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Impact of Parental Deployment on Internalizing and Externalizing Behavior Problems of Military-Connected Students

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DEDICATION

To my daughter, Brooklyn Belle Hickey. May it inspire you in the future to pursue your dreams.

ABSTRACT OF THE DISSERTATION

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Estimates suggest more than 2 million children have experienced a parental deployment since 2002, and 1.2 million of those children are school-aged (i.e. 6 to 18 years). Academically, school-aged children whose parents are deployed perform lower than children whose parents have never been deployed, particularly with increased cumulative months of deployment experienced by military-connected (MC) children. School personnel hypothesize the impact may be due to internalizing and externalizing behavioral problems resulting from parental deployment, which often relate to mental health challenges of the non-deployed parent. Home-based studies suggest deployment impacts internalizing and externalizing behavioral problems, particularly in younger children aged five to 12 years. However, there is a lack of studies examining the impact of deployment on these behavioral outcomes within the school setting and using teacher report. The purpose of this study was to examine the impact of parental deployment on internalizing and externalizing behaviors within the home and school setting. The study

utilized a mixed analysis of variance (ANOVA) design to examine differences in behavioral and emotional risk, utilizing both parent and teacher report, between two groups. The two groups included military-connected (MC) students currently or recently experiencing deployment (within previous 6 months), and MC students who neither currently nor recently experienced parental deployment. Results suggest a significant main effect of rater on internalizing behavioral problems, with the parents rating the children higher than the teachers; however, no significant main effect of parental deployment status was indicated. No significant main effect of parental deployment status or rater was found for externalizing behavior problems. Further, while there was a significant main effect between parents and teachers on internalizing behaviors, most of the sample fell within the average range on both scales, based upon both teacher and parent report. Implications, limitations and future research are discussed.

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Chapter 1: Introduction

Currently, the Department of Defense (DoD; 2016) estimates 41.2% of military personnel, including Active Duty (AD) and Ready Reserve individuals, have one or more children, with the total number of military children under the age of 18 totaling 644,892. Approximately 592,000 of those children are six to 11 years old. Many of the school-aged military-connected (MC) students attend civilian-operated public schools. Eighty percent of those MC students attending civilian-operated public schools are concentrated within approximately 214 public school districts, referred to as MC or military-affected school districts (DoDEA, 2011). An MC school district is defined as any district with either an average daily attendance (ADA) of MC students greater than 400, or an ADA of whom 10 percent or more are MC students (Kitmitto, Huberman, Blankenship, Hannan, Norris, & Christensen, 2011). On the other hand, 86,000 attend Department of Defense Educational Activity (DoDEA) schools, and few students are home schooled or attend private schools (DoDEA, 2011).

Department of Defense Education Activity

The DoDEA schools are responsible for planning, directing, coordinating and managing pre-kindergarten through 12th grade educational programs for military-connected students within 181 schools in 14 districts. DoDEA districts are located within the U.S., 12 foreign countries, Guam, and Puerto Rico. The following districts in the U.S. operate within the DoDEA: Georgia/Alabama, Kentucky, North Carolina-Camp Lejeune, North Carolina-Fort Bragg, New York/Virginia/Puerto Rico, and South Carolina/Fort Stewart/Cuba districts. Within DoDEA schools, school personnel, including

administrators, teachers, and staff, are trained to support the specific needs of MC students. In addition, structural supports are implemented within DoDEA schools, particularly social and emotional development and support (DoDEA, 2011). In relation to academics, on average, 4th and 8th grade DoDEA students scored greater than the National average in both reading and mathematics in 2013 (DoDEA, 2013). Regarding parent and student satisfaction, the DoDEA Customer Satisfaction Survey is administered every two years to all parents with children attending DoDEA schools, as well as all MC students fourth through twelfth grade. In the most recent data available from November 2010 through December 2010, 19,861 parents and 27,514 students participated in the following five areas: overall education, assessment, technology, students support and communication. In overall satisfaction with the school supports, the results indicate positive parent and student feedback, and higher ratings in comparison to the other non-DoDEA schools based on the Gallup Poll of the Public's Attitudes Toward Their Public Schools (DoDEA, 2011).

Civilian-Operated Public Schools

Conversely, civilian-operated public schools educating MC students are often unaware of the identification of MC students due to the lack of a structured identification system. In addition, even when MC status is known, school personnel may be unaware of the deployment status of MC parents (De Pedro, Astor, Benbenishty, Estrada, Smith, & Esqueda, 2011). Further, MC students who are children of National Guard (NG) or Reserves soldiers often do not live near military installations, nor do many attend a MC school district; therefore, identification of MC students with parents in the NG or

Reserves, as well as deployment status, may not be known (De Pedro et al., 2011). Regardless of school attendance, for soldiers and family, dealing with separations and subsequent reintegration, is a reality.

Deployment Statistics and Characteristics

In 2011, the Department of Defense Education Activity (DoDEA) estimated that more than 2 million children had experienced the deployment of a parent since 2002, and 1.2 million of those children were school-aged (DoDEA, 2011); these data indicate that a significant number of school-aged children experienced parental deployment and parental reintegration. The typical deployment cycle includes pre-deployment, deployment, post-deployment, and reintegration phases. Pre-deployment refers to "normal life", in which soldiers maintain training and medical evaluations for unit readiness. Once notified of an impending deployment, service members must participate in briefings, training, medical and dental evaluations, and possibly counseling, to ensure readiness and ability to deploy. Once service members physically leave the home installation for the "theater" (i.e. deployment location), the deployment phase begins. Deployment refers to performing duties specific to the deployment mission. This phase ends once service members are redeployed to the home installation. Post-deployment involves additional briefings, training, medical evaluations and counseling to assist in return to "normal life." Finally, servicemembers then reintegrate into the family and community (Deployment, n.d.). Deployment is a challenging time for servicemembers and their families; in fact, research has examined the impact deployment has school-age MC children. However, prior to

discussing the impact of parental deployment on MC children, it is important to consider the barriers to research examining MC children.

Barriers to School-Based Research

Logistically, conducting research in DoDEA schools is ideal, as only MC students can attend these schools, allowing for access to both parents and teachers. This eliminates the difficult step of identifying the MC students in civilian-operated public schools. Further, researchers can directly contact teachers, rather than the need of parents to do so. Unfortunately, the DoDEA has strict guidelines regarding research conducted in the districts, particularly when conducted by non-DoDEA employees; specific policies and procedures are provided in Appendix A, including limitations on publication, presentations and further dissemination of data (DoDEA, 2008). Therefore, DoDEA schools are difficult to access for research.

The need to identify MC students in civilian-operated public schools makes data collection difficult, as well. Academic data can be directly collected through school personnel with the collection of identifying student information unnecessary to researchers. However, to collect military and deployment status, amongst other variables, MC students must first be identified. Furthermore, following consent, parents must provide information regarding deployment and other demographic variables.

These barriers to school-based research has resulted in research examining the relationship between parental deployment and behavior primarily healthcare-based and home-based studies. The former studies are those in which medical records were reviewed and matched to hostile pay records, indicating a deployment. Home-based

studies for MC students refer to contact with participants and collection of data completed through families. In past studies, participants were recruited through military-operated organizations, primarily through unit-operated family support groups (e.g. Army Family Readiness Groups). On the other hand, studies in which participants were recruited and data collected directly through schools are referred to as school-based studies. The inclusion of school-based studies is important in the examination of the impact of parental deployment on students; through these studies, both parent and teacher report can be collected to provide a clearer understanding. Also aiding in a clearer picture of how parental deployment may impact MC children, Riggs and Riggs' (2011) proposed the Family Attachment Network Theory (FANT), providing a framework.

Family Attachment Network Theory

The Family Attachment Network Theory (FANT), proposed by Riggs and Riggs (2011), is grounded in attachment and family systems theories. The family attachment network consists of multiple relationships across multiple system levels, including individual, dyadic, subsystem, and system-wide interaction. Further, each of those relationships has distinct rules and attributes, yet interact with other levels and the whole family system. Additionally, differing attachment strategies are employed in the various relationships, such as between parent and child. The nature of the relationships and attachment impacts an MC child's psychological reaction to deployment. Specifically, Riggs and Riggs (2011) posit the reaction is dependent on attachment bonds with the deploying and non-deploying parent, family systems and the overall psychological and behavioral functioning of the non-deploying parent in the home.

Attachment bonds. Riggs and Riggs (2011) propose if a deploying parent has not been a significant attachment figure, children will respond with greater resilience. On the other hand, if a deploying parent, whether mother or father, has been an important attachment figure, the deployment will impact the child greater. However, that impact may be mitigated if the non-deploying parent and the child have a secure attachment. Conversely, insecure attachments between non-deployed parents and children or lack of routine maintenance may contribute to risk for psychological difficulties during parental deployment (Riggs & Riggs, 2011).

Family systems. Related to family systems within FANT, when a parent deploys, stress and disorganization occurs within the family system, subsystems, and individuals. The ability to return to a stable family system supports children's resilience. The three processes that promote resiliency include a family belief system, communication processes, and organizational patterns. A belief system, such as patriotism and pride of the military life, contributes to resiliency of the family during deployment. Second, increased quality and quantity in communication may be beneficial. For example, communication characterized by honesty, openness, collaboration, and problem solving are associated with adaptive family systems. Further, the structural and organizational patterns can contribute to risk or resilience during parental deployment. Specifically, flexibility in adapting to new challenges, respect, and shared responsibility to ensure each family member is cared for and feels secure characterizes families with a secure base and positive adjustment. Specifically, flexibility is tested during deployment, as there are

necessary structural, organizational, role, and power shifts; a secure family base must be reestablished and routines maintained to support adjustment (Riggs & Riggs, 2011).

Functioning of non-deployed parent. The theory posits that the impact on an MC child, along with attachment bonds and family systems, is dependent on the functioning of the non-deployed parent. As will be discussed in the literature review on behavioral problems, research supports that the mental health of the non-deployed parent is associated with children's psychological reaction to deployment (Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Kelley, 1994; Lester et al., 2010; Mmari et al., 2010; Pierce et al., 1998).

Summary. Overall, FANT posits that a secure attachment with the non-deployed parent during a parental deployment, and the skills to reestablish a secure family base and maintenance of routines supports children's adjustment. Conversely, lacking a secure attachment to the non-deployed parent, flexibility to adapt to structural and organizational changes, maintenance of routines contributes to an adverse effect on indicators of behavior. On the other hand, a positive, secure attachment to the non-deployed parent, secure base and adaptive functioning of the non-deployed parent all support successful adjustment to parental deployment (Riggs & Riggs, 2011). With the understanding of the potential mediators of a child's functioning during a parental deployment, the following discussion provides details of previous research conducted on this topic.

Academics

Four school-based studies examined the impact of parental deployment on students' academic achievement. Overall, studies examining the relationship between

parental deployment and academic achievement in school age children have found a small to medium negative association, with increased cumulative months across and within deployments producing larger negative effects (Card et al., 2011; Engle et al., 2010; Lyle, 2006; Richardson et al., 2011). Specifically, children who experience 19 months or more of parental deployment, cumulatively, have moderately lower test scores than those children who experience less than 19 months (Richardson et al., 2011). Further, the results are observed to last several years and across academic subjects (Engel et al., 2010). Additionally, studies suggest the impact is observed for MC children with parent in AD, NG, and Reserve components. The following provide details of the studies conducted in academics.

In a meta-analysis, child adjustment, including academic functioning, and internalizing and externalizing behavioral functioning, during parental deployment was examined (Card et al., 2011). The meta-analysis included 16 studies completed between 1978 and 2010 and a weighted random-effects mean effect size was calculated. A small to medium association, with an effect size of 0.16, between deployment and academic achievement was found for middle childhood, defined as six to 12 years of age. It is important to consider that only a small number of studies were included in the analysis; three studies, or approximately 19% of studies, were either unpublished or published in a journal that was not peer-reviewed, and not all studies included the three outcomes of academics, externalizing behavior and internalizing behavior. Although Card and colleagues (2011) had methodological concerns, the additional three studies examining the relationship between parental deployment and academic achievement during the

Global War on Terror (GWOT; i.e. Operation Enduring Freedom and Operation Iraqi Freedom) provide support for the association (Lyle, 2006; Engel, Gallagher, & Lyle, 2010; Richardson et al., 2011).

Lyle (2006) examined this relationship in a study of U.S. Army AD personnel data and standardized mathematics test scores in MC schools in Texas for approximately 13,000 children, aged six to 19 years. The results suggested that parental deployment detrimentally affects children's test scores, across both enlisted individuals and officers. Specifically, for every month a child experienced parental deployment, there was an average decrease of one point on the standardized mathematics test scores. Regarding the covariates, greater impact was observed for students with single parents, military mothers, less educated parents, and younger children (Lyle, 2006).

In a similar study conducted within civilian-operated public MC schools, Richardson and colleagues (2011) examined the association between the large-scale standardized achievement test scores and parental deployment status of approximately 44,000 MC students attending MC schools in North Carolina and Washington. The students included in the study were children of Army AD, Army NG, and Army Reserves. The results suggest MC elementary and middle school students who experienced seven to 18 cumulative months of parental deployment and 19 cumulative months or more of parental deployment in their lifetime scored significantly lower. Specifically, seven to 18 months and 19 months or greater produced a small and medium effect, respectively, in comparison to children who experienced less than 7 months or no parental deployment during their lifetime. However, the number of deployments was not

associated with academic performance once accounting for the cumulative number of months of deployment experienced in a child's lifetime. One limitation of this study was the lack of control for prior achievement (Richardson et al., 2011).

Engel, Gallagher, and Lyle (2010) analyzed academic achievement data for children of enlisted AD Army personnel enrolled in DoDEA schools and deployment data for the military parents. Data were collected from over 56,000 school-aged children during 2002 to 2005. The results suggest that parental deployment had a medium adverse effect on students' academic achievement, in most subject areas and total scores. The largest adverse effects were observed during prolonged deployments and deployments occurring during large-scale assessments. Furthermore, the effects were observed to last up to 4 to 5 years (Engel et al., 2010).

During interviews, administrators, teachers, counselors, and other school staff involved with the education of MC students hypothesize the impact on academics results from poor emotional or behavioral health (i.e. internalizing and externalizing behavioral problems) due to parental deployment (Richardson et al., 2011). Therefore, it is important to examine research focused on behavior of MC students experiencing parental deployment, as a potential mediating factor between parental deployment and academic performance.

Behavior

Internalizing behavioral problems.

