted previously, some service members will deploy to a combat zone and develop PTSD subsequent to returning home. Others will experience some degree of posttraumatic stress symptoms (PTSS), even if these do not develop into a diagnosable disorder (e.g., PTSD). Although it is duly noted that most will return home free from either, rates of PTSS as high as 14% (Tanielian & Jaycox, 2008) have prompted researchers to explore the effects of service member PTSS on child outcomes.

One way to examine the effect of service members' PTSS on child outcomes is simply to measure the rate of behavioral problems in children who have a parent with PTSS or PTSD. Several researchers have done so with

Vietnam-era service members (e.g., Caselli & Motta, 1995; Davidson, Smith, & Kudler, 1989). Results from these studies support the notion that posttraumatic symptomatology in service members is associated with child psychological difficulties. Regarding the specific outcome of child PTSS in offspring of service members, no empirical evidence exists. However, higher rates of PTSS in spouses of returning service members have been reported (Dirkzwager et al., 2005; Fals-Stewart & Kelley, 2005).

As would be the case for all families, parents' PTSS, like other parental adjustment difficulties, may affect families through a number of mechanisms. Processes such as modeling/imitation, information transmission, and differential reinforcement may be ways in which problematic behaviors, emotions, and cognitions might be transmitted. However, another important way to understand the potential effect of parental psychological adjustment is to examine the effects of PTSS on effective parenting (e.g., Galovski & Lyons, 2004; Ruscio, Weathers, King, & King, 2002). For example, Ruscio and colleagues (2002) found that emotional numbing and other avoidance behavior (but not hyperarousal or re-experiencing) were associated with poorer perceived parenting even after controlling for other variables, including substance use and combat exposure. Across these studies, and similar to other types of parental psychopathology, it seems that at least certain PTSS may negatively affect parenting behavior.

Although the potential implications of findings regarding the impact of deployment and posttraumatic stress seem considerable, there are limited empirical data regarding the impact of current conflicts and recent deployment patterns. It should also be noted, again, that where such research does exist, it has largely been conducted on service members and their families who have experienced only one deployment. Time and future research will ultimately determine whether greater concern regarding multiple deployments is warranted.

The Military Family: Risk and Resiliency Factors

Several authors have noted the shifting military demographics over the past 30 years (e.g., Ender, 2006; Wiens & Boss, 2006). Largely as a result of the history of conscription through the end of the Vietnam War, the majority of the military was comprised of single young men. As the war in Vietnam came to a close, several things occurred. First, the size of the active duty military decreased dramatically (from approximately 3 million to 1.5 million service members). Second, the conscripted military gave way to a military force comprised entirely of volunteers. With this shift came an increase in the diversity and number of married service members. Currently, 71% of officers and 40% of enlisted personnel are married, 42% of all service members have children, and women make up 14% of the total military force (Ender, 2006; Wiens & Boss, 2006).

Ender (2006) noted several potential risk factors commonly experienced by military families. These include physical separation (i.e., deployment), risk of injury or

death to service member parents, geographical mobility, a male-dominated culture, and normative constraints of military life. According to Ender, normative constraints involve features of living on a military base, including the expectation for military-appropriate dress, upkeep of government housing, and obligatory spousal and/or family presence and behavior at military functions. Geographic mobility highlights issues experienced by military families who typically move every two or three years. These issues include the stress of moving, academic disruption for children, and loss of connection with friends and community (Ender, 2006; Lincoln et al., 2008). It is important to note, however, that there may also be positive aspects of geographic mobility, such as opportunity for unique experiences or exposure to different cultures.

With regard to deployment, Wiens and Boss (2006) indicated that families without unit affiliation, as well as young and inexperienced families, are often at risk. Service members who deploy with a unit other than their own (e.g., a military interpreter deploys with a military police unit from a different geographic area) leave behind a family that does not have the same level of unit organizational or community support as a family of a service member deployed with his or her own unit. Wiens and Boss further noted that risk may be increased in National Guard or Reserve units who have been deployed at unprecedented rates and whose families are not collocated on a military base. The risk associated with young and inexperienced families does not seem specific to military families but instead relates to issues such as lower income or less experience dealing with major life stressors in general.

