

Achievement of Sixth-Grade Students with Military Parents Deployed to a War Zone Compared to Controls

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Abstract

The need for accurate information about the achievement of students whose military parents are deployed to a war zone or whose military parents are eligible although not currently deployed to a war zone is important in order to ensure that we are providing for the educational wellbeing of these children as their parents defend our nations freedoms. The purpose of this posttest-only comparative efficacy study was to determine the achievement outcomes of sixth-grade students with a military parent deployed to a war zone (n = 10) or sixth-grade students with a military parent not deployed to a war zone (n = 10) compared to same school students whose parents have no military affiliation (n = 10). The study's dependent measures were Academic achievement as measured by end of sixth-grade (1) Nebraska State Accountability Assessment Test-Math (NeSA-Math), (2) Nebraska State Accountability Assessment Test-Reading (NeSA-Reading), (3) Measure of Academic Performance-Math (MAP-Math), (4) Measure of Academic Performance-Reading (MAP-Reading), (5) Research School District's Descriptive Writing Assessment for (a) Ideas and Content, (b) Organization, (c) Voice, (d) Word Choice, (e) Sentence Fluency, and (f) Conventions, and (6) Research School District's Essential Objectives for (a) Language, (b) Math, (c) Science, (d) Social Studies, (e) Health, (f) Physical Education, and (g) Music. The overall pattern of end of sixth-grade statistical equipoise between group comparisons indicated that the goal of educational wellbeing for these students of military families, and control group students alike, was being met and was reflected in measured proficient and advanced level performance requiring students' day-to-day engagement at school and support at home.

Introduction

Military deployments change lives. Today in the news, it is easy to find stories about United States Military Service Members returning from deployment with injury or illness and in some unfortunate cases, one will find stories of Service Members not returning at all. But what about the children of these brave men and women who give their all to the United States? There are nearly 1.8 million military-connected children in this country. Of these children, 700,000 currently have at least one parent deployed to a war zone. The global War on Terror demands great sacrifices of its Service Members, and consequently, military-connected children often face complicated circumstances and losses that force them to adjust to a different life (Collins, 2007).

In the literature, deployment is often described as a cyclical process rather than a single event, consisting of stages including pre-deployment, deployment, post-deployment (returning home), and re-deployment. Research has shown that children are likely to face different stressors at various stages of this cycle (Fitzsimons & Krause-Parello, 2009; Pincus, House, Christensen, & Adler, 2001). For instance, at the pre-deployment stage children may anticipate parental separation and harbor concerns or anxiety about their parent's well being and return (Burrell, Adams, Durand, & Castro, 2006; Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Kelley, Hock, Smith, Jarvis, Bonney, & Gaffney, 2001; McCarroll, Fan, Newby, & Ursano, 2008; Orthner, Den & Rose, 2005).

During deployment children may experience changes to family roles and routines, including additional responsibilities for older children (Bowling & Sherman, 2008), which may take place in the context of the diminished capabilities of the at-home parent who may also be experiencing stress (Mansfield, Kaufman, Marshall, Gaynes, Morrissey, & Engel, 2010; SteelFisher, Zaslavsky, & Blendon, 2008). Post-deployment, the child must reintegrate their parent back into the family unit; which may be difficult if some time has passed and the child has matured (Defense Department Advisory Committee, 2004). The possibility of redeployments can make the re-establishment of bonds even more challenging for the child. This conceptualization of deployment as a cycle and the stressors identified are highly relevant to the current and previous deployments to Iraq or Afghanistan (White, de Burgh, Fear, & Iversen, 2011).

Multiple and extended deployments and the high operational pace of the current conflicts are unparalleled for the U.S. military's all-volunteer force (Belasco, 2007; Bruner, 2006; Hosek, Kavanagh, & Miller, 2006). As a result, many youth from military families are experiencing significant periods of parental absence. In 2006, approximately 1.89 million children had one or both parents in the military; 1.17 million had parents in the Active Component and 713, 000 had parents in the Reserve Components (Department of Defense, 2006). While there are positive aspects of deployment, including increased camaraderie, sense of family pride and financial benefits associated with deployment, deployments can take a heavy toll on families concerned for the safety of their loved ones (Hosek et al., 2006; Tanielian & Jaycox, 2008). Arguably the most vulnerable family members are the children and youth left at home. While younger children may not fully comprehend why a parent must leave, older children and adolescents must cope with parental deployment during a critical and rapid stage of social and emotional development, which is challenging even in the most supportive and stable of environments (Huebner et al., 2005).