Healthcare-based studies. Two studies have observed increased mental health referrals and identification for MC children of AD service members during a parental

deployment. This was accomplished through matching military medical records with deployment records (Angrist & Johnson, 2000; Gorman, Eide, & Hisle-Gorman, 2010). Angrist and Johnson (2000) found increases in emotional disability referrals and identification rates among MC children during parental deployment for Operation Desert Shield and Operation Desert Storm. In a similar study, conducted during the GWOT, data from the 2005 to 2006 fiscal year were collected for 642,397 three to eight-year-old children of active-duty personnel. The results indicate that deployment was a significant predictor of health visits. Specifically, the number of mental and behavioral health visits increased by 11% and stress disorders increased by 18% in MC children during a parental deployment (Gorman, Eide, & Hisle-Gorman, 2010).

In addition to increases in referrals and identification of disabilities, an analysis of the military health system data from the 2007 fiscal year indicates parental deployment is associated with increases in parent and child use of antidepressants and anti-anxiety medications from the prior year. Participants included non-pregnant spouses and dependent children of Army AD soldiers, including both a deployed group and comparison group. Results suggest children's anti-depressant and anti-anxiety use increasing 17.2% and 10%, respectively (Larson et al., 2012). The results from a healthcare perspective reflect the potentially greater internalizing behavioral challenges during parental deployment.

Home-based studies. One study prior to Operation Desert Shield and Operation Desert Storm, during the Persian Gulf War, was conducted (Kelley, 1994). Three studies analyzed the impact of parental deployment on internalizing behavioral outcomes, using

parent report, during Operation Desert Shield and Operation Desert Storm (Jenson, Martin & Watanabe, 1996; Pierce, Vinokur, & Buck, 1998; Kelley et al., 2001), and four studies examined the association during OEF and OIF (Chandra et al., 2010a; Flake, Davis, Johnson, and Middleton, 2009; Pfefferbaum, Houston, Sherman, & Melson, 2011). Additionally, the above described meta-analysis and a literature review examined this association. Card and colleagues (2011) found a significant, medium association of 0.22 in middle childhood for internalizing behavioral problems. These results mirror the greater impact for children six to 12 years of age found for academics (Card et al., 2011). In a review of the literature, Cozza, Chun, and Polo (2005) concluded that increases in anxiety and depression are observed during parental deployment, and occurs during both peacetime and wartime deployments.

Persian Gulf War. In an early study examining children's internalizing and externalizing behavior prior to, during, and after a peacetime or wartime deployment of the Persian Gulf War from 1989 to 1991, participants from Kelley (1994) included 61 mothers of MC children of Naval fathers, aged five to 13 years. Overall, mothers reported increased internalizing behavioral problems in their children prior to and during deployment, in comparison to the reintegration of the father. The associations between maternal measures and children's internalizing behaviors were high, indicating increases in children's internalizing behavioral problems are associated with greater maternal depression prior to, during, and after deployment. These results indicate internalizing behavioral problems may be adversely affected by low maternal contentment, a proxy of mental health (Kelley, 1994).

Operation Desert Shield and Operation Desert Storm. Jenson, Martin and Watanabe (1996) examined more specific internalizing behavioral problems of children of deployed and non-deployed AD parents during Operation Desert Storm, including depression and anxiety. 383 families living on a military base near Washington, D.C., with one or more children between the ages of four and 17 years, completed rating scales that examine child internalizing behavior, as well as parent self-report internalizing behavior. Results revealed that children of a deployed parent experienced modestly higher levels of depression, as measured by the CDI, in comparison to children with a non-deployed parent. However, no differences were found for anxiety (Jensen, Martin & Watanabe, 1996).

Pierce, Vinokur, and Buck (1998) gathered child adjustment data during and approximately two years post-Desert Storm, from a stratified sample of 525 AD Air Force mothers deployed during Desert Storm. The results suggest deployment status predicts child adjustment; however, child adjustment during deployment did not significantly predict child adjustment two years post-Desert Storm. This data indicates that although parental deployment has an impact, the impact may not last for an extended amount of time. As hypothesized, poor mental health of the mother was the strongest predictor of child adjustment two years after the war (Pierce et al., 1998). However, results are questionable due to two major limitations. First, child adjustment was rated by mothers, with many of the mothers deployed during the war. Additionally, data was collected retrospectively for child adjustment and predictor variables, occurring two years

post-Desert Storm. Limitations suggest parent-report within this sample may be inaccurate.

In a similar study to Kelley (1994), Kelley and colleagues (2001) examined the internalizing behaviors of children aged eight months to eight years with a deployed AD Navy mother, in comparison to children with non-deployed Navy mothers and civilian children. Statistically significant differences were detected in behaviors amongst children with a deployed mother, non-deployed mother, or civilian parent. Follow up tests suggested that children of deployed mothers exhibited significantly higher levels of internalizing behaviors (Kelley et al., 2001). In an examination of the percent of children falling within the clinical range on the CBCL, after collapsing scores across time, results indicate a significant difference amongst the groups. Specifically, 12%, 1%, and 3% of children of deployed, non-deployed, or civilian mother, respectively, were rated within the clinically significant range on internalizing behavioral problems. Additionally, the number of days a mother was away from the child in the previous year was moderately correlated with reported internalizing behavior problems, suggesting the number of days a mother was deployed may result in increased internalizing behavior problems in children, like previous studies (Kelley et al., 2001). A large limitation of this study was the lack of data collected during the deployment.

Operation Enduring Freedom and Operation Iraqi Freedom. The studies conducted during OEF and OIF provide additional support for an impact on internalizing behavior during parental deployment. Flake and colleagues (2009) examined the parental stress of 101 Army spouses and the psychosocial health of their children in elementary

school, aged five to 12 years. The sample was recruited from an Army installation and included families in which two-thirds of the military personnel were deployed at the time of data collection, with the remaining families experiencing deployment within the previous 15 months. Approximately one-third of the sample reported high risk for poor psychosocial health in children, and 42% of the participants indicated high risk stress levels in the Parenting Stress Index-Short Form. MC children in the sample differed significantly from the national norms on the psychosocialthe scale of the; specifically, 32% of the study sample exceeded the criteria for high risk, which was two and one-half times greater than the national norm sample. When examining internalizing behaviors, 34% of the study sample met the criteria for high risk, which was significantly greater than the norming sample. Further, significant predictors of poor psychosocial health of a child included perceived lack of support, educational level of both parents, parental stress and deployment status (i.e. currently or recently deployed), with the latter two most predictive (Flake et al., 2009).

In a similar study, 171 families, including 272 children, 163 civilian parents, and 65 AD Army parents participated (Lester et al., 2010). Participants were divided into two deployment groups, including current deployment and recently returned from deployment (within 15 months). Results indicated both groups were similar on the child outcomes. However, in comparison to community norms, the study sample was significantly greater in the number of children reaching clinically significant levels on the anxiety measure, with one-third of the total sample. Parental distress of the civilian and AD parents, as

well as the cumulative number of months of deployment experienced within the child's lifetime predicted child depression (Lester et al., 2010).

Chandra and colleagues (2010a) examined emotional well-being of MC children aged 11 to 17 years, utilizing phone interviews. MC children from AD, NG, and Reserves components across military branches, with a currently or recently deployed parent were included in the study. Analyses suggest that children of deployed parents experience significantly greater emotional difficulties in comparison to community samples. Further, the length of the deployment and poor mental health of the non-deployed caregiver were both significantly associated with increased number of challenges during deployment and reintegration of the deployed parent (Chandra et al., 2010a). The recruitment of participants occurred through Operation Purple camp, which is a free camp that helps children aged seven to 17 years cope with the stressors of war, particularly parental deployment. This is important to consider because families must apply to attend the camp; therefore, families attending this camp may have a greater support than many families experiencing deployment.

In a longitudinal study, data was collected from ten spouses and 18 children, aged six to 18 years of Oklahoma National Guard service members during a parental deployment to Iraq. Data were collected during pre-, mid-, and post-deployment. During deployment, increases in the proportion of children at risk or clinically significant on self-report scales of emotional symptoms and internalizing problems, were observed (Pfefferbaum, Houston, Sherman & Melson, 2011). An important limitation of this study

was the small number of participants. However, the strengths of the study were the longitudinal nature of the data and the study of National Guard families.

Morris and Age (2009) found differing results. Following the completion of the Strengths and Difficulties Questionnaire (SDQ) for 65 children with at least one parent in the military, ranging in age from 9 to 15, follow-up tests revealed no differences between children with a parent recently deployed or non-deployed, in relation to internalizing behavioral problems (Morris & Age, 2009). The results may be explained by the fact that data was not collected during the actual deployment, but shortly thereafter. Further, the sample included older children than other studies, with whom Card and colleagues (2010) found no significant differences during parental deployment. In addition, unlike most studies that used more psychometrically sound behavioral scales, this study used the SDQ, with Morris and Age (2009) reporting low reliability coefficients.

School-based studies. Currently, there is a lack of research examining the degree to which parental deployment impacts internalizing and externalizing behavioral outcomes of MC children in the school setting (Richardson et al., 2011). This is due to the previously discussed barriers to research conducted with the MC student population. To date, two qualitative methods, conducted during OEF and OIF, have been employed within schools to examine the impact of deployment on internalizing problems. Two studies conducted in schools thus far with parents, adolescents, and school personnel suggests that an adverse impact is observed on children's internalizing behavior during parental deployment, and length of deployment and the mental health of the non-

deployed parent is associated with the impact (Chandra, Martin, Hawkins, & Richardson, 2010b; Mmari, Bradshaw, Sudhinaraset & Blum, 2010).

Chandra and colleagues (2010b) utilized focus groups and semi-structured interviews, to examine the impact of deployment on children from the perspective of school personnel, including teachers, counselors, and administrators at 12 MC schools, which ranged from 30 to 98% of MC students. Additionally, 12 school staff serving children of Reserve and NG personnel were contacted for interviews. Unique behavioral, emotional, social, and academic issues were addressed within the study. School staff observed many MC students coping effectively and displaying exceptional resilience during parental deployment. However, there was a consensus that deployment impacts a student's functioning in school, particularly due to social, behavioral and emotional issues. These concerns were in relation to the uncertainty in deployment length and frequency, and perceived mental health problems of the non-deployed parent. For example, school staff observed MC students having increased responsibility, such as providing emotional support for the non-deployed parent. Staff stated that they observe students losing resiliency as parental deployments increased (Chandra et al., 2010b).

In a similar study examining social connectedness and coping, eleven focus groups were conducted with MC students of AD military personnel, across the four branches, enrolled in a public middle or high school, parents, and school faculty (i.e. teachers, school psychologists, counselors). The participants were recruited from eight military bases in Colorado, Kansas, New York, North Carolina, and Texas, and represented all branches of the military. Forty-six percent of the MC students were

currently experiencing a parental deployment, and 90% of the sample had experienced a deployment within their lifetime. MC adolescents were most concerned with parental deployment. When asked about the impact of deployment on social connectedness, many adolescents expressed concern about the parent missing special events and the reintegration of the deployed parent into the family, after adapting without the deployed parent. In addition, parents and adolescents discussed the stress of the non-deployed parent resulting from deployment as a primary indicator of the MC student's coping. Further, school personnel observed that there was greater impact on the non-deployed parent when a strong social support was lacking (Mmari et al., 2010).

Externalizing behavioral problems.

Healthcare-based studies. In the previously discussed studies, increased behavioral referrals and identification for MC children of AD service members during a parental deployment were also observed (Angrist & Johnson, 2000; Gorman, Eide, & Hisle-Gorman, 2010). Specifically, the number of mental and behavioral health visits increased by 11% and behavioral disorders increased by 19% (Gorman, Eide, & Hisle-Gorman, 2010). The results from a healthcare perspective reflect the potentially greater externalizing behavioral challenges during parental deployment, in addition to internalizing behaviors.

Home-based studies. Many of the above-described studies also examined the impact parental deployment has on externalizing behavioral problems. In the meta-analysis from Card and colleagues (2011), a significant, small weighted random-effects

mean effect size of 0.13 within middle childhood was indicated. These results mirror the greater impact for children six to 12 years of age found for academics (Card et al., 2011).

Persian Gulf War. In the previously described study from Kelley (1994), mothers reported increased externalizing behavioral problems prior to and during deployment, in comparison to following the reintegration of the father. In addition, mother's contentment was negatively associated with children's externalizing behavior prior to and after deployment. These results indicate externalizing behavioral problems may be adversely affected by low maternal contentment, a proxy of mental health (Kelley, 1994). However, no statistically significant differences were detected in externalizing behaviors amongst children with a deployed mother, non-deployed mother, or civilian parent (Kelley, 1994).

Operation Desert Shield and Operation Desert Storm. After collapsing scores across time, Kelley and colleagues (2001) found no significant differences for externalizing behavioral problems were detected. Again, a limitation of this study was the lack of data collected during the deployment.

Operation Enduring Freedom and Operation Iraqi Freedom. In addition to internalizing behavior, Lester and colleagues (2010) investigated behavioral adjustment of military children, in relation to parental psychological distress and cumulative months of deployment. As was found for internalizing behavior, parental distress of the civilian and AD parents and cumulative number of months of deployment experienced within the child's lifetime predicted externalizing behavioral problems. In the longitudinal study from Pfefferbaum and colleagues (2011), increases were observed in at risk and clinically

significant status on the parent-reported behavioral symptoms, externalizing problems, and adaptive skills scales.

As was found for internalizing behaviors, Morris and Age (2009) found little impact. Following the completion of the Strengths and Difficulties Questionnaire (SDQ), no differences were observed between children with a parent recently deployed or non-deployed, regarding externalizing behavior. As discussed above, results may be explained by data not being collected during the actual deployment, but shortly after, as well as low reliability coefficients reported for the outcome measure.

School-based studies. Currently, no studies have examined externalizing behavioral problems during a parental deployment within the schools. Therefore, there is currently a lack of research quantifying the degree to which parental deployment impacts externalizing behavioral outcomes of military children in the school setting (Richardson et al., 2011).

Summary.

Internalizing Behavioral Problems. The healthcare- and home-based research studies examining the effects of parental deployment on children's internalizing behavior suggests that there is an adverse association. Specifically, children may display depression, sadness, anxiety, withdrawal, loneliness, and overall poor psychosocial functioning (Card et al., 2010; Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Jensen et al., 1996; Mmari et al., 2010; Pierce et al., 1998). Further, Card and colleagues (2010) indicate that there is a medium association of 0.22 during middle childhood, ranging from age 6 to 12 years. Qualitative school-based studies suggest

school staff observe an increase in social, behavioral, and emotional concerns for MC students that impact school functioning (Chandra et al., 2010b; Mmari et al., 2010).