It is important to pause and note that military families are generally resilient, and several authors have explored resiliency factors in the context of military deployments. Palmer (2008) noted several military family-specific resiliency factors, including access to comprehensive health care, education, consistent employment, legal assistance, and a host of on-base organizations specifically created to provide support to families. Wiens and Boss (2006) cited active coping strategies and high levels of community and other social support as important resiliency factors. In addition, flexible gender roles and comfort performing multiple roles may help families tolerate and adapt to the demands brought on by military deployment. These resiliency factors represent an initial articulation of such influences, and future investigations will, we hope, add to this important consideration.

Clearly, variables may function as risk or resiliency factors depending on the individual family or situation. At a minimum, it seems likely that military families must often contend with multiple compounding stressors, but the effects of these risk factors are not uniform. It is important to also note that, due to the lack of availability of more current research in this area, much of the research discussed in this section is based on case reports and older research conducted on military populations that may not resemble the current military population. Several authors have recently concluded that military families are not inherently "at risk" *per se* and may indeed be a healthy and

robust group (Cozza, Chun, & Polo, 2005; Ryan-Wenger, 2001). In one sense, the unique stressors faced by military families may make them a special population but not an at-risk population in general.

The Military Deployment Cycle

Before proceeding to an examination of how family stability may inform our understanding of the ways in which military families may respond to deployment, we pause to define this process. Military deployments can be conceptualized in several different ways and may vary on several important factors. For instance, deployments differ in terms of their purpose (e.g., training, peacekeeping, combat) as well as in the level of danger or risk to service members. Deployments may also vary with respect to the amount of warning or advance notice of a pending deployment. In addition, deployments may differ in terms of their length, with deployments in the current conflicts typically ranging from 6 to 18 months. In addition, although deployment might be considered a distinct event with specific departure and return dates, it is also possible to conceptualize deployment as a process that begins long before the service member steps on a plane and ends some time after he or she returns home. This conceptualization of deployment is similar to notions of other major life changes, such as divorce, and has important implications for understanding its potential effects on child outcomes.

Given the notion of deployment as a process, several stage-based conceptualizations have been described in the literature (Wiens & Boss, 2006). Here we examine the oft-cited cycle of deployment described by Pincus, House, Christenson, and Adler (2001), as it is sensitive to the multiple transitions that occur over the course of a deployment process. Pincus and colleagues described five stages in a military deployment as follows: predeployment, deployment, sustainment, redeployment, and postdeployment. The predeployment stage typically begins when the service member receives notification of an impending deployment. The ensuing time before the actual departure date may be a busy time, with the service member balancing a vastly increased workload as well as family preparations, responsibilities, and reactions. The deployment stage specifically spans the period from the date of departure to the end of the first month of absence and may involve initial adjustments to altered routines and family responsibilities as well as establishing patterns of communication with the departed service member. The sustainment stage lasts from the end of the first month through the beginning of the final month of deployment, during which time new routines may be established. The redeployment home stage is defined as the month preceding the service member's homecoming and is typically characterized by a shift in family activities in preparation for the service member's return. The postdeployment stage begins when the service member arrives home and typically lasts for approximately three to six months. During this stage, families often face the tasks of renegotiating roles and areas of responsibility and establishing new routines (Pincus et al., 2001).

It is important to bear in mind that this description of stages is simply a heuristic device used to facilitate thinking about deployment and may not accurately capture the experience of all families. Although Pincus and colleagues (2001) utilized this conceptualization to discuss the emotional impact of deployment, we consider it useful to employ their stage descriptions to help articulate the dynamic functional challenges faced by military families over time. Defining deployment as a process that potentially begins before the service member departs and continues beyond his or her return allows one to consider the multiple influences deployment may have on family life.