The potential impact of the threat of war on children's worldview, social map, and moral development remains uncharted territory. Research findings are mixed but, in a thorough review and synthesis of the literature, Jensen and Shaw (1996) suggested that massive exposure to war overwhelms the child's defenses. Moderate exposure probably leads to development of adaptive, self-protective strategies, but minimal exposure may not invoke self-protective mechanisms. Thus, an important area for research is the effect of minimal exposure to the threat of war, such as that experienced by children in U.S. military families (Ryan-Wenger, 2001). However, with multiple deployments to the Iraq and Afghanistan war theaters currently the rule rather than the exception, the concern today is for children of military families who may be overwhelmed from massive exposure to war.

Flake and colleagues (2009), in a study of 101 families living on a military base, reported that 32% of 5-12 year old children with a deployed parent had Pediatric Symptom Checklist scores in the "high risk" range for psychosomatic problems, approximately 2.5 times the national norm. In a study examining child and parent distress among 272, 6-12 year old children of active duty soldiers deployed to Operation Enduring Freedom/Operation Iraqi Freedom, both length of deployment and parental distress were associated with children's depression and externalizing symptoms (Lester et al., 2010). Similarly, Chartrand, Frank, White, and Shope's (2008) study of 169 families living on Marine bases revealed significantly poorer parent-reported adjustment among 3 to 5 year olds with a deployed parent, compared to peers without a deployed parent, controlling for caregiver's stress and depressive symptoms (Gewirtz, Erbes, Polusny, Forgatch, & DeGarmo, 2011).

War research has preliminarily shown that cognitive maturity and developmental growth influence how a child or adolescent responds to war (Atwood & Donnelly, 2002). From a developmental perspective, older children are more likely to feel equipped emotionally and cognitively to handle adverse events and crises than their younger counterparts (Dyregrov, Gjestad, & Raundalen, 2002; Ronen, Rahav, & Rosenbaum, 2003; Vogel & Vernberg, 1993). For example, younger children may struggle to understand and make meaning of a war (Ronen, et al., 2003). Reports have shown that children ages 7-11 tend to be prone to display fear, confusion, psychosomatic symptoms, problems at school, and anxiety in the aftermath of war (Joshi & O'Donnell, 2003). Younger children may have some difficulty in differentiating real versus imagined facts related to the war (Atwood & Donnelly, 2002). Adolescents, on the other hand, generally have the cognitive and emotional maturity to understand and handle adverse events, crises, and trauma (Davidson, White, Smith, & Poppen, 2001; Tedeschi & Calhoun, 1995). For example, when dealing with trauma, teenagers have deeper, more abstract concerns (i.e., moral, religious, and ethical thoughts), which can influence how they understand and react to war (Burnham & Hooper, 2008).

Life stressors faced by military families include frequent moves, the potential of being deployed into hostile environments, frequent periods of family separation, geographic isolation from extended-family support systems, low pay, young age as compared to general civilian population, and a high incidence of young children living in the home. Military children are resilient—that's what their principals and counselors repeatedly say. They are used to changing schools, enduring long separations from a parent, and saying good-bye to old friends and making new ones. "What we hear from military families is that they don't want their children to be treated as victims," said Stephanie Surles, research and development officer for the Military Child Education Coalition. "They want them to be treated as children first" (Hardy, 2006).

Social issues of children with deployed parents is a concern when the length of deployment can stretch to several years as military parents face their third, fourth, or even fifth deployment to today's war zones. Compare this to the time when two deployments to Vietnam were considered a lot. In addition, a strapped military has relied heavily on National Guard and reserve units, volunteers not accustomed to extended combat tours. Their children are referred to in the literature as "suddenly military children" (Hardy, 2006). In general, research on deployment and the mental health of children and adolescents indicates that while a parent's deployment is clearly stressful, children and adolescents evidence a wide range of responses--often impacted by numerous contextual variables (Burnham & Hooper, 2008).