Externalizing Behavioral Problems. Mixed results were found for externalizing behavioral problems, with earlier studies during the Persian Gulf War, Operation Desert Shield, and Operation Desert Storm, detecting no differences (Kelley, 1994, Kelley et al., 2001). However, the healthcare- and home-based studies conducted during OEF and OIF found evidence of a negative association between parental deployment and externalizing behavioral problems (Angrist & Johnson, 2000; Card et al., 2010; Chandra et al., 2010a; Flake et al., 2009; Gorman et al., 2010). Further, the meta-analysis from Card and colleagues (2011) revealed a small association of 0.13 between deployments and externalizing behaviors for children aged 6 to 12 years. Currently, there are no school-based studies, examining externalizing behavioral problems during parental deployment.

Length of deployment. Like the results from studies examining academic performance, the length within a deployment and across deployments is associated with increased internalizing and externalizing behavior problems (Chandra et al., 2010a; Chandra et al., 2010b; Kelley et al., 2001).

Functioning of non-deployed parent. Home-based studies and qualitative studies indicate that the mental health of the non-deployed parent, specifically depressive symptoms, stress, and maternal contentment, predict child outcomes during parental deployment (Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Kelley, 1994; Kelley et al., 2001; Mmari et al., 2010; Pierce et al., 1998).

Limitations. An important limitation is evident in the research regarding parental deployment impacting internalizing and externalizing behavior. The degree to which deployment impacts these children's behavioral outcomes in the school setting, and the comparison to parent report, has yet to be studied quantitatively. Specifically, the literature reviewed has utilized medical and deployment records and parent report within healthcare- and home-based studies, respectively. Although home-based studies are important to consider, its use may present a unique problem when the focus is either internalizing or externalizing behaviors. In a literature review of informant discrepancies amongst self-, parent-, and teacher-report, De Los Reyes and Kazdin (2005) found that parent-reported internalizing and externalizing behavioral problems of children, with externalizing behaviors to a lesser extent, may be dependent on parental mental health. Specifically, parental depression may create a negative bias when describing internalizing and externalizing behaviors of the child (Chi & Hinshaw, 2002; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Therefore, teacher-reported internalizing and externalizing behavior will be particularly important to consider in addressing this concern. This data will provide a clearer understanding of the impact of parental deployment across multiple environments and informants.

Purpose of Study

There is an adverse effect on military children during parental deployment, particularly in academic achievement, with increased cumulative months across and within deployments producing larger negative effects (Card et al., 2011; Engle et al., 2010; Lyle, 2006; Richardson et al., 2011). Additionally, younger children, aged 6 to 12

years, are impacted to a greater extent in comparison to older children (Card et al., 2011). School personnel have hypothesized decreased academic achievement were due to internalizing and externalizing behavioral problems (Richardson et al., 2011). There is support for increased internalizing and externalizing behavioral problems during parental deployment, within the healthcare- and home-based studies (Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Kelley et al., 2001; Mmari et al., 2010). Additionally, the length of deployment or the number of days a child was separated from the servicemember the previous year was associated with increased behavior problems (Chandra et al., 2010a; Kelley et al., 2001). Further, studies indicate that the mental health of the non-deployed parent is the strongest predictor of child outcomes (Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Kelley, 1994; Kelley et al., 2001; Lester et al., 2010; Mmari et al., 2010; Pierce et al., 1998).

The limitation most evident in research of MC children is the lack of studies examining internalizing and externalizing behavioral problems within the school setting during parental deployment. Further, due to the lack of teacher report, comparisons between teacher and parent ratings has yet to be examined. The use of multiple informants is necessary to understand the impact parental deployment may have on MC children in differing settings (i.e. home and school). Therefore, the purpose of the study was to examine the impact of parental deployment on internalizing and externalizing behavior problems, based on both parent- and teacher-reported behavioral problems, and comparing parent and teacher ratings. Separate analyses were conducted for internalizing

and externalizing behaviors to examine main effects and interactions. The following research questions were examined:

1a. To what extent do MC students currently or recently experiencing parental deployment and MC students not recently nor currently experiencing parental deployment differ in internalizing behavioral problems?

1b. To what extent do parent and teacher ratings differ for MC students in internalizing behavioral problems?

1c. To what extent do deployment status and rater interact to produce differing results for MC students' internalizing behavioral problems?

2. Based on rater, what percentage of MC children in each of the parental deployment groups fall within the average, borderline, and clinical range for internalizing behavioral problems?

3a. To what extent do MC students currently or recently experiencing parental deployment and MC students not recently nor currently experiencing parental deployment differ in externalizing behavioral problems?

3b. To what extent do parent and teacher ratings differ for MC students in externalizing behavioral problems?

3c. To what extent do deployment status and rater interact to produce differing results for MC students' externalizing behavioral problems?

4. Based on rater, what percentage of MC children in each of the parental deployment groups fall within the average, borderline, and clinical range for externalizing behavioral problems?

Chapter 2: Methods

School

Participants were recruited from five elementary schools within a military-connected school district in North Carolina. School demographics were collected for each school, including gender percentages, enrollment by grade level, ethnicity percentages, special education percentages, free and reduced lunch percentages, and English Language Learner percentages. Table 1 provides the data by school.

Participants

All MC students attending the five elementary schools were recruited to participate in the study, including those currently or recently experiencing parental deployment and those who have not recently and are not currently experiencing parental deployment. Previous research has found a medium effect of parental deployment on MC younger children's internalizing and externalizing behavioral problems. Based on the a priori power analysis of a mixed analysis of variance with repeated measures, data needed to be collected from 60 students to detect a medium effect (ES = 0.25) with 80% power. A discussion of the response rates is provided in the procedures. A complete set of data was collected for 53 MC students during this study. The actual power for internalizing behavior problems and externalizing behavior problems were 75% and 83%, respectively.

Student demographic data were collected, including gender, age, grade, ethnicity, number of deployments, and the number of cumulative months of deployment. Table 2 provides student demographic data by group. Additionally, demographic data were

collected for the military parents. Age, gender, ethnicity, marital status, highest level of education, years in military, branch, and component were collected for the military parent. Table 3 provides military parent demographics by group. Also included in Table 3 is demographic information for AD military personnel, as a comparison. Both gender and ethnicity breakdowns are similar to the sample in this study. However, both age, marital status and highest education level differ greatly from the sample. Although age and marital status are expected to differ from the sample, as the primary target were MC children who were school aged, the educational level was unexpected. A larger proportion of the sample had obtained bachelor's and advanced degrees, while a small portion of all AD personnel did so. This may be important to consider when interpreting the results. Age, gender, ethnicity, marital status, and the highest level of education were collected for the civilian parents (Table 4 provides demographics for the civilian parent by group). Recruitment procedures, including procedures to improve response rate, are outlined below.

Measures

Parent questionnaire. Parents completed the parent questionnaire (i.e. demographic survey), including information about both the student and the parents. The above-mentioned demographic data were included on this questionnaire. The demographic data included on the questionnaire were collected in previous research. Further, because the military is a particularly heterogeneous population, it is important to collect demographic data to better describe the sample to understand to what groups the results may generalize to. Cumulative months of deployment was indicated as a mediator

between parental deployment and outcomes; therefore, this variable was an important variable to include. Student demographics that were collected include gender, age, ethnicity, number of deployments experienced in a lifetime, and number of cumulative months of parental deployment experienced in a student's lifetime. Each parent provided the following data: age, gender, ethnicity, marital status, and highest level of education, as well as military status and deployment status, if applicable (Appendix B).

Preschool forms. The two preschool forms from the Achenbach System of Empirically-Based Assessment (ASEBA; Achenbach & Rescorla, 2001) were utilized in the study, including the Child Behavior Checklist 1 ½-5 (CBCL 1 ½-5) and the Caregiver-Teacher Report Form (C-TRF). These forms examine the behavioral functioning of a child aged 1 ½ to 5 years. For both forms, scores are reported as *T* scores, with scores 59 and below, 60 to 63, and 64 or greater interpreted as average, borderline (i.e. at-risk) and clinical level of behavioral problems.

Child Behavior Checklist 1 ½-5 (CBCL 1 ½-5). The CBCL 1 ½-5 of the ASEBA was completed by each child's parent for children 5 years of age and consisted of 100 items. The parent of each MC student completed the TRF. Two syndrome scales, internalizing and externalizing behavior problems scales, will be considered. The internalizing score consists of problems related to the self, including emotionally reactive, anxious/depressed, somatic complaints, and withdrawn. On the other hand, externalizing scores comprise problems related to conflicts with others and expectations for the child, which includes attention problems and aggressive behavior. Adequate psychometric properties for the internalizing and externalizing scores are documented.

Regarding reliability, test-retest reliability, internal consistency, cross-informant reliability, and stability were analyzed and most values ranged from 0.76 to 0.96, meeting the 0.70 reliability standard (AERA, APA & NCME, 1999). The cross-informant reliability, based on the responses from the mother and father, produced the lowest coefficients. However, t scores revealed no significant differences in mean scale scores (Table 5; Achenbach & Rescorla, 2001).

Evidence of content, criterion-related, and construct validity is documented for the CBCL 1 ½-5. Related to content validity, the selection and revision of items is informed by extensive literature reviews, consultation with mental health professionals and special education teachers, and pilot testing with parents, youths and teachers. Additionally, previous versions of the rating scale were developed based on epidemiological findings for 4 and 5-year-old children. Criterion-related validity is evidenced by the CBCL 1 ½-5's ability to discriminate between referred and non-referred children, using odds ratios and discriminant analyses. Children at-risk (i.e. clinically significant range) on the CBCL 1 ½ -5 internalizing and externalizing scales were 6 and 4 times more likely to be referred for behavioral problems, respectively. Related to discriminant analyses, items that did not discriminate strongly were omitted and replaced with new item that better discriminated, yielding a classification of 84.2%.

Construct validity has been documented in studies examining convergent validity, discriminant validity, and predictive validity. Specifically, convergent validity is indicated by high correlations with the Behavior Checklist (r = .58), the Toddler Behavior Screening Inventory (r = .70), and the Toddler Social and Emotional

Assessment internalizing scales (r = .48-.62) and externalizing scales (r = .72). In addition, the CBCL 1 ½-5 externalizing scale scores at age 2 and 3 were associated with diagnoses of Oppositional Defiant Disorder and Conduct Disorder. Regarding discriminant validity, the scores on the CBCL 1 1/2 -5 at age 2 and 3 were not associated with scores on developmental measures, including the Bayley Mental Scale, McCarthy General Cognitive Index, or the Minnesota Child Development Inventory (Achenbach & Rescorla, 2001).

Overall, research suggests the CBCL 1 ½-5 has adequate reliability and validity (Achenbach & Rescorla, 2001). Specifically, the majority of the reliability coefficients meet the 0.70 reliability standards for educational and psychological measures for screening (APA, AERA & NCME, 1999). This includes test-retest, internal consistency, and cross-informant for the externalizing scale. Further, content, criterion, and construct validity are documented (Achenbach & Rescorla, 2001).

Caregiver-Teacher Report Form (C-TRF). The C-TRF of the ASEBA was completed by the child's teacher for children 5 years of age and consisted of 100 items. Adequate psychometric properties for the internalizing and externalizing scores are documented. As stated, teacher report has not been utilized with military students in examinations of deployment impact. However, the parent-report version, the CBCL (Achenbach & Rescorla, 2001) was utilized in multiple research studies described in this paper (Card et al., 2011; Kelley, 1994; Kelley et al., 2001; Lester et al., 2010).

Test-retest reliability, internal consistency, cross-informant reliability, and stability were examined, with most values from 0.77 to 0.92 (Table 6; Achenbach &

Rescorla, 2001). The stability coefficients for the internalizing and externalizing scales, based on a 3-month period, fell below the 0.70 reliability standards for educational and psychological measures for screening (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999). Evidence of content and criterion-related is documented for the C-TRF. Related to content validity, the selection and revision of items is informed by extensive literature reviews, consultation with mental health professionals and special education teachers, and pilot testing with parents, youths and teachers. Criterion-related validity is evidenced by the C-TRF's ability to discriminate between referred and non-referred children, using odds ratios and discriminant analyses. Children at-risk (i.e. clinically significant range) on the C-TRF internalizing and externalizing scales were 4 and 6 times more likely to be referred for behavioral problems, respectively. Related to discriminant analyses, items that did not discriminate strongly were omitted and replaced with new item that better discriminated, yielding a classification of 74.3% (Achenbach & Rescorla, 2001).

Overall, research suggests the C-TRF has adequate reliability and validity (Achenbach & Rescorla, 2001). Specifically, the majority of reliability coefficients meet the 0.70 reliability standards for educational and psychological measures for screening (AERA, APA, & NCME, 1999), including test-retest, internal consistency, and stability for the internalizing scale. Regarding validity, content and criterion reliability have been established (Achenbach & Rescorla, 2001).

School-age forms. The two school-age forms from the ASEBA (Achenbach & Rescorla, 2001) will be utilized in the study, including the Teacher Report Form (TRF) and the Child Behavior Checklist 6-18 (CBCL). Like the preschools forms, these rating scales examine the behavioral functioning of children aged 6 to 18 years. Additionally, *T* scores are interpreted as the preschool forms, with scores 59 and below, 60 to 63, and 64 or greater interpreted as average, borderline (i.e. at-risk) and clinical level of behavioral problems (Achenbach & Rescorla, 2001).

Child Behavior Checklist 6-18 (CBCL 6-18). The CBCL 6-18 of the ASEBA was completed by each child's parent, for children aged 6 to 18 years and consisted of 113 items. The two syndrome scales, internalizing and externalizing, were considered. The CBCL 6-18 (Achenbach & Rescorla, 2001) has previously been utilized in multiple research studies described in this paper (Card et al., 2011; Kelley, 1994; Kelley et al., 2001; Lester et al., 2010).

Adequate psychometric properties for the internalizing and externalizing scores are documented. Test-retest reliability, internal consistency, cross-informant reliability, and stability were discussed, with all values from 0.70 or greater (Table 7; Achenbach & Rescorla, 2001). Evidence of content, criterion-related, and construct validity is documented for the CBCL 6-18. Related to content validity, the selection and revision of items is informed by extensive literature reviews, consultation with mental health professionals and special education teachers, and pilot testing with parents, youths and teachers. Children at-risk (i.e. clinically significant range) on the CBCL 6-18 internalizing and externalizing scales were 8 and 10 times more likely to be referred for

behavioral problems, respectively. Related to discriminant analyses, items that did not discriminate strongly were omitted and replaced with new item that better discriminated, yielding a classification of 87%. Construct validity has been documented with convergent validity research. Specifically, convergent validity is indicated by high correlations with the Behavior Assessment Scale for Children (BASC) for both internalizing and externalizing scores, considering ratings from both mother and father (Table 5; Achenbach & Rescorla, 2001).

Overall, research suggests the CBCL 6-18 has adequate reliability and validity (Achenbach & Rescorla, 2001). Specifically, all reliability coefficients, including test-retest, internal consistency, cross-informant, 12-month stability and 24-month stability, meet the 0.70 reliability standards for educational and psychological measures for screening (AERA, APA &NCME, 1999).