Family Stability: A Conceptual Model for Understanding the Effects of Deployment on Children

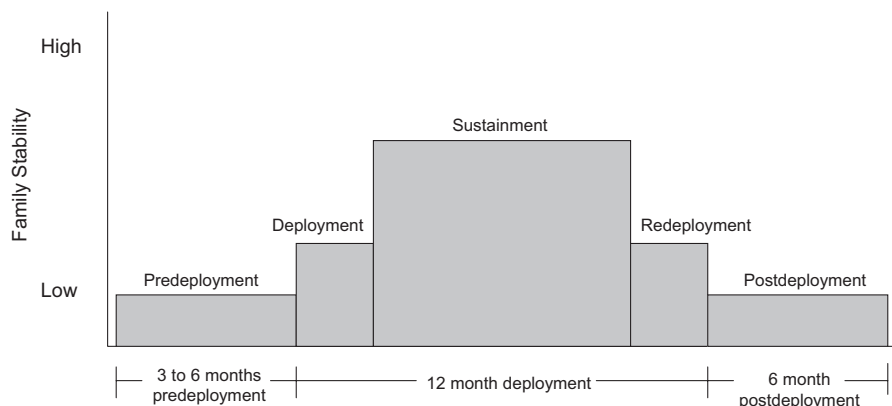
Several authors have presented broad conceptualizations to aid in understanding the effects of military life on families (e.g., Palmer, 2008). The general notion is that risk and resiliency factors interact and influence parent-child relationships and interactions, thereby indirectly influencing child outcomes. A key strength of these conceptualizations rests in their depiction of the likely indirect ways in which aspects of military life may influence child outcomes. However, the utility of the conceptualizations for understanding the specific effects of deployment on children may be limited given the unique and complex aspects of the deployment process itself. This situation has, in part, led to the present attempt to outline a more specific conceptual model utilizing the construct of family stability.

Noting the importance of the family environment in general and family stability in particular, Israel and colleagues have explored family stability as an important influence on child outcomes. To better conceptualize the broad construct of family stability, Israel and colleagues (cf. Israel, Roderick, & Ivanova, 2002; Sokolowski & Israel, 2008) referred to global family stability as consisting of major life events, such as divorce and death of a parent, and associated family life changes, such as residential moves, changes in household residents, or change of parental employment. In addition, the authors referred to molecular family stability as the consistency and predictability of routines within the family environment as well as activities that occur outside of the family but that require family support (Sokolowski & Israel, 2008). This ongoing work includes the development of measures of both global and molecular family stability, the examination of the association of aspects of family stability with each other and with various aspects of adjustment, the demonstration that family stability functions as a protective factor, and an examination of potential mediators of the relationship between family stability and adjustment (Israel et al., 2010; Israel & Roderick, 2001; Israel et al., 2002; Ivanova & Israel, 2005; Sokolowski & Israel, 2008).

Without discounting the importance of global family stability, Israel and colleagues (2002) have suggested that molecular family stability may be more amenable to intervention inasmuch as it may be possible to improve the

Figure 1

A Visual Representation of the Hypothetical Effects of the Various Stages of the Deployment Process on Family Stability, Assuming a Typical 12-Month Deployment Cycle



regularity of family routines even when it may be less feasible to alter more global aspects of family stability. Also, they have begun to conceptualize and have found support for viewing molecular family stability as a type of parenting behavior. Family stability, although not yet explored in the context of military families, seems to be one potential way to facilitate thinking about the process of military deployment and provides a way of understanding how military deployment may affect child outcomes.

Global Family Stability

Deployment may be considered a major life event that, by its very nature, may disrupt other aspects of global family stability. This is consistent with views of deployment as a process that may set in motion other family life changes in much the same way as a divorce or other major life events have come to be viewed (e.g., Hetherington & Stanley-Hagan, 1999; Tremblay & Israel, 1998). Thus, family life changes, such as changes in residence, household residents, and schools, may be part of this process. To add to the complexity of this notion, consider that deployment may set the stage for additional major life events. Marital separation and divorce may be additional major life events associated with deployment. Cozza and colleagues (2005) have noted several other major life events associated with deployment, including the injury of a service member, mental illness resulting from deployment, and death of the service member. Furthermore, during recent conflicts more service members are surviving life-threatening injuries and coming home with permanently disabling injuries. It has also been noted that traumatic brain injury is becoming one of the hallmark injuries of current conflicts (e.g., Sammons & Batten, 2008). These injuries have prompted the VA to establish separate polytrauma units, and these service members may require care from their families for the rest of their lives (Collins & Kennedy, 2008). Thus, it seems reasonable that deployment can be construed as a major life

event that may increase the probability of occurrence of additional major life events and has the potential to disrupt other aspects of global family stability (e.g., changes in residence or household residents).