Teacher Report Form (TRF). The TRF of the ASEBA was completed by teachers familiar with the students for children aged 6 to 18 years and consisted of 113 items. Again, the two syndrome scales, internalizing and externalizing behaviors, were considered. As stated in the discussion of the C-TRF, teacher report has not been utilized with military students in examinations of deployment impact. However, the parent-report version, the Child Behavior Checklist 6-18(CBCL 6-18; Achenbach & Rescorla, 2001) was utilized in previous research studies (Card et al., 2011; Kelley, 1994; Kelley et al., 2001; Lester et al., 2010).

Adequate psychometric properties for the internalizing and externalizing scores are documented in the ASEBA manual. Test-retest reliability, internal consistency, cross-

informant reliability, and stability were discussed, with most values from 0.86 to 0.95 (Table 8). Evidence of content, criterion-related, and construct validity is documented for the TRF. Related to content validity, the selection and revision of items is informed by extensive literature reviews, consultation with mental health professionals and special education teachers, and pilot testing with parents, youths and teachers. Criterion-related validity is evidenced by the TRF's ability to discriminate between referred and non-referred children, using odds ratios and discriminant analyses. Children at-risk (i.e. clinically significant range) on the C-TRF internalizing and externalizing scales were 4 times more likely to be referred for behavioral problems. Related to discriminant analyses, items that did not discriminate strongly were omitted and replaced with new item that better discriminated, yielding a classification of 85%. Construct validity has been documented in over 4000 studies examining associations with similar variables, prediction and evaluation of outcomes, and consistency with theory. Specifically, convergent validity is indicated by high correlations with the Behavior Assessment Scale for Children (BASC) for both internalizing (r = 0.75) and externalizing scores (r = .74; Achenbach & Rescorla, 2001).

Overall, research suggests the TRF has adequate reliability and validity (Achenbach & Rescorla, 2001). Specifically, the reliability coefficients, including test-retest, internal consistency and 2-month stability, meet the 0.70 reliability standards for educational and psychological measures for screening (AERA, APA & NCME, 1999). Further, content, criterion, and construct validity are documented (Achenbach & Rescorla, 2001).

Procedures

The superintendent was approached to allow schools to participate in the study and give written approval. Following approval from the superintendent, the Director of Student Support Services sent a letter to the parents of MC students at the five schools with the largest number of MC students. This letter outlined details and the importance of this study to support MC students within the district (Appendix C). A total of 1,257 district consent forms were sent to parents, with 128, or 10.2%, returned. For parents who gave consent to be contacted by the researcher, study consent forms outlining the study purpose and procedures were sent home (Appendix D). Additionally, the parent questionnaire and the CBCL form, appropriate for the students' ages, were sent to the parents, and the TRF was distributed and completed by the teacher. Of the 128 packets sent to parents, a total of 55 completed packets, including parent and teacher measures completed, or 43%, were returned. Despite low response rate from the initial letter, several strategies were employed to target response rate.

To improve the parent and teacher response rate, several strategies associated with improve response rate, were utilized. First, the use of a mailing method has consistently shown to improve response rate over web-based methods (Cho, Johnson, & VanGeest, 2013; Van Horn, Green, & Matrinussen, 2009). For example, Cho and colleagues (2013) found that the response rates for mail and web-based methods were 57% and 38%, respectively. In addition to the use of a mailing method, advanced notice, personalization, topic salience, identification numbers, and university sponsorship are positively associated with response rate (Anseel, Lievens, Schollaert, & Choragwicka, 2010). By

first mailing a consent form, parents had advanced notice of the data collection. Additionally, teachers were given advanced notice of the study procedures prior to mailing consent forms. Personalization refers to the use of letters or meetings introducing the researcher. A letter was included in the consent form mail to introduce the researcher, as well as informing potential participants of her military spouse status. The topic of the study, impact on deployment of military students, is relevant (i.e. salient) to both parents and teachers. Additionally, study identification numbers were given to all students to maintain confidentiality. Further, the letter sent with the consent form described the study's affiliation with a university.

Monetary incentives are associated with an additional 12% response rate, in comparison to non-monetary incentives (Cho et al., 2013). Along with providing participating schools with a $100 donation, lottery incentives were used to increase response rate from both parents and teachers (Laguilles, Williams, & Saunders, 2011). For each child, a completed consent form, questionnaire and rating scale, resulted in an entry into the raffle for the parent, with the following 7 prizes: one $50 gift card, two $25 gift cards, and four $10 gift cards. In addition, teachers were entered into a raffle with the same prizes for each child they completed the rating scale for.

Analysis

Mixed analysis of variance design. To answer research questions 1a through 1c and 3a through 3c, two separate analyses were conducted for internalizing behavioral problems and externalizing behavioral problems. Although the plan for analysis was a mixed analysis of covariance (ANCOVA) design, also known as a two-factor split plot

ANCOVA, the covariates, age and months of parental deployment experienced, were subsequently excluded due to a lack of significance in the models after analyzing both internalizing and externalizing behavioral problems. Therefore, a mixed analysis of variance (ANOVA) model was conducted. Mixed effects ANOVA models is a combination of the one-factor repeated measures and a two-factor fixed effects model. In other words, subjects serve as their own controls for the repeated factor, but only fall into one level of the non-repeated factor. Therefore, one of the factors is a within-subjects factor (i.e. repeated factor) and the other factor is a between-subjects factor (i.e. fixed factor; Lomax, 2007).

In the current study, the repeated, or within-subjects, factor consisted of two levels. Specifically, these levels were different raters, including the parent and teacher ratings. The fixed, or between-subjects, factor also consisted of two levels. The levels were determined by the student's parental deployment status, including a current or recent parental deployment and no current or recent parental deployment. Table 9 provides a schematic of the study. As previously stated, the following hypotheses and steps of analysis were conducted for internalizing behavior problems and externalizing behavioral problems, separately.

Hypotheses.

Between-subjects. For the fixed factor of parental deployment status, the null hypothesis of is that group means are equal; the alternate hypothesis is that group means are not all equal.

Within-subjects. For the repeated factor of rater, the null hypothesis of is that the mean ratings of the behavioral problem from the parents and teachers are equal; the alternate hypothesis is that the mean ratings of the behavioral problem from the parents and teachers are not all equal.

Interaction. Regarding the interaction, the null hypothesis states that all combinations of the two factors, parental deployment status and rater, are equal. The alternative hypothesis is that all interaction combinations of parental deployment status and reporting agent are not equal.

Assumptions. A mixed ANOVA model has the following four assumptions: independence, sphericity, homogeneity of variance (HOV), and normality.

Independence. Independence refers to observations being independent of one another. By the nature of the design, with the inclusion of a repeated measures component, the assumption of independence is violated; however, the additional assumption of sphericity is used to estimate the impact of the dependence between levels of the IV.

Sphericity. Sphericity assumes that the variances of the difference scores for each pair of factor levels is the same. Sphericity is demonstrated through a non-significant p-value using Mauchley's test of sphericity. A non-significant p value indicates no significant difference between the variances of the different scores for each pair of factor levels. The test is not particularly robust to violations of sphericity; Lomax (2007) suggests considering the usual *F* test, Geisser-Greenhouse Conservative F test and adjusted *F* test in cases where sphericity is violated. Sphericity is tested when you have

greater than two levels of the repeated measure. Because there are only two levels of the repeated measure, raters, only HOV will be considered.

HOV. HOV refers to equal variance for each level of the independent variables. HOV is examined using Levene's Test of Equality of Error Variances. A non-significant p value indicates that there are no statistical differences between the variances for each independent variable level, indicating that the assumption is met. Violations to HOV are minimal with equal or nearly equal groups; however, violations may result in bias in error terms and increased likelihood of Type I and/or Type II error (Lomax, 2007).

Normality. Normality states that the data follows a normal distribution pattern (i.e. bell curve). In the case of the mixed ANOVA model, normality is tested by cell (i.e. each combination of the fixed and repeated factors). Therefore, normality will be tested for each of the 4 cells in the current study. Normality will be tested using two approaches, including statistical analysis and graphic. First, the Shapiro-Wilk's test of normality will be used, with a non-significant p-value suggesting the assumption is met. Second, frequency distributions of the dependent variable, internalizing or externalizing behavioral problems, will be constructed and visually inspected for a normal distribution. Violations to normality in a mixed ANOVA model are minimal with equal or nearly equal group sizes. If group sizes are not equal or nearly, there are substantial effects (Lomax, 2007).

Between-subjects. The main effects of the fixed factor, parental deployment status, was analyzed by comparing each factor's p-value to the alpha level of .05. A significant p-value, less than .05, leads to the rejection of the null hypothesis, suggesting

the two group means are not equal. However, a non-significant p-value indicates the group means are equal; thus, one fails to reject the null hypothesis.

Within-subjects. The main effects of the repeated factor, raters, was analyzed through the comparison of the factor's p-value to the alpha level of .05. A significant p-value, less than .05, leads to the rejection of the null hypothesis, suggesting the means of the raters are equal. However, one fails to reject the null hypothesis with a non-significant p-value, indicating the group means are not equal.

Interactions. The interaction p-value was compared to the alpha level of 0.05. A non-significant p-value suggests failing to reject the null hypothesis, indicating all the interaction combinations of parental deployment status and rater are equal. However, a significant p-value will indicate to reject the null hypothesis, suggesting there are differences amongst the interaction combinations of parental deployment status and rater. If the interaction effect was significant, main effects were no longer be the focus and results were interpreted considering the interaction effects.

Effect size. To examine the effect size of the main and interaction effects, the provided partial eta-squared was interpreted. This effect size estimates the isolated proportion of variance in the dependent variable, internalizing or externalizing behavioral problems, explained by a specific factor.

Frequency and percentage. Research questions 2 and 4 were examined through the calculation of the frequency and percentage of MC students that fell within each of the three ranges, including average, borderline and clinical, based on group membership for parental deployment status.

Chapter 3: Results

Internalizing Behavioral Problems

Descriptive statistics for ratings of internalizing behavioral problems from both parent and teacher are provided by group in Table 10.

Mixed ANOVA model.

Assumptions.

Independence. As previously stated, by design, the mixed ANOVA violates the assumption of independence due to the inclusion of the repeated factor of rater.

Sphericity. With only two levels of the repeated factor, rater, sphericity is not examined.

HOV. Results from the Levene's Test of Equality of Error Variances are provided in Table 12. The non-significant p-value indicates no significant differences in the error variances. Therefore, the assumption of HOV is met.

Normality. Results from the Shapiro-Wilk's test of normality are provided in Table 13. Three of the four p-values were significant, suggesting the data in those cells do not follow a normal distribution. Additionally, frequency distributions were constructed of each cell and provided in Figure 1. The visual analysis suggests the data are skewed to the left, with larger numbers of students falling on the lower end of the distribution. However, as discussed in the plan of analysis, there is a minimal effect on the results in a mixed ANOVA model when the groups are equal or nearly equal. With nearly equal groups, the violations to normality will minimally effect the results (Lomax, 2007).

Main effects. From Table 14, the results from the within-subjects suggest a significant main effect of rater ($F_{rater} = 4.086$, $df = 1$, $p = .049$). The resulting partial eta-squared, the isolated proportion of variance in internalizing behavioral problems explained by the rater, is 7.4% ($\eta^2 = .074$). In the examination of the means for raters, parents rated MC students higher on internalizing behavioral problems than teachers. Specifically, parents scored an average of 3.88 points higher than teachers. However, results indicate there is a non-significant main effect of parental deployment status, with this factor explaining only 4.1% of the variance in internalizing behavioral problems ($F_{status} = 2.195$, $df = 1$, $p = .145$, $\eta^2 = .041$). Additionally, the interaction between the parental deployment status and rater is not significant, with no variance explained ($F_{status \times rater} = .002$, $df = 1$, $p = .968$, $\eta^2 = .000$).

Classification. Table 11 provides the frequency and percentage for the MC students that fell within the average, borderline and clinical range on internalizing behavioral problems, by group. A similar proportion of each group fell within the three classification ranges on parent ratings, with most MC students falling within the average range. Specifically, based on parent report, approximately 81% of students fell in the average range in both the current or recent parental deployment group and the no current or recent parental deployment group. Similarly, the number of MC students that fell within each range was similar in both groups. Overall, most MC students fell within the average range in both groups.

Externalizing Behavioral Problems

Descriptive statistics for ratings of externalizing behavioral problems from both parent and teacher are provided by group in Table 15.

Mixed ANOVA model.

Assumptions.

Independence. The mixed ANOVA violates the assumption of independence due to the inclusion of the repeated factor of rater.

Sphericity. Sphericity is not examined due to the inclusion of only two levels of the repeated factor, rater.

HOV. Results from the Levene's Test of Equality of Error Variances are provided in Table 17. The non-significant p-value indicates no significant differences in the error variances. Therefore, the assumption of HOV is met.

Normality. Results from the Shapiro-Wilk's test of normality are provided in Table 18. Three of the four p-values are significant, suggesting the data in those cells do not follow a normal distribution. Additionally, frequency distributions were constructed of each cell and provided in Figure 2. Like internalizing behavior, the visual analysis suggests the data are skewed to the left, with larger numbers of students falling on the lower end of the distribution. However, as discussed in the plan of analysis, there is a minimal effect on the results in a mixed ANOVA model when the groups are equal or nearly equal. The violations to normality minimally affected the results, with nearly equal groups (Lomax, 2007).

Main effects. Table 19 provides the results for the Mixed ANOVA. The results for the between-subjects factor suggest a non-significant main effect of parental deployment status, with no variance of externalizing behavioral problems explained ($F_{status} = .522$, $df = 1$, $p = .473$, $\eta^2 = .000$). In addition, a non-significant main effect of rater, with a minimal variance explained, is indicated for the within-subjects factor ($F_{rater} = .018$, $df = 1$, $p = .895$, $\eta^2 = .01$). Additionally, the interaction between the parental deployment status and rater is not significant ($F_{status\ x\ rater} = 1.438$, $df = 1$, $p = .236$, $\eta^2 = .027$).

Classification. The frequency and percentage for the MC students that fell within the average, borderline and clinical range on externalizing behavioral problems, by group, are provided in Table 16. Like internalizing behavioral problem classification, the proportion of each group within the three classification ranges on parent ratings were similar. Further, most MC students fell within the average range. Specifically, based on parent report, approximately 85% and 93% of students fell in the average range for the current or recent parental deployment group and the no current or recent parental deployment group, respectively. Based on teacher report, 100% of MC students currently or recently experiencing a parental deployment fell within the average range, while 85.2% of those without a current or recent deployment scored in the average range. Across groups and rater, most MC students fell within the average range.

Chapter 4: Discussion

Internalizing Behavioral Problems

Current Study.

Parental Deployment Group. Results from the current study indicate a minimal effect of parental deployment on internalizing behavioral problems, accounting for a mere 4% of the variance of internalizing behavioral problems explained by deployment group.

Rater. The results suggest the rater may affect the ratings of internalizing behavioral problems, with parents rating MC students approximately 4 points higher than teachers. However, because parents and teachers base their ratings on differing settings, differences are expected. In fact, this is the importance of a multi-informant approach to this area of research and further supports the need for additional school-based studies.

Classification. Despite a lack of a significant difference between deployment groups, a large proportion of MC students across both deployment groups and raters fell within the average range of internalizing behavioral problems. Specifically, 81.1% and 88.7% of MC students were rated with average levels of internalizing behavioral problems, based on parent and teacher report, respectively.

Previous Research. The results for internalizing behavioral problems from the current study do not support conclusions from previous research. Previous home-based research indicates an adverse association, with only one study with methodological concerns detecting no differences (Morris & Age, 2009). Specifically, those studies found that children displayed depression, sadness, anxiety, withdrawal, loneliness, and overall

poor psychosocial functioning (Card et al., 2010; Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Jensen et al., 1996; Lester et al., 2010; Mmari et al., 2010; Pierce et al., 1998). Furthermore, in Card and colleagues' (2010) meta-analysis, a medium association of 0.22 during middle childhood, ranging from age 6 to 12 years, was suggested. Specific to school-based studies, qualitative studies suggest school staff observes increased social, behavioral and emotional concerns (Chandra et al., 2010b; Mmari et al., 2010).

Externalizing Behavioral Problems

Current Study.

Parental Deployment Group. Results from the current study suggest minimal effect of parental deployment on externalizing behavioral problems, with only 1% of the variance of externalizing behavioral problems explained by parental deployment status.

Rater. Unlike internalizing behavioral problems, the results indicate the rater does not affect the ratings, with parents and teachers rating similarly for externalizing behavioral problems during parental deployment.

Classification. Like internalizing behaviors, most MC students were rated with average levels of externalizing behavioral problems. Specifically, 96.2% and 92.7% of MC students fell within the average range, based on parent and teacher ratings, respectively.

Previous Research. The results from the current study mirror results from the earlier studies during the Persian Gulf War, Operation Desert Storm and Operation Desert Shield. Those home-based studies examining externalizing behavioral problem

indicated no differences (Kelley, 1994, Kelley et al., 2001). On the other hand, the healthcare- and home-based studies conducted during OEF and OIF found evidence of a negative association between parental deployment and externalizing behavioral problems (Angrist & Johnson, 2000; Card et al., 2010; Chandra et al., 2010a; Flake et al., 2009; Gorman et al., 2010). Further, the meta-analysis from Card and colleagues (2011) revealed a small association of 0.13 between deployments and externalizing behaviors for children aged 6 to 12 years.).

Length of Deployment

In the current study, the average cumulative months of deployment for those with current or recent deployment was 19 months, with a range of 6 to 54 months. For those who were not currently nor who had recently experienced a deployment, the mean months of deployment experienced was approximately 15 months, with a range of 0 to 40 months. Although Richardson and colleagues (2011) were specific to academics, it is noteworthy that the deployment group was within the 19-month range, while the other group fell within the seven to 18 months. However, no significant differences were found, despite the difference in cumulative months of deployment. This suggests the association of cumulative months of deployment experienced with the impact of parental deployment on MC students' behavioral problems needs further examination, particularly in relation to FANT. It is hypothesized that increased separation may result in poorer attachment to the service member and a less secure family system, leading to poorer child outcomes.

Regarding academics, the results from Richardson and colleagues (2011) suggest MC elementary and middle school students who experienced seven to 18 cumulative months of parental deployment and 19 cumulative months or more of parental deployment scored significantly lower in academics, as compared to those experiencing less than seven months. Specifically, seven to 18 months and 19 months or greater produced a small and medium effect, respectively. Similarly, previous research of behavior indicates that increased days away from a parent the previous year and the length of the deployment is positively associated with behavioral problems.

Educational Level

Across both internalizing and externalizing behavioral problems, the results indicate a lack of an association between parental deployment status groups and behavioral problems. However, the majority of previous research found a positive association between parental deployment and behavioral problems. Educational level may explain the differences from previous research. The educational level of the sample was significantly higher than the demographic data of all AD military personnel, with a large portion with bachelor's and advanced degrees. This is important because one academic and one home-based behavioral study found education level to predict child outcomes during parental deployment. Specifically, Lyle (2006) found a greater impact on largescale academic assessment scores for less educated parents, within a sample of AD personnel. On the behavioral side, the results from Flake and colleagues (2009) indicate the educational level of both parents as a significant predictor of psychosocial health, with lower levels of education associated with poorer outcomes. The association

between educational level of parents and MC children's academic and behavior during parental deployment may be due to parents with higher levels of education understanding how to access resources, such as financial and medical (e.g. mental health) resources. In addition to educational level of the sample, the nature of OEF and OIF further explains the differences in results from previous research.

Operation Enduring Freedom and Operation Iraqi Freedom

Most of the reviewed studies were conducted during OEF and OIF, prior to 2009; 100%, 67%, and 56% of the academic, healthcare, and behavioral studies, respectively, were conducted during OEF and OIF. OEF and OIF differed markedly in fundamental characteristics.

Length and frequency. This conflict was the United States' largest and longest military engagement since the Vietnam War. Longer, more frequent deployments characterized OEF and OIF. Deployments were longer than previous conflicts and the established benchmark of 12 months. Further, 40% of servicemembers deployed more than once, with over 263,000 experiencing two or more deployments.

Dwell time. The time between returning from a deployment and the subsequent deployment is referred to as dwell time. The benchmark for AD soldiers is a minimum of two years and for National Guard and Reservists, following a 12-month deployment, servicemembers are expected to be home a minimum of five years. However, the dwell time during OEF and OIF extended beyond those benchmarks (Institute of Medicine, 2010).

Location. The location of the deployments during GWOT, Iraq and Afghanistan, were also particularly kinetic in comparison to current tours, meaning there was a higher probability of combat or contact with enemies. The nature of the deployments during OEF and OIF, markedly different from previous an current deployment, presents problems when considering attachment and family systems through the lens of FANT.

Family Attachment Network Theory.

Attachment bonds. As previously discussed, FANT proposes that a secure attachment with the non-deployed parent during a parental deployment, and the skills to reestablish a secure family system and maintenance of routines supports children's adjustment. Specifically, Riggs and Riggs (2011) suggest if a deploying parent, whether mother or father, has been an important attachment figure, the deployment will impact the child greater. However, the impact may be mitigated if the non-deploying parent and the child have a secure attachment. On the other hand, if a deploying parent has not been a significant attachment figure, children will respond with greater resilience. The lack of communication during OEF and OIF may have made maintaining an attachment to servicemembers difficult, if not impossible. This was further complicated by the increased time away from home, with longer deployments, and limited dwell time.

Family systems. Riggs and Riggs (2011) propose increased quality and quantity in communication are beneficial. Therefore, the lack of communication during OEF and OIF presented problems for the key determinates of the impact of parental deployment on MC children, resulting in a lack of quality communication with the deployed parent. Further, increases in rates of severe combat-related injury, including hearing loss and

Traumatic Brain Injury during OEF and OIF, higher rates of mental health problems for those returning from Iraq or Afghanistan, increase in substance abuse, increase in suicide, and increased child maltreatment and neglect may further hinder the establishment of a secure base and family system within the dwell time. Subsequent deployments may have further impacted the establishment of a secure family system.

Functioning of non-deployed parent. The above-described challenges of deployment length and frequency, limited dwell time, and limited communication, resulted in negative consequences for families, including the previously mentioned rates (Institute of Medicine, 2010). In fact, previous research supports the importance of the non-deployed parent's functioning. Specifically, home-based studies and qualitative studies indicate that the depressive symptoms, stress, and maternal contentment, predict child outcomes during parental deployment (Chandra et al., 2010a; Chandra et al., 2010b; Flake et al., 2009; Kelley, 1994; Kelley et al., 2001; Mmari et al., 2010; Pierce et al., 1998). With the understanding of the unique characteristics, challenges, and consequences of OEF and OIF, as well as the educational level of the parents included in the sample, the differences in comparison to previous research is better understood. However, it is important to consider the limitations within the current study as potential reasons for differences in

Limitations

Response rate. Overall response rate was lower than anticipated or desired; therefore, the data may be less representative of the population due to low response rate.

Although response rate was low, the overall military population and the sample are similar in demographic variables.

Power. Due to low response rate, the power of the mixed ANOVA model for internalizing behavioral problems fell below 80%, with the actual power of 75%. Therefore, the lack of significant main effect of parental deployment status and/or interaction effect may be due to insufficient power. Although, the previously discussed differences in deployment characteristics better explain the differing results found in the current study in comparison to the studies included in the literature review.

Voluntary participation. Third, and related to recruitment, because participation was voluntary, the results may be biased. For example, parents of students with no behavior problems may be more willing to share behavioral functioning within the study; on the other hand, parents with children who have been impacted behaviorally at home, due to parental deployment, may be less willing to participate.

Variables. Three variables, including academic data, mental health of the non-deployed parent, and rank, were not collected in the current study.

Academics. Previous research indicated academics was impacted by parental deployment. Unfortunately, due to district decisions, no academic data were collected. With the addition of academic data, the mediating effect of behavior between parental deployment and academics could be examined.

Functioning of non-deployed parent. Along with the length within deployment and across deployments, previous home-based research indicates the functioning of the non-deployed parent is associated with the MC child's behavior. Specifically, mental

health of the non-deployed parent, such as low maternal contentment (i.e. depressive symptoms) and stress, were positively associated with children's internalizing and externalizing behavior problems during parental deployment (Chandra et al., 2010a; Kelley, 1994; Kelley et al., 2001; Lester et al., 2010). Further, FANT incorporates the non-deployed parent's mental health as a key determinate of the child's functioning during a parental deployment. Although cumulative number of months was collected in this study, no self-report data was collected from the non-deployed parent. Due to district policies and the decision of the superintendent, data collected was limited to demographics and parent and teacher ratings of MC student behavior. Like academics, the mediation of the mental health of the non-deployed could be evaluated, lending to a more comprehensive study of the impact of parental deployment on MC students' internalizing and externalizing behavior problems and its role in FANT.

Rank. Rank is important because based on educational levels reported, the sample may have consisted of a greater proportion of officers when compared to AD data, which indicates 82.3% and 17.7% are enlisted and officers, respectively (DoD, 2016). With the collection of rank, both variables can be statistically tested as covariates.

Future Research

FANT proposes that a secure attachment with the non-deployed parent during a parental deployment, and the skills to reestablish a secure family base and maintenance of routines supports children's adjustment. Conversely, a secure attachment to the deployed parent and lack of a secure attachment to the non-deployed parent, lack of flexibility to adapt to structural and organizational changes, and lack of maintaining routines

contribute to an adverse effect on indicators of behavior. Based on the family attachment network model, a positive, secure attachment to the non-deployed parent is an important component for adjustment to parental deployment (Riggs & Riggs, 2011). Future research should address populations and variables that relate to the successful establishment and maintenance of attachment bonds and a secure family base and system.

Populations. The negative consequences discussed above apply to all servicemembers who deployed during OEF and OIF; however, other populations within the military may be affected to a greater extent due to additional challenges. Therefore, it is important for future studies to examine this topic within those populations, including MC students with dual military parents, single parents, and Reserve components (i.e. National Guard and Reserves).

Dual military families. The impact of a deployment within dual military families has yet to be addressed; however, with the demands on service members in terms of time and energy, having two military parents may present a unique stressor. In particular, a secure family base and system, a component of FANT, may be difficult to establish with increased separations from one or both parents.

Single parents. Regarding single parents, the results from Lyle (2006), although academically focused, suggest MC children of single parents may be impacted to a greater extent than those with married parents. Unlike children with married parents, separation of MC children from single parents results in guardianship to someone other than a parent, perhaps with the children having to relocate. Within the FANT framework,

the family system must completely alter to adapt to the changes during a parental deployment.

National Guard and Reserves. GWOT was the first extensive conflict relying on an all-volunteer force, with a large dependence on National Guard personnel and Reservists, in comparison to previous wars (RAND, 2008). This was due to a steady decline in the total number of troops since the early 1990s, despite an increase in the number of operational deployments, especially peacekeeping and humanitarian. This pre-existing shortage was then exacerbated by OEF and OIF (Institute of Medicine, 2010). Unfortunately, only one study in previous research included NG and Reserves and the focus was on academics (Richardson et al., 2011). Therefore, no studies examined the impact of parental deployment on behaviors of NG and Reservists' children, despite their unique challenges during deployment, specifically the deployment characteristics and deployment support.

Deployment characteristics. The deployment cycle for National Guard and Reserve soldiers, although similar to AD soldiers, is a far departure from their everyday life. Typically, they have a civilian job, and separation due to training is minimal, occurring approximately one weekend a month and two weeks, once a year. However, once servicemembers are notified of an upcoming deployment, there is increased separation due to training and briefings in preparation. Additionally, deployments may include Individual Augmentee Deployment, in which soldiers are attached to unit's other than their own to augment another unit during deployment. This often involves shorter notification and a lack of specific information prior to and during deployment

(Deployment n.d.). Further, deployment assistance may be more difficult to access in comparison to AD servicemembers. Taken together, the differences between the deployment cycle of AD and NG and Reserves, present unique stressors for the latter. They lack the same unit and community support present to AD families, resulting in difficulty of maintaining family systems and establishing a secure base without the servicemember, which are critical to FANT.

Deployment support. Support for AD units primarily comes from two avenues, including Family Readiness Groups (FRG) and installation (i.e. base) resources. The purpose of an FRG is to assist the commander to enhance family readiness, encourage self-sufficient through provision of information, referral assistance and mutual support, and provide a network of communications among families, chain of command and community resources. The communication includes providing feedback to command and disseminate official, accurate information from command to families, particularly during deployment. FRGs are a continual program for AD unit, thus creating relationships and comradery amongst the families. Those relationships and established avenues of communication become particularly helpful during a deployment.

The second form of support is accessed through an installation, often through the Fleet and Family Support Center. Depending on the branch, active military bases have a Navy Fleet and Family Support Center, Marine Corps Community Service Center, Air Force Family Service Center, or an Army Community Service Center. These centers offer a wide variety of services, free of charge. Services often include financial management assistance, exceptional family member program, information and referral, career resource

center, individual and family counseling, family advocacy, and emergency transportation of food, rent and utilities. Together, FRG programs and the Fleet and Family Support Centers support families of AD servicemembers in each deployment phase and are readily available on the base. Unfortunately, beyond the adjustment to separation, NG and Reserve servicemembers are often unable to access these resources in the same way.