Molecular Family Stability

Beyond its impact on family life events and changes (global stability), another indirect effect of deployment on child outcomes may be through an impact on molecular family stability. Deployment may challenge the remaining parent's ability to maintain normal family activities and routines. A potential disruption in molecular family stability/parenting might be a product of the additional stress experienced by the family or due to more limited resources available to support normal activities or to manage the household. Alternatively, families may increase structure and routine (molecular family stability) in response to this major life change, which may serve to buffer the stressors associated with deployment.

Using the stages of deployment described by Pincus and colleagues (2001), one could hypothesize that each stage may impact family stability differently and speculate on various ways in which family stability and stages of deployment may be related. Here, we present one possible relationship to illustrate specific hypotheses that might be explored (see Figure 1). This description is derived from reports that families find the pre- and postdeployment stages particularly disruptive due to both the increased stress inherent to these periods and the unique challenges associated with these stages. The notification of an ensuing departure or the return home of a service member each may set in motion a series of changes in the family environment that may serve to disrupt the regularity of family routines, decreasing the level of family stability. However, it could also be theorized that, at certain points in the deployment process, family stability may actually increase even beyond baseline levels for a particular family. For example, during

the sustainment stage of the deployment process, the remaining parent might employ certain parenting practices intended to create a greater sense of predictability and security in the family environment to help compensate for the missing parent. The family may increase the regularity of certain routines or create new family routines or rituals. Clearly, alternative hypotheses are possible. This brief illustration is meant to suggest that the various stages of the deployment process may impact the stability of the family environment in different ways, creating potential for risk as well as opportunities for resilience. Likewise, it is important to consider that the impact of deployment is also likely to differ depending on the family, their unique characteristics, and their existing resources and supports.

Of course, one factor that may put families at particularly high risk for disruptions in family stability is the occurrence of parental psychopathology. Research has shown that parental psychopathology may increase stressors on a family and affect parenting abilities (e.g., Berg-Nielsen, Vikar, & Dahl, 2002). As noted previously, there is some evidence to support the notion that service members are at an increased risk for depression and PTSD/PTSS and, notably, that some of the symptoms associated with posttraumatic stress are linked with poorer parenting behavior. As indicated earlier, Israel and colleagues have begun to find support for viewing molecular family stability as a type of parenting behavior. As such, the occurrence of PTSS in returning service members is likely not only to impact their parenting behaviors in general, but also may affect their ability to maintain normal family routines.

The constructs of family stability seem to hold distinct potential in helping to synthesize current research and aid in our understanding of the effects of deployment. Future work can further inform how a model of family stability might provide insight in understanding the impact of the deployment process and assist in designing interventions to buffer the potential problematic effects of deployment on children and families. This conceptual model is intended to provide a new direction for how one can approach research, program design, and policies affecting military families and is presented as one possible model to bridge these challenges.

Directions for the Future

Irrespective of differing levels of support for the current conflicts in Iraq and Afghanistan, the vast majority of Americans clearly appreciate the need to provide support to service members and their families as they experience multiple and lengthy deployments. It also seems clear that the potential impact reaches beyond military families. The issues discussed in this article have far-reaching consequences not only for service members and their families but for our entire society as well. At a minimum, as members of the military leave the service, civilian mental health-care providers may be increasingly called upon to provide support for veterans and their families, and an important first step in assisting military families is to increase understanding of the effects of deployment on child and family outcomes. Furthermore, it seems important to allocate more

resources to research and services for military families and to carefully consider the ways in which we might better study and understand the effects of deployment. The following suggestions for future efforts are intended to facilitate this discussion.

There are several aspects of deployments themselves that warrant research. First, deployment as a construct would benefit from further clarification and investigation. For example, not all types of deployments are the same, and one might argue that a lengthy combat deployment with significant potential for harm may have different effects on families than might a shorter, regularly scheduled training deployment. Second, published research on the impact of current conflicts on families of service members has been conducted largely on single deployments, although this trend seems to be shifting. Given the stress and disruption associated with deployment, one would hypothesize that multiple deployments might be particularly harmful in terms of their effects on children and families.