Families of those in the National Guard or Reserves do not have continuous family readiness programs activated. It is only once an NG or Reserve unit receives deployment orders that a Family Assistance Center (FAC) is activated. The FAC provides information regarding resources available within the state for military, including military, deferral, state and local civilian support. In addition, the FAC provides government forms and assists with the completion of those forms (Deployment, n.d.). Although this may provide the necessary support for some families, many families may not live near a FAC and are unable to access resources. Further, the FAC may not be activated during an Individual Augmentee Deployment, discussed above. Therefore, these families may have to adjust to a family member's deployment independent from the military.

Variables. Several variables are important to consider in future research to understand the impact of parental deployment. In addition to the variables discussed, including academics and mental health of the non-deployed parent, other variables must be considered in future studies.

Type of separation. Multiple parents who participated in the study added comments stating that although the servicemember was not formally deployed, they were

experiencing separations due to other reasons, including training over an extended period, temporary duty (TDY), or being stationed overseas unaccompanied. Unaccompanied TDY refers to a servicemember temporarily stationed on a base without any dependents (i.e. spouse, children). Similarly, soldiers may receive orders to be stationed overseas, accompanied or unaccompanied. Typically, if the change in station is unaccompanied, families are separated for 12 months. The impact of these differing reasons for separation has yet to examined. However, it is important, as the impact may differ across these separations. In relation to FANT, the communication differences in the types of separations may benefit or hinder the family system.

Employment status of non-deployed parent. Additional data should be collected through parent report. The employment status of the non-deployed parent may be important to consider, as there may be differences amongst parents who stay at home, work part time, or work full time. When considering FANT, the employment status may impact the attachment of the MC child and the non-deployed parent. Also related to FANT components, the quantity of communication with the deployed parent may mediate the impact of parental deployment, as was true within GWOT. Finally, a survey of the level of resources utilized by the non-deployed parent and children should be collected in future research. With the inclusion of these variables, as well as other populations and study design, a more comprehensive understanding of the impact of parental deployment on MC students can be developed.

Conclusion

The current study was the first to quantitatively examine the impact of parental deployment on internalizing and externalizing behavioral problems within the school and home setting, allowing for comparison of those two. The results provide initial evidence of the minimal impact parental deployment has on MC children from both parent and teacher perspectives. However, there is vast number of studies that must be conducted and repeated to have a clear understanding of the affect of parental deployment. With the study of the additional variables and populations discussed above and a better understanding, educators can better support MC students in their schools.

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Table 1

School Population Demographics by School

	Grades Served	Ethnicity	Free/ Reduced Lunch	Special Education	English Language Learner
School 1 (DS)	PK-5	White (39.3%) A.A (26.3%) Latino (24.4%) Asian (1.3%) American Indian (1.6%) Native Hawaiian/ Other (7.1%)	52.9%	13.6%	8.6%
School 2[a] (SG)	PK-5	White (41%) A.A (29%) Latino (8%) American Indian (21%) Other (1%)	73.2%	19.9%	5.3%
School 3 (SC)	PK-5	White (20.6%) A.A. (33.9%) Latino (37.3%) Asian (1.88%) American Indian (1.92%) Other (4.96%)	97.9%	12.6%	18.5%

School 4 [a] (RH)	PK-5	White (49%) A.A (37%) Latino (10%) American Indian (3%) Other (2%)	30.5%	11.3%	2.2%
School 5 (UC)	PK-5	White (21.5% A.A (45.4%) Latino (21.9%) Asian (1.3%) American Indian (2.9%) Other (6.6%)	97.1%	9.9%	7.7%

Table 2

Student Demographics by Deployment Group

	Gender	**Ethnicity**	**Grade**	**Age**	**Educational Setting**	**Number of Deploy.**	**Months of Deploy.**
Current or Recent	Male (50%) Female (50%)	White (61.5%) A.A (15.4%) Latino (19.2%) Asian (3.8%)	M = 1.15 SD = 1.41	M = 6.88 SD = 1.56	Regular/ General Education (100%)	M = 2.54 SD = 1.61	M = 18.96 SD = 11.82
No Current or Recent	Male (44.4%) Female (55.6%)	White (70.4%) A.A (25.9%) Asian (3.7%)	M = 1.81 SD = 1.98	M = 7.44 SD = 1.93	Regular/ General Education (92.6%) Self-Contained (7.4%)	M = 1.73 SD = 1.31	M = 14.96 SD = 10.02

Table 3

Military Parent Demographics by Deployment Group

	Gender	**Ethnicity**	**Age**	**Marital Status**	**Highest Level of Educ.**	**Years in Military**	**Branch**	**Component**
Current or Recent	Male (100%) Female (0%)	White (65.4%) A.A (11.5%) Latino (19.2%) Asian (3.8%)	M = 32.7 SD = 5.4	Single (3.8%) Married (84.6%) Divorced (11.5%)	HS Graduate (7.7%) Some College (38.5%) Associate's (11.5%) Bachelor's (42.3%)	M = 10.82 SD = 5	Army (100%)	Active (92.3%) Reserves (7.7%)
No Current or Recent	Male (85.2%) Female (14.8%)	White (74.1%) A.A (22.2%) Asian (3.7%)	M = 34.15 SD = 4.6	Single (3.7%) Married (92.6%) Divorced (3.7%)	HS Graduate (11.1%) Some College (37%) Associate's (22.2%) Bachelor's (18.5%) Master's (7.4%) Doctorate (3.7%)	M = 12.24 SD = 4.34	Army (96.3%) Air Force (3.7%)	Active (100%)

Active Duty[a]	Male (84.5%) Female (15.5%)	White (68.7%) A.A. (17.3%) Latino (12.3%)[b] Asian (4.7%) Multiracial (1.5%) American Indian/Alaska Native (0.6%) Native Hawaiian/Pacific Islander (0.5%) Other/Unknown (6.3%)	25 or younger (43.8%) 26-30 (21.8%) 31-35 (15.2%) 36-40 (10.4%) 41 or older (8.9%)	Single (41.6%) Married (54.3%) Divorced (4%)	No HS Diploma or GED (0.2%) HS Graduate or Some College (76.5%) Bachelor's (12.9%) Advanced Degree (8.2%) Unknown (2.3%)	.	.	.

[a] From DoD (2016)

[b] Analyzed separately comparing not Hispanic or Latino and those who identify as Hispanic or Latino

Table 4

Civilian Parent Demographics by Deployment Group

	Gender	**Ethnicity**	**Age**	**Marital Status**	**Education**
Current or Recent	Male (0%) Female (100%)	White (65.4%) A.A. (15.4%) Latino (15.4%) Asian (3.8%)	M = 32.22 SD = 5	Single (3.8%) Married (84.6%) Divorced (11.5%)	HS Graduate (15.4%) Some College (30.8%) Associate's (30.8%) Bachelor's (19.2%) Master's (3.8%)
No Current or Recent[a]	Male (11.1%) Female (85.2%)	White (74.1%) A.A. (18.5%) Asian (3.7%)	M = 34.31 SD = 5.13	Single (3.7%) Married (92.6%)	HS Graduate (3.7%) Some College (14.8%) Associate's (22.2%) Bachelor's (40.7%) Master's (14.8%)

Table 5

Reliability Coefficients of CBCL 1 ½ -5 Internalizing and Externalizing Scores

	Test-Retest Reliability (*r*)	**Internal Consistency (*α*)**	**Cross-Informant Reliability (*r*)**	**Stability (12-month *r*)**
Internalizing	0.90	0.89	0.59	0.76
Externalizing	0.87	0.96	0.67	0.66

Table 6

Reliability Coefficients of C-TRF Internalizing and Externalizing Scores

	Test-Retest Reliability (*r*)	**Internal Consistency (*α*)**	**Cross-Informant Reliability (*r*)**	**Stability (3-month *r*)**
Internalizing	0.77	0.89	0.64	0.65
Externalizing	0.89	0.92	0.79	0.40

Table 7

Reliability Coefficients of CBCL 6-18 Internalizing and Externalizing Scores

	Test-Retest Reliability (*r*)	**Internal Consistency (α)**	**Cross-Informant Reliability (*r*)**	**Stability (2-month *r*)**	**Stability (4-month *r*)**
Internalizing	0.91	0.90	0.72	0.80	0.70
Externalizing	0.92	0.94	0.85	0.82	0.82

Table 8

Reliability Coefficients of TRF Internalizing and Externalizing Scores

	Test-Retest Reliability (*r*)	**Internal Consistency (α)**	**Cross-Informant Reliability (*r*)**	**Stability (2-month *r*)**	**Stability (4-month *r*)**
Internalizing	0.86	0.90	0.58	0.87	0.48
Externalizing	0.89	0.95	0.69	0.70	0.69

Table 9

Study Schematic for Mixed ANOVA Model

	Rater (Repeated Factor)	
Factor A: Parental Deployment Status (Non-Repeated Factor)	**Parent Ratings**	**Teacher Ratings**
Current or Recent	$Student_1$	$Student_1$
	$Student_2$	$Student_2$
	$Student_3$	$Student_3$
	.	.
	.	.
	.	.
	$Student_{28}$	$Student_{28}$
No Current or Recent	$Student_{29}$	$Student_{29}$
	$Student_{30}$	$Student_{30}$
	$Student_{31}$	$Student_{31}$
	.	.
	.	.
	.	.
	$Student_{57}$	$Student_{57}$

Table 10

Descriptive Statistics for Internalizing Behavioral Problems

		CBCL (Parent)		TRF (Teacher)	
	N	**Mean**	**SD**	**Mean**	**SD**
Current or Recent Deployment	26	46.38	11.36	42.58	9
No Current or Recent Deployment	27	49.48	9.92	45.52	10.36

Table 11

Frequency and Percentage for Internalizing Behavioral Problem Classification

	CBCL (Parent)			**TRF (Teacher)**		
	Average	**Borderline**	**Clinical**	**Average**	**Borderline**	**Clinical**
Current or Recent Deployment	21 (80.8%)	4 (15.4%)	1 (3.8%)	24 (92.3%)	1 (3.8%)	1 (3.8%)
No Current or Recent Deployment	22 (81.4%)	3 (11.1%)	2 (7.4%)	23 (85.2%)	2 (7.4%)	2 (7.4%)
Total	43 (81.1%)	7 (13.2%)	3 (5.7%)	47 (88.7%)	3 (5.7%)	3 (5.7%)

Table 12

Levene's Test of Equality of Error Variances for Internalizing Behavioral Problems

	F	***df_1***	***df_2***	***p-value***
CBCL (Parent)	.925	1	51	.341
TRF (Teacher)	1.534	1	51	.221

Table 13

Shapiro Wilk's for Internalizing Behavioral Problems

		Statistic	***df***	***p-value***
CBCL (Parent)	**Current or Recent Deployment**	.918	26	.041*
	No Current or Recent Deployment	.934	27	.085
TRF (Teacher)	**Current or Recent Deployment**	.744	26	.0*
	No Current or Recent Deployment	.821	27	.0*

*Indicates significance at the .05 level

Table 14

Summary Table for Internalizing Behavioral Problems

	SS	***df***	***MS***	***F***	***p-value***	***Partial Eta - Squared***
Within Subjects						
Rater	399.896	1	399.896	4.086	.049*	.074
Group x Rater	.16	1	.16	.002	.968	.000
Error	4991.501	51	97.87			
Between Subjects						
Group	241.481	1	241.481	2.195	.145	.041
Error	5610.481	51	110.009			
Total	11243.519	105				

*Indicates significance at the .05 level

Table 15

Descriptive Statistics for Externalizing Behavioral Problems

		CBCL (Parent)		TRF (Teacher)	
	N	**Mean**	**SD**	**Mean**	**SD**
Current or Recent Deployment	26	46.46	9.79	45.04	5.63
No Current or Recent Deployment	27	46.11	8.57	47.89	7.21

Table 16

Frequency and Percentage for Externalizing Behavioral Problem Classification

	CBCL (Parent)			**TRF (Teacher)**		
	Average	**Borderline**	**Clinical**	**Average**	**Borderline**	**Clinical**
Current or Recent Deployment	22 (84.6%)	2 (7.7%)	2 (7.7%)	26 (100%)	0 (0%)	0 (0%)
No Current or Recent Deployment	25 (92.6%)	2 (7.4%)	0 (0%)	23 (85.2%)	2 (7.4%)	2 (7.4%)
Total	51 (96.2%)	4 (7.5%)	2 (3.6%)	49 (92.7%)	2 (3.6%)	2 (3.6%)

Table 17

Levene's Test of Equality of Error Variances for Externalizing Behavioral Problems

	F	***df_1***	***df_2***	***p-value***
CBCL (Parent)	.491	1	51	.487
TRF (Teacher)	1.33	1	51	.254

Table 18

Shapiro Wilks for Externalizing Behavioral Problems

		Statistic	*df*	*p-value*
CBCL (Parent)	**Current or Recent Deployment**	.931	26	.081
	No Current or Recent Deployment	.920	27	.040*
TRF (Teacher)	**Current or Recent Deployment**	.895	26	.012*
	No Current or Recent Deployment	.839	27	.001*

*Indicates significance at the .05 level

Table 19

Summary Table for Externalizing Behavioral Problems

	SS	***df***	***MS***	***F***	***p-value***	***Partial* η^2**
Within Subjects						
Rater	.833	1	.833	.018	.895	.000
Group x Rater	67.852	1	67.852	1.438	.236	.027
Error	2406.506	51	47.186			
Between Subjects						
Group	41.392	1	41.392	.522	.473	.01
Error	4040.25	51	79.221			
Total	6556.833	105				

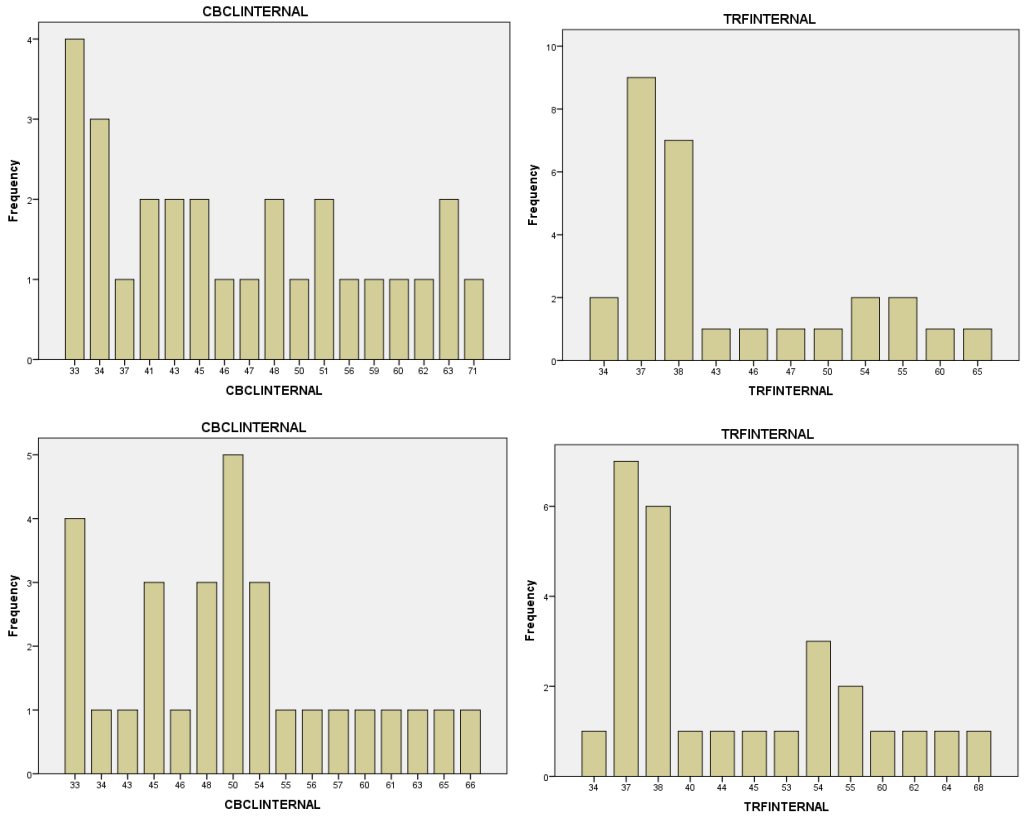


Figure 1. Frequency Distribution of Scores for Internalizing Behavioral Problems by Cell. The top graphs depict the frequency of scores for the CBCL and TRF, respectively, for the current or recent deployment group. The bottom two graphs depict the frequency of scores for the CBCL and TRF, respectively, for the no current nor recent deployment group.

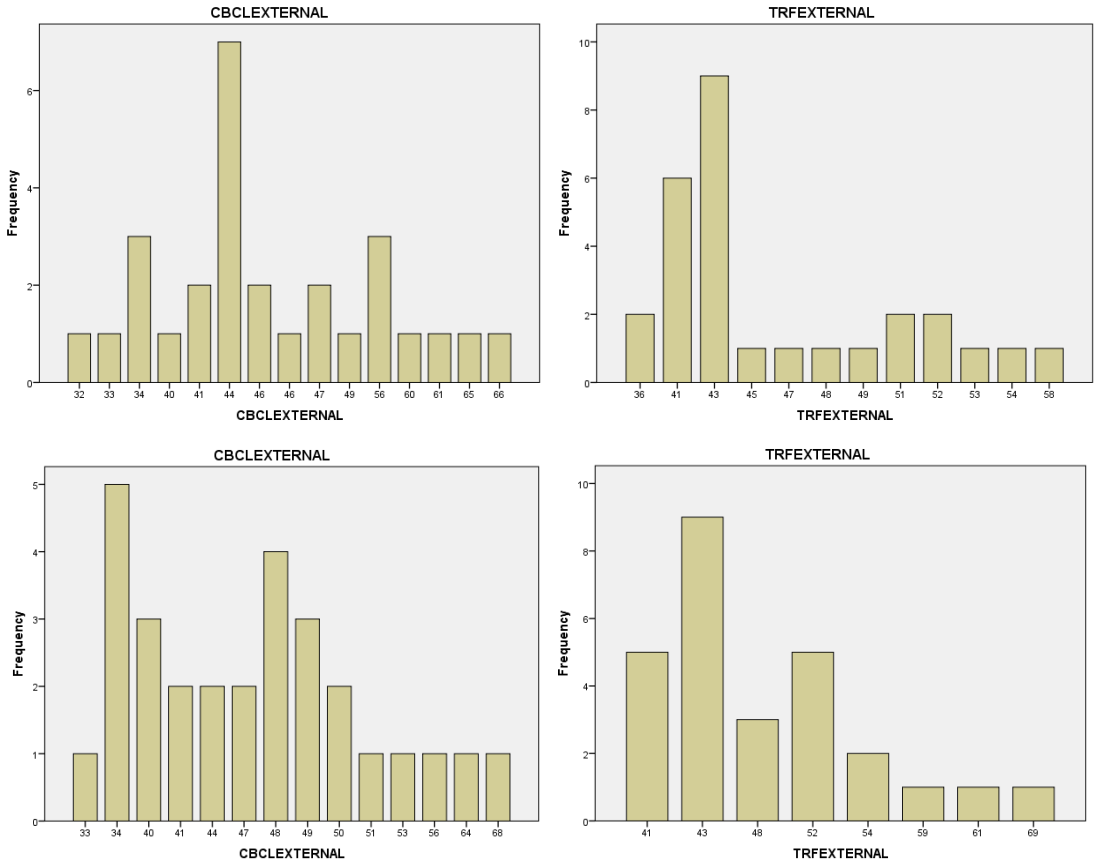


Figure 2. Frequency Distribution of Scores for Externalizing Behavioral Problems by Cell. The top graphs depict the frequency of scores for the CBCL and TRF, respectively, for the current or recent deployment group. The bottom two graphs depict the frequency of scores for the CBCL and TRF, respectively, for the no current nor recent deployment group.

Appendix A

DoDEA Research Approval Process

DEPARTMENT OF DEFENSE
EDUCATION ACTIVITY
4040 NORTH FAIRFAX DRIVE
ARLINGTON, VA 22203-1635

Education Directorate

DoDEA Administrative Instruction 2071.3
Date June 27, 2008

DEPARTMENT OF DEFENSE EDUCATION ACTIVITY
ADMINISTRATIVE INSTRUCTION

SUBJECT: Research Approval Process

References: See Enclosure 1.

1. PURPOSE. This Administrative Instruction:

a. Replaces DoDEA Regulation 2071.2 (Reference (a)).

b. Updates policies and procedures governing the approval and monitoring of research studies involving Department of Defense Education Activity (DODEA) school personnel, school facilities, students, sponsors, and/or data.

c. Implements DoD Directive 3216.02 (Reference (b)), part 219 of title 32, Code of Federal Regulations (Reference (c)), part 46 of title 45, Code of Federal Regulations (Reference (d)), section 980 of title 10, United States Code (Reference (e)), sections 3501-3520 of title 44, United States Code (Reference (f)), DoD Directive 8910.01 (Reference (g)), pages 76260-76264 of Volume 65, Federal Register (Reference (h)), and section 552a of title 5, United States Code (Reference (i)).

2. APPLICABILITY. This Administrative Instruction applies to:

a. The Office of the Director, Department of Defense Education Activity (DoDEA); the Director, Domestic Dependent Elementary and Secondary Schools, and Department of Defense Dependents Schools, Cuba (DDESS/DoDDS-Cuba); the Director, Department of Defense Dependents Schools, Europe (DoDDS-E); the Director, Department of Defense Dependents Schools, Pacific and Director, Domestic Dependent Elementary and Secondary Schools, Guam (DoDDS-P/DDESS-Guam); and all DoDEA District Superintendents, School Principals, Teachers, and Staff.

b. Any individuals or organizations who wish to propose data collection activities and/or studies not sponsored by DoDEA, that involve DoDEA school personnel, school facilities, sponsors, students, and/or data.

3. DEFINITIONS. See glossary.

4. POLICY. It is DoDEA policy that:

a. All research conducted in the DoDEA school system shall adhere to recognized ethical standards of conduct.

b. All research conducted in the DoDEA school system by DoDEA employees, and/or by private organizations, individuals, or institutions not under contract with DoDEA, shall follow the approval procedures provided in this Administrative Instruction.

c. All research conducted in the DoDEA school system shall be aligned with the DoDEA Community Strategic Plan and shall be in accordance with References (e) and (f).

d. Research conducted in the DoDEA school system shall not unduly affect the students or employees of DoDEA as an organization (e.g., not disrupt the classroom lessons).

e. The identity of specific military installations, the names or locations of the schools, or the name of the school system (i.e., DDESS/DoDDS-Cuba, DoDDS-E, or DoDDS-P/DDESS-Guam) shall be revealed ONLY when authorized by the Associate Director for Education, Department of Defense Education Activity (ADE, DoDEA).

f. Permission to conduct research does not constitute commitment of resources or endorsement of the study or its findings by DoDEA.

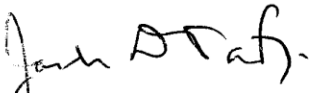
g. DoDEA may assume primary oversight responsibility for the research when DoDEA personnel are conducting research and do not have access to a Federally assured Institutional Review Board (IRB) (e.g., at an institution of higher learning).

h. All research involving students conducted in DoDEA will comply with subpart D, of Reference (d) as required by Reference (b).

5. RESPONSIBILITIES. See Enclosure 2.

6. PROCEDURES. Enclosure 3 provides overarching procedures and requirements for the review and approval of a research study request.

7. EFFECTIVE DATE. This Administrative Instruction is effective immediately.



Joseph D. Tafoya
Director

Enclosures
1. References
2. Responsibilities
3. Procedures
4. DoDEA Form 2071.3 – F1, "Research Study Request"
5. DoDEA Form 2071.3 – F2, "Research Agreement"
6. DoDEA Form 2071.3 – F3, "Research Endorsement"
7. DoDEA Form 2071.3 – F4, "Principal and Superintendent Permission"

Glossary

ENCLOSURE 1

REFERENCES

(a) DoDEA 2071.2, "Research Approval Process," April 8, 1998 (hereby canceled)
(b) DoD Directive 3216.02, "Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research," March 25, 2002
(c) Part 219 of title 32, Code of Federal Regulations
(d) Part 46 of title 45, Code of Federal Regulations
(e) Section 980 of title 10, United States Code
(f) Sections 3501-3520 of title 44, United States Code
(g) DoD Directive 8910.01, "Management and Control of Information Requirements," March 6, 2007
(h) Pages 76260-76264 of Volume 65, Federal Register, December 6, 2000
(i) Section 552a of title 5, United States Code

ENCLOSURE 2

RESPONSIBILIITES

1. Director, Department Of Defense Education Activity (Director, DoDEA). The Director, DoDEA, shall have the authority to:

a. Suspend or terminate approval of research.

b. Review and subsequently grant permission for research which is otherwise in compliance with References (b) through (i).

2. ADE, DoDEA. The ADE, DoDEA, under the authority, direction, and control of the Director, DoDEA, shall establish procedures and standards consistent with the Federal Policy on Research Misconduct (Reference (g)), for the prevention of research misconduct in the Department of Defense Education Activity.

3. Assistant Associate Director for Education, Department of Defense Education Activity (AADE, DoDEA). The AADE, DoDEA, shall:

a. Have authority to grant or deny permission for all research proposals which are otherwise in compliance with References (b) through (i).

b. Coordinate with the Component Designated Oversight Office (CDOO) of the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD(P&R)) or with the IRB of record, as appropriate, if the proposed research meets the definition of human subjects research in Reference (c).

c. Oversee DoDEA's implementation of Federal assurances of compliance regarding the protection of human subjects in research.

d. Report promptly to the Principal Deputy Director DoDEA, CDOO, and IRB of record any unanticipated problems involving risks to subjects or others, any serious or continuing noncompliance with this policy, the requirements or determinations of the IRB, or any suspension or termination of IRB approval.

4. Chief, Research and Evaluation, Department of Defense Education Activity (Chief, R&E, DoDEA). The Chief, R&E, DoDEA, DoDEA, shall:

a. Coordinate and oversee a review committee to review all research proposals.

b. Coordinate with DoDEA Principals, Superintendents, and the cognizant Area Director for their permission to have the proposed research conducted in their schools.

c. Inform researchers in writing of the results of the review process.

d. Ensure that researchers understand their responsibilities under this policy.

e. Provide agency approval for research requests.

5. Director, Domestic Dependent Elementary and Secondary Schools, and Department of Defense Dependents Schools, Cuba (DDESS/DoDDS-Cuba); the Director, Department of Defense Dependents Schools, Europe (DoDDS-E); the Director, Department of Defense Dependents Schools, Pacific and Director, Domestic Dependent Elementary and Secondary Schools, Guam (DoDDS-P/DDESS-Guam). The Director, DDESS/DoDDS-Cuba; the Director, DoDDS-E; and the Director, DoDDS-P/DDESS-Guam; shall:

a. Have the authority to concur/nonconcur with the research committee's recommendation for all research studies proposed for schools in their Area.

b. Coordinate with DoDEA Principals and Superintendents for their concurrence to have the proposed research conducted in their schools.

c. Report to the Chief, R&E, DoDEA, any unanticipated problems involving risks to subjects or others or any serious or continuing noncompliance with this policy or the requirements or determinations of the IRB or any suspension or termination of IRB approval.

6. DoDEA District Superintendents. The DoDEA District Superintendents shall:

a. Have the authority to concur/nonconcur with the research committee's recommendation for all research studies proposed for schools in their district.

b. Coordinate with DoDEA Principals for their permission to have the proposed research conducted in their schools.

c. Report to the cognizant Area Director any unanticipated problems involving risks to subjects or others or any serious or continuing noncompliance with this policy or the requirements or determinations of the IRB or any suspension or termination of IRB approval.

7. DoDEA Principals. The DoDEA Principals shall:

a. Have the authority to grant approval for their school to participate in all research studies proposed for their school(s).

b. Report to the district superintendent(s) any unanticipated problems involving risks to subjects or others or any serious or continuing noncompliance with this policy or the requirements or determinations of the IRB or any suspension or termination of IRB approval.

ENCLOSURE 3

PROCEDURES

1. REVIEW PROCESS

a. The Chief, R&E, DoDEA, will be the first to review the soundness of any proposed research.

b. Additional reviews by the IRB of record and by the CDOO for the OUSD(P&R) shall be conducted, as appropriate, if DoDEA:

(1) Finds the research does not qualify for exemption under Reference (c).

(2) Determines that a secondary agency review is necessary.

2. SUBMISSION

a. All individuals or organizations who wish to conduct research in DoDEA school districts shall complete the following:

(1) DoDEA Form 2071.3-F1, "A Research Study Request," (Enclosure 4).

(2) DoDEA Form 2071.3-F2, "A Research Agreement," (Enclosure 5).