In addition, the issue of deployment length demands attention. Jensen and colleagues (1996) found that greater deployment length was associated with poorer child adjustment. Current deployments are the lengthiest since World War II, and a significant number of service members have experienced unexpected deployment length extensions as well. Beyond the issue of prolonged absence, the news of a delay of a service member's homecoming is distressing and certainly has the potential to increase stress on children and families. As important as it is to consider the various aspects of deployment individually, it also seems critical to develop a broad conceptualization to better understand the effects of deployment on military families more generally.

Pincus and colleagues' (2001) description of the cycle of deployment is one useful heuristic for this purpose. Future research might further validate this or other conceptualizations of deployment and explore their broad applicability to ongoing research in this area. Additionally, further research should explore the mechanisms through which deployments affect child and family outcomes. In this article we have argued that many of the effects of deployment might be understood through their influence on family stability, and future research exploring this model is warranted. It will be similarly useful to consider the potential for multiple pathways leading to differing child outcomes. Thus, exploring potential mediators and moderators of the relationship between deployment and family stability and functioning is essential. Examples of this might be elucidating the effects on child outcomes when deployment leads to other major life events such as divorce or the death of a service member, or understanding the differences between service members returning to their families with and without PTSS and other psychopathology. It will also be important to explore how deployment affects the functioning of families of National Guard and Reserve service members, particularly as families of these service members may experience lower levels of support

because they do not reside on a military base and these service members' nonmilitary employment may be impacted by their deployment.

Given the changes in the military family structure, future research might examine the impact of deployment on a more heterogeneous and diverse sample of families. Current research has largely ignored diverse family systems, and there is reason to suspect that they are a sizeable population worthy of attention (Ender, 2006). Specifically, the impact of deployment on nontraditional families might be explored. These types of families include binuclear families, extended families charged with caring for children during deployment, single-parent families in which the parent is deployed, and families in which both service member parents are simultaneously on active duty or deployed. Along similar lines, it will be important to examine how family dynamics may be different in the homes of National Guard and Reserve service members, some of whom may not have "signed up" for the type of duty inherent in deployments in the current conflicts. Moreover, particular attention should also be given to potential issues of cultural diversity.

Whether viewed through the lens of family stability or not, it will be important to appreciate the complexity of deployments' effects for children at different developmental levels. Longitudinal research that also includes a consideration of service member and child premorbid adjustment would likely be an important aspect of such efforts. Additionally, measuring the effects of deployment on a more diverse array of child outcomes would allow for a more comprehensive and complete understanding of the effect of deployment on child outcomes. Related to this research, it will be important to better understand resiliency factors as well as risk factors. Current research has focused on understanding the problems associated with deployment, but there exists the potential for aspects of the deployment process to have positive effects on service members, their families, and their children. In addition to thinking about risk and resiliency factors associated with deployment, it seems important to consider how various aspects of our rapidly changing technology and culture may affect outcomes in the context of deployment.

In terms of the larger picture of the challenges facing current military families, the effect of technology, in particular, seems worthy of increased scrutiny. The impact of instant, if sporadic, communication via e-mail, phone, webcam, and social networking venues has largely been viewed as a positive improvement in the military, but there does exist the potential for negative effects as well (e.g., knowing Mom or Dad is safe might be positive, whereas long-distance parental conflict might be negative). In addition, the public media have had access to the current conflicts at unprecedented levels, and various Internet sources and networks such as al Jazeera have demonstrated the ability to present graphic images and videos. To our knowledge there is no research examining the impact of this technological explosion on child and family outcomes,

and we hope that future researchers will explore these issues.

Finally, it seems evident that today's military community includes a greater percentage of families and children than in previous generations. Furthermore, the many and unique demands on these families and children due to the ongoing conflicts would suggest that previous research may have limited relevance to this population. In short, this situation strongly suggests that more attention should be given to understanding the effects of deployment on service members, families, and children. Furthermore, it suggests the need to allocate more resources to ameliorating the potential negative effects and fostering the positive reactions deployment may engender. Future researchers and policy makers might carefully consider this when developing research agendas and allocating funds.

Conclusion

Understanding the effect of military deployment on service members and their families is a complex issue, and there are many ways to approach this important and timely topic. Addressing such a broad issue demands a balance between thoroughness and conciseness. An important theme of this article is recognizing and articulating the relevant constructs in a manner that demonstrates both an appreciation for their complexity as well as an attempt to facilitate future conversation. An examination of the relevant literature suggests that, in addition to deficits in specific areas of interest, there is a general paucity of current empirical research and older data may have limited generalizability to the current population and context. Clearly there is a need for more work. Compiling and describing information related to deployment and child and family outcomes are worthwhile endeavors, and synthesizing research within a theoretical perspective adds another important layer or dimension. We suggest that understanding the impact of deployment on child outcomes in terms of family stability is one useful way to understand this issue. We hope that such work will facilitate thinking, research, and applications in the service of the men and women who serve this nation, along with their families and children.

REFERENCES

- American Psychological Association Presidential Task Force on Military Deployment Services for Youth, Families, and Service Members. (2007). *The psychological needs of U.S. military service members and their families: A preliminary report*. Washington, DC: American Psychological Association.
- Barnes, V. A., Davis, H., & Treiber, F. A. (2007). Perceived stress, heart rate, and blood pressure among adolescents with family members deployed in Operation Iraqi Freedom. *Military Medicine, 172*, 40–43.
- Berg-Nielsen, T. S., Vikan, A., & Dahl, A. A. (2002). Parenting related to child and parental psychopathology: A descriptive review of the literature. *Clinical Child Psychology and Psychiatry, 7*, 529–552. doi: 10.1177/1359104502007004006
- Caselli, L. T., & Motta, R. W. (1995). The effect of PTSD and combat level on Vietnam veterans' perceptions of child behavior and marital adjustment. *Journal of Clinical Psychology, 51*, 4–12. doi:10.1002/1097-4679(199501)51:1<4::AID-JCLP2270510102>3.0.CO;2-E
- Castro, C. A., Adler, A. B., & Britt, C. A. (Eds.). (2006). *Military life: The psychology of serving in peace and combat: Vol. 3. Military family*. Bridgeport, CT: Praeger Security International.