(3) DoDEA Form 2071.3-F3, "A Research Endorsement," (Enclosure 6).

b. A researcher who is a DoDEA employee, shall submit DoDEA Form 2071.3-F4, "Principal and Superintendent Permission,"(Enclosure 7) to the principal(s) and superintendent(s) of the school(s) where the researcher proposes to conduct research. The principal(s) and superintendent(s) must give permission prior to the researcher submitting the research proposal to the Chief, R&E, DoDEA.

c. A researcher who is not a DoDEA employee shall NOT submit the Principal and Superintendent Permission form. The Chief, R&E, DoDEA will submit this form to the principal(s) and superintendent(s).

d. Individuals or organizations that propose to conduct research in DoDEA shall:

(1) Complete the Collaborative Institutional Training Initiative (CITI) prior to submitting their research proposal.

(2) Adhere to this Administrative Instruction while conducting research.

(3) Complete DoDEA Forms 2071.3 F-1 through F-3 (Enclosures 4-6).

(4) Inform all participants (i.e., students, sponsors or guardians, and DoDEA personnel) that participation in the proposed research study is voluntary, to the extent required under Reference (c).

(5) Obtain informed consent from participants of legal age, unless a waiver is obtained under Reference (c) and in accordance with Reference (e).

(6) When participants are not of legal age, obtain:

(a) Informed assent from individuals not of legal age, and

(b) Consent from a sponsor, parent or guardian, unless a waiver is obtained under Reference (c) and in accordance with Reference (e).

(7) Obtain permission for all information collections as required under References (f) and/or (g).

(8) Preserve the confidentiality of each participant unless otherwise given consent/assent.

(9) Maintain all information obtained in the strictest of confidence, as mandated under Reference (i).

(10) Report any proposed changes in the research to the Chief, R&E, DoDEA, and the IRB prior to implementing the changes; except as allowed under Reference (c).

(11) Promptly report any suspension or termination of IRB approval or any unanticipated problems involving risk to subjects to the IRB and to the Chief, R&E, DoDEA.

3. THE IRB REVIEW. The researcher shall:

a. Ensure that an IRB review of the proposed research is conducted.

b. Ensure that, if available, an IRB review is conducted by his or her respective university or branch of military prior to submitting the research proposal to DoDEA.

c. Seek an IRB review through an independent IRB with an approved assurance if no university or military IRB review is available.

d. Provide the Chief, R&E, DoDEA, with documented completion of the IRB review in the form of a certificate or letter that states that IRB approval for the proposed study has been granted and contact information for the accredited research affiliate.

e. Submit a Research Study Request Packet including all forms and support materials (i.e., Enclosures 2-5, survey instrument(s), blank assent and permission forms, IRB approval, etc.) to: Department of Defense Education Activity, Research and Evaluation Branch, 4040 N. Fairfax Drive, Arlington, VA 22203, FAX (703) 588-3766.

4. AGENCY APPROVAL

a. All research study requests will be reviewed by a research committee, established at DoDEA Headquarters, with appropriate members appointed by the Chief, R&E, DoDEA.

b. The research committee shall review research requests at least monthly.

c. Research requests must receive permission from the DoDEA Superintendent(s) and DoDEA Principal(s) in the district(s) and school(s) where the research will be conducted prior to being submitted to DoDEA.

d. Research requests will be reviewed by the cognizant Area Director(s) after review by the research committee.

e. The Chief, R&E, DoDEA, shall give agency approval for requests based on recommendations of the research committee members, the OUSD(P&R), CDOO, the IRB, and the cognizant DoDEA Area Director(s), Superintendent(s), and Principal(s).

f. The researchers will be informed in writing of the results of the review process and the final approval decision.

5. CONDUCTING RESEARCH

a. Individuals or organizations that are given permission to conduct research studies in DoDEA schools/districts shall abide by standards of professional conduct at all times. Failure to do so will be sufficient cause for DoDEA permission to be terminated.

b. Research that receives agency approval from the Chief, R&E, DoDEA, only allows the researcher to proceed with the research as described; it is not an endorsement and does not compel any personnel, students, or sponsors of the DoDEA system to participate in research studies.

c. Researchers shall contact the Chief, R&E, DoDEA, in writing if there are any changes to the study that was given agency approval prior to continuing with the study. This includes changes to the protocol, stopping the study for any reason, adding or deleting parts of the study, etc.

d. The Chief, R&E, DoDEA, shall maintain a file of all approved research requests for three years from the conclusion of the research project.

6. REPORTING REQUIREMENTS

a. The researcher shall submit an update prior to the one year anniversary of the approval and then annually thereafter of ongoing research to the Chief, R&E, DoDEA. Failure to provide the update may result in termination of the research.

b. The researcher shall submit an electronic copy of the final research report to the Chief, R&E, DoDEA within two months of concluding the research report.

c. Before submitting research for publication, the researcher must obtain permission of the Chief, R&E, DoDEA. After publication, the researcher shall provide the Chief, R&E, DoDEA, with one copy of the published work and give DoDEA permission for further dissemination within DoDEA.

Appendix B

Demographic Questionnaire

PARENT 1 INFORMATION. Please complete the following questions about you.

1. Gender (please circle): male female
2. Age _____
3. Ethnicity (please circle): White African American Latino Asian Other
4. Marital status (please circle): Single Married Divorced
5. Your highest level of education (please circle)
    a. Some high school
    b. High school graduate (diploma or equivalent)
    c. Some college
    d. Associates degree
    e. Bachelor's degree
    f. Master's degree
    g. Doctoral degree (e.g. PhD, PsyD, EdD)
6. You are in the military (please check one): ____ Yes ____No

If you answered yes to question 6, please complete the following questions:

7. Number of years you have been in the military:_____
8. What branch of the military are you in (please circle)?

Army Marine Corps Air Force Navy Coast Guard

9. What component of the military are you part of (please circle)?

Active Duty National Guard Reserves

10. Are you currently deployed (please check one)? ____ Yes ____No
11. Have you recently returned from deployment (within previous 9 months; please check yes or no)? ____ Yes ____No

How many months ago did you return? _____

PARENT 2 INFORMATION. Please complete the following questions about your child's other parent (leave blank if not applicable).

1. Gender (please circle): male female
2. Age _____
3. Ethnicity (please circle): White African American Latino Asian Other
4. Marital status (please circle): Single Married Divorced
5. The parent's highest level of education (please circle)
    a. Some high school
    b. High school graduate (diploma or equivalent)
    c. Some college
    d. Associates degree
    e. Bachelor's degree
    f. Master's degree
    g. Doctoral degree (e.g. PhD, PsyD, EdD)
6. Is the parent in the military (please check one)?: ____ Yes ____No

If you answered yes to question 6, please complete the following questions:

7. Number of years parent has been in the military:_____
8. What branch of the military is the parent in (please circle)?

Army Marine Corps Air Force Navy Coast Guard

9. What component of the military is the parent part of (please circle)?

Active Duty National Guard Reserves

10. Is the parent currently deployed (please check one)? ____ Yes ____No
11. Has the parent recently returned from deployment (within previous 9 months; please check yes or no)? ____ Yes ____No

How many months ago did the parent return? _____

STUDENT INFORMATION. Please complete the following questions about your son or daughter.

1. Grade _____
2. Age _____
3. Ethnicity (please circle):

White African American Latino Asian Other

4. How many parental deployments has your son or daughter experienced (e.g. 2 deployments? _____
5. How many cumulative months of parental deployment has your son or daughter experienced (e.g. 19 months)? _____

Appendix C

Parent Letter

To the parents of students attending ABC County Schools:

My name is Rebecca Hickey and I am completing my final year as a doctoral school psychology student at the University of California, Riverside, with the completion of my dissertation. Last year, I completed my internship year within a North Carolina public school district as a school psychologist in Richmond County Schools. For my program, I am currently working on a research project, in which I hope to examine the behavioral and emotional needs of military-connected students during parental deployment. Ultimately, I hope to understand how best to support students in the military community.

I have both professional and personal interests in military students. As a future school psychologist, I want to be prepared to support military children in my schools, particularly during deployment. Personally, I am a wife of a paratrooper in the 82nd Airborne at Fort Bragg. Additionally, I have also experienced a deployment myself and witnessed the impact it may have on families.

As you can imagine, I am passionate about military-connected children and, as a school psychologist, their education. For this reason, I am asking you, the parent of a military-connected student, to consider allowing your child to participate in my research project. This would include providing consent and completing a brief questionnaire about your family.

In addition, you and your child's teacher will complete a rating scale regarding behaviors and emotions. Specifically, the Child Behavior Checklist for ages 1½-5 and 6-18 (CBCL/1.5-5 and CBCL/6-18) are questionnaires for obtaining parents' reports of their child's competencies and problems in behaviors and emotions. Similarly, the Teacher's Report Form (TRF) and the Caregiver-Teacher Report Form (C-TRF/1½-5) will be used to obtain reports from your child's teacher in the school setting. For my study, I will be focused on two scores, including internalizing and externalizing behavioral problems. The internalizing score consists of problems related to the self, including emotionally reactive, anxious/depressed, somatic complaints, and withdrawn. On the other hand, externalizing scores comprise problems related to conflicts with others and expectations for the child, which includes attention problems and aggressive behavior. **Please note that confidentiality is my priority, and no student-specific data will be shared with parents, students, or school district employees. Further detail of maintaining confidentiality and privacy is provided in the attached consent form.**

For each child in which a parent completes the consent form, questionnaire and rating scale, the parent will be entered in a raffle with the following prizes: $50 gift card (1),

$25 gift card (2), and a $10 gift card (4). In addition, teachers will be entered in a raffle with the same prizes for each child they complete the rating scale for.

For my study, a **military-connected student is a child with one or both parents/guardians in any branch (Air Force, Army, Coast Guard, Marines, or Navy) and component (Active Duty, National Guard, or Reserves) of the military.**

If your child is military-connected, please consider allowing him or her to participate. If you have any questions, please contact me with the provided information. Thank you for your consideration to participate. The following pages provide further study details as a requirement of UCR, including steps to maintain confidentiality and allow for you to consent.

Rebecca Hickey, M.A.
Doctoral School Psychology Student
University of California, Riverside
rhickey1215@gmail.com

Appendix D

Consent Form

UNIVERSITY OF CALIFORNIA, RIVERSIDE
CONSENT TO ACT AS A HUMAN RESEARCH SUBJECT

Impact of Parental Deployment on Behavioral and Emotional Risk
of Military-Connected Students

You are being asked to consent for your child's participation because your child is a military-connected student enrolled in Hoke County Schools. Participation in this research study is completely voluntary. Please read the information below and ask questions about anything that you do not understand before deciding if you want to participate. A researcher listed below will be available to answer your questions.

INVESTIGATORS AND SPONSOR

Lead Researcher: Hickey Rebecca M.A. - Department of School Psychology
***Faculty Sponsor*:** Geraghty, Cathleen Ph.D. - Department of School Psychology
Study Location(s): Hoke County Schools
Study Sponsor(s): This is a student project at the University of California, Riverside.

PURPOSE OF STUDY

The aim of the proposed study is to examine the impact parental deployment has on behavior and emotional risk of military-connected students, including those currently experiencing parental deployment, recently experiencing parental deployment, and those who have never nor recently experienced parental deployment. Behavior and emotional risk will be based on both parent and teacher report.

SUBJECTS

Inclusion Requirements:
You are being asked to consent for your child's participation because your child is a military-connected student enrolled Hoke County Schools.
Number of participants:
The investigator plans to enroll at a minimum of 190 participants at this site (Hoke County Schools).

PROCEDURES

Standard Paper/Pencil format (handwritten):
The data will be collected by standard paper and pencil format. Specifically, parents will complete the Child Behavior Checklist (CBCL) and demographic questionnaire, and teachers will complete the Teacher Report Form (TRF).

Total Time Involved:
Parents who consent for child participation will complete a brief demographic questionnaire and the CBCL, which takes approximately 3 and 7 minutes, respectively. For each child with consent in their class, teachers will complete the TRF, which takes approximately 7 minutes. Therefore, for each participant, the parent will need 10 minutes and the teacher will need 7 minutes.

RISKS

Known risks: This study involves no more than minimal risk.

BENEFITS

To the Participant
By participating in this study, the behavioral and emotional risk of your child will help inform schools how to best support military-connected students.

To Others or Society
Teachers and parents will gain information about general student risk from completing the rating scale. Additionally, the data analysis will help the research community understand the impact of parental deployment on students in the school and home setting and help develop interventions to best support military-connected students. This will also point to future directions of research.

ALTERNATIVES TO PARTICIPATION

The alternative is to not participate in this study.

COMPENSATION/COST/REIMBURSEMENT
You will not be required to pay for research related procedures/treatments. Participating schools will be given a $100 donation from the researcher. Parents will be entered in a raffle for each child he or she completes the consent form, questionnaire and rating scale for. The following are the prizes: $50 gift card (1), $25 gift card (2), and $10 gift card (4). In addition, teachers will be entered in a raffle with the same prizes for each child they complete the rating scale for.

WITHDRAWAL OR TERMINATION FROM STUDY
You are free to withdraw your child from the study at any time. If you choose to withdraw from the study or are asked to stop participation in the study, you may be asked to provide a reason for research purposes.

CONFIDENTIALITY

Data Storage
After obtaining these data each student will be assigned his or her own identification number, and this ID number will be used to ensure and maintain confidentiality of the data. At no point will a student's name be associated with his or her performance or other descriptive data. An electronic file connecting the study ID number to any district identification will be securely stored at UCR and kept separate from the rest of the data at UCR, and will only be used by you to receive and match additional district data that may be provided.

Data Access: The sole researcher (Rebecca Hickey) will have access to your data.

NEW FINDINGS
If during this study, significant new information becomes available that may relate to your willingness to continue to participate, this information will be provided to you by the investigator.

IF YOU HAVE QUESTIONS:

Primary Contact:
Hickey, Rebecca, Department of School Psychology
Daytime Phone: (909) 297-0418

Secondary Contact:
Geraghty, Cathleen PhD, Department of School Psychology
Daytime Phone: (951) 827-5225

OTHER CONSIDERATIONS

Conflict of Interest
Investigators must satisfy campus requirements for identifying and managing potential conflicts of interest before a research study can be approved. The purpose of these requirements is to ensure that the design, conduct and reporting of the research will not be affected by any conflicting interests.

No conflicts of interest are a factor within this study. If, at any time, you have specific questions about the financial arrangements or other potential conflicts for this study, please feel free to contact any of the individuals listed above.

VOLUNTARY PARTICIPATION STATEMENT

I understand that participation in this study is voluntary. I may refuse to answer any question or discontinue my child's involvement at any time without penalty or loss of benefits to which I might otherwise be entitled. My decision will not affect my future relationship with UC Riverside. My signature below indicates that I have read the information in this consent form and have had a chance to ask any questions I have about the study. I consent for my child to participate.

_____ _____

Signature of Parent/Guardian Date

_____ _____

Signature of Investigator Date