- Chartrand, M. M., Frank, D. A., White, L. F., & Shope, T. R. (2008). Effect of parents' wartime deployment on the behavior of young children in military families. *Archives of Pediatric and Adolescent Medicine*, *162*, 1009–1014. doi:10.1001/archpedi.162.11.1009
- Chartrand, M. M., & Spiegel, B. (2007). At war in Afghanistan and Iraq: Children in US military families. *Ambulatory Pediatrics*, *7*, 1–2.
- Collins, R. C., & Kennedy, M. C. (2008). Serving families who have served: Providing family therapy and support in interdisciplinary poly-trauma rehabilitation. *Journal of Clinical Psychology*, *64*, 993–1003. doi:10.1002/jclp.20515
- Cozza, S. J., Chun, R. S., & Polo, J. A. (2005). Military families and children during Operation Iraqi Freedom. *Psychiatric Quarterly*, *76*, 371–378. doi:10.1007/s11126-005-4973-y
- Davidson, J., Smith, R. D., & Kudler, H. S. (1989). Familial psychiatric illness in chronic posttraumatic stress disorder. *Comprehensive Psychiatry*, *30*, 339–345. doi:10.1016/0010-440X(89)90059-X
- Dirkzwager, A. J. E., Bramsen, I., Adèr, H., & van der Ploeg, H. M. (2005). Secondary traumatization in partners and parents of Dutch peacekeeping soldiers. *Journal of Family Psychology*, *19*, 217–226. doi:10.1037/0893-3200.19.2.217
- Dubanoski, R. A., & McIntosh, S. R. (1984). Child abuse and neglect in military and civilian families. *Child Abuse and Neglect*, *8*, 55–67. doi:10.1016/0145-2134(84)90050-4
- Ender, M. G. (2006). Voices from the backseat: Demands of growing up in military families. In C. A. Castro, A. B. Adler, & C. A. Britt (Eds.), *Military life: The psychology of serving in peace and combat* (Vol. 3, pp. 138–166). Bridgeport, CT: Praeger Security International.
- Engel, R. C., Gallagher, L. B., & Lyle, D. S. (2010). Military deployments and children's academic achievement: Evidence from Department of Defense education activity schools. *Economics of Education Review*, *29*, 73–82. doi:10.1016/j.econedurev.2008.12.003
- Fals-Stewart, W., & Kelley, M. (2005). When family members go to war—A systemic perspective on harm and healing: Comment on Dirkzwager, Bramsen, Adèr, and van der Ploeg. *Journal of Family Psychology*, *19*, 233–236. doi:10.1037/0893-3200.19.2.233
- Galovski, T., & Lyons, J. A. (2004). Psychological sequelae of combat violence: A review of the impact of PTSD on the veteran's family and possible interventions. *Aggression and Violent Behavior*, *9*, 477–501. doi:10.1016/S1359-1789(03)00045-4
- Gawande, A. (2004). Casualties of war: Military care for the wounded in Iraq and Afghanistan. *New England Journal of Medicine*, *351*, 2471–2475. doi:10.1056/NEJMp048317
- Gibbs, D. A., Martin, S. L., Kupper, L. L., & Johnson, R. E. (2007). Child maltreatment in enlisted soldiers' families during combat-related deployments. *Journal of the American Medical Association*, *298*, 528–535. doi:10.1001/jama.298.5.528
- Grieger, T. A., Cozza, S. J., Ursano, R. J., Hoge, C., Martinez, P. E., Engel, C. C., & Wain, H. J. (2006). Posttraumatic stress disorder and depression in battle-injured soldiers. *American Journal of Psychiatry*, *163*, 1777–1783. doi:10.1176/appi.ajp.163.10.1777
- Hetherington, E. M., & Stanley-Hagan, M. (1999). The adjustment of children with divorced parents: A risk and resiliency perspective. *Journal of Child Psychology and Psychiatry*, *40*, 129–140. doi:10.1111/1469-7610.00427
- Hillenbrand, E. D. (1976). Father absence in military families. *The Family Coordinator*, *25*, 451–458. doi:10.2307/582860
- Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Journal of the American Medical Association*, *295*, 1023–1032. doi:10.1001/jama.295.9.1023
- Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine*, *351*, 13–22. doi:10.1056/NEJMoa040603
- Israel, A. C., Ivanova, M. Y., Roderick, H. A., Sokolowski, K. L., Chalmers, S. M., & Them, M. A. (2010). *The Stability of Activities in the Family Environment (SAFE): Psychometric properties of the parent report*. Manuscript submitted for publication.
- Israel, A. C., & Roderick, H. A. (2001). A measure of the stability of family activities: An initial examination. *Assessment*, *8*, 417–424. doi:10.1177/107319110100800406
- Israel, A. C., Roderick, H. A., & Ivanova, M. Y. (2002). A measure of the stability of activities in a family environment. *Journal of Psychopathology and Behavioral Assessment*, *24*, 85–95. doi:10.1023/A:1015336707701
- Ivanova, M. Y., & Israel, A. C. (2005). Family stability as a protective factor against the influences of pessimistic attributional style on depression. *Cognitive Therapy and Research*, *29*, 243–251. doi:10.1007/s10608-005-3167-0
- Jensen, P. S., Martin, D., & Watanabe, H. (1996). Children's response to separation during Operation Desert Storm. *Journal of the American Academy of Child & Adolescent Psychiatry*, *35*, 433–441. doi:10.1097/00004583-199604000-00009
- Karney, B. R., Ramchand, R., Osilla, K. C., Caldarone, L. B., & Burns, R. M. (2008). *Invisible wounds: Predicting the immediate and long-term consequences of mental health problems in veterans of Operation Enduring Freedom and Operation Iraqi Freedom*. Santa Monica, CA: The RAND Center for Military Health Policy Research.
- Levai, M., Kaplan, S., Ackermann, R., & Hammock, M. (1995). The effect of father absence on the psychiatric hospitalization of Navy children. *Military Medicine*, *160*, 104–106.
- Lincoln, A., Swift, E., & Shorteno-Fraser, M. (2008). Psychological adjustment and treatment of children and families with parents deployed in military combat. *Journal of Clinical Psychology*, *64*, 984–992. doi:10.1002/jclp.20520
- Lyle, D. S. (2006). Using military deployments and job assignments to estimate the effect of parental absences and household relocations on children's academic achievement. *Journal of Labor Economics*, *24*, 319–350. doi:10.1086/499975
- McCarroll, J. E., Ursano, R. J., Fan, Z., & Newby, J. H. (2008). Trends in US Army child maltreatment reports: 1990–2004. *Child Abuse Review*, *17*, 108–118. doi:10.1002/car.986
- Palmer, C. (2008). A theory of risk and resilience factors in military families. *Military Psychology*, *20*, 205–217. doi:10.1080/08995600802118858
- Pincus, S. H., House, R., Christenson, J., & Adler, L. E. (2001). The emotional cycle of deployment: A military family perspective. *U.S. Army Medical Department Journal*, *45/6*, 15–23.
- Raiha, N. K., & Soma, D. J. (1997). Victims of child abuse and neglect in the US Army. *Child Abuse and Neglect*, *21*, 759–768. doi:10.1016/S0145-2134(97)00037-9
- Rentz, E. D., Marshall, S. W., Loomis, D., Casteel, C., Martin, S. L., & Gibbs, D. A. (2007). Effect of deployment on the occurrence of child maltreatment in military and nonmilitary families. *American Journal of Epidemiology*, *165*, 1199–1206. doi:10.1093/aje/kwm008
- Rosen, L. N., Teitelbaum, J. M., & Westhuis, D. J. (1993). Children's reactions to the Desert Storm deployment: Initial findings from a survey of Army families. *Military Medicine*, *158*, 465–469.
- Ruscio, A. M., Weathers, F. W., King, L. A., & King, D. W. (2002). Male war-zone veterans' perceived relationships with their children: The importance of emotional numbing. *Journal of Traumatic Stress*, *15*, 351–357. doi:10.1023/A:1020125006371
- Ryan-Wenger, N. A. (2001). Impact of the threat of war on children in military families. *American Journal of Orthopsychiatry*, *71*, 236–244. doi:10.1037/0002-9432.71.2.236
- Sammons, M. T., & Batten, S. V. (2008). Psychological services for returning veterans and their families: Evolving conceptualizations of the sequelae of war-zone experiences. *Journal of Clinical Psychology*, *64*, 921–927. doi:10.1002/jclp.20519
- Seal, K. H., Metzler, T. J., Gima, K. S., Bertenthal, D., Maguen, S., & Marmar, C. R. (2009). Trends and risk factors for mental health diagnoses among Iraq and Afghanistan veterans using Department of Veterans Affairs health care, 2002–2008. *American Journal of Public Health*, *99*, 1651–1658. doi:10.2105/AJPH.2008.150284
- Sokolowski, K. L., & Israel, A. C. (2008). Perceived anxiety control as a mediator of the relationship between family stability and adjustment. *Journal of Anxiety Disorders*, *22*, 1454–1461. doi:10.1016/j.janxdis.2008.02.009
- Tan, M. (2009, December 20). A million soldiers deployed since 9/11. *ArmyTimes*, *12*. Retrieved from http://www.armytimes.com/news/2009/12/army_deployments_121809w/
- Tanielian, T., & Jaycox, L. H. (2008). *Invisible wounds of war: Psycho-*

- logical and cognitive injuries, their consequences, and services to assist recovery.* Santa Monica, CA: The RAND Center for Military Health Policy Research.
- Tremblay, G. C., & Israel, A. C. (1998). Children's adjustment to parental death. *Clinical Psychology: Science and Practice*, 5, 424–438.
- U.S. Army Surgeon General. (2008). *Mental Health Advisory Team (MHAT-V): Report*. Washington, DC: Office of the Surgeon General. Retrieved July 28, 2009, from <http://www.armymedicine.army.mil>
- U.S. Department of Defense, DoD Personnel & Procurement Statistics. (2009, February). *Personnel & procurement reports and data files: Military casualty information*. Retrieved February 19, 2009, from <http://siadapp.dmdc.osd.mil/personnel/CASUALTY/castop.htm>
- U.S. Department of Defense Task Force on Mental Health. (2007). *An achievable vision: Report of the Department of Defense Task Force on Mental Health*. Falls Church, VA: Defense Health Board.
- Wiens, T. W., & Boss, P. (2006). Maintaining family resiliency before, during and after military separation. In C. A. Castro, A. B. Adler, & C. A. Britt (Eds.), *Military life: The psychology of serving in peace and combat* (Vol. 3, pp. 13–38). Bridgeport, CT: Praeger Security International.