Boys seem to suffer more effects than girls and younger children overall are more susceptible to the effects of longer deployments (Johnson & Sherman, 2006). In addition to the age effects often evidenced among youth and often reported in the trauma and disaster-related literature, unique findings related to gender are reported, although the research remains equivocal (Ronen et al., 2003). For example, some studies have shown that girls have significantly higher fears than boys after trauma (Pfefferbaum et al., 1999; Pine & Cohen, 2002; Shaw, 2003). Other studies have found no gender differences (Rahav & Ronen, 1994). The gender effect that is sometimes found in studies could be because girls are more likely to report anxiety, fears, and depression than are boys (Vogel & Vernberg, 1993). Shaw (2003) noted that this gender effect ought to be interpreted with caution: Even though girls may experience and report greater rates of symptomatology (e.g., symptoms of posttraumatic stress), boys are more likely to behaviorally act out their reaction to traumatic and adverse events (Burnham & Hooper, 2008). The concern today is to ensure that children of military families attend schools that take into consideration their parents' deployments while providing a safe, secure, and inviting environment with achievement as the primary focus.

Literature

Resiliency can be defined as the capacity to spring back, rebound, successfully adapt in the face of adversity, and develop social and academic competence despite exposure to severe stress (Henderson & Milstein, 2003). In the strictest sense, resiliency research refers to a body of international cross-cultural, lifespan developmental studies that followed children born into seriously high-risk conditions such as families where parents were mentally ill, alcoholic, abusive, or criminal, or in communities that were poverty-stricken or war torn (Henderson & Milstein, 2003). The astounding finding from these long term studies was that at least 50%--and often closer to 70%--of youth growing up in these high-risk conditions did develop social competence despite exposure to severe stress and did overcome the odds to lead successful lives. Furthermore, these studies not only identified the characteristics of these resilient youth, several documented the characteristics of the environments--of the families, schools, and communities--that facilitated the manifestation of resilience (Bernard, 1991).

According to researchers, human beings are born with an innate self-righting ability, which can be helped by focusing on strengths that are extant even in times of severe stress (Henderson, 2007). This finding supports a major shift in thinking about human development from obsessing about problems and weaknesses to recognizing the power of the positive, that is, identifying and building individual and environmental strengths that help people overcome difficulties, achieve happiness, and attain life success (Henderson, 2007). Research focused on children of parents serving in a war zone suggests that many dependent children exhibit remarkable resilience throughout the deployment cycle (Lester et al., 2010; Zeff, Lewis, & Hirsch, 1997), however, other studies found that some children of deployed parents demonstrate more anxiety, withdrawal, anger, noncompliance, or other emotional/behavior problems compared to children whose parents were not deploying (Flake et al., 2009; Kelley, 2003).

Even with these conflicting findings it has been asserted that the impact on children of military parent preparing to leave for a war zone may be mitigated by several factors including if a child has securely bonded to the deploying parent, if the deploying parent maintains relatively stable parenting practices, and if the overall family coping processes focus on individual and family strengths. Taken together when these conditions are present than children of a parent preparing to deploy to a war zone are more likely to cope adaptively and maintain their psychological wellbeing (Riggs & Riggs, 2011).

While individual children's emotional needs and issues can vary drastically, all children need to maintain their daily routines at home and school to help cushion the impact of deployment. Common emotions during deployment include confusion, sadness, anger, and fear. It is important to address these emotions with children and to provide them with reassurance and comfort (DOD, 2008). Several studies of children of deployed parents have indicated that deployment is associated with higher levels of internalizing behaviors (e.g., feeling sad, fearful, or over-controlled). Jensen and colleagues, 1991, studied children of U.S. Army officers and senior enlisted personnel and found that children with absent fathers had significantly higher levels of depressive symptoms and anxiety than those children whose fathers were present. Overall, length of absence but not total number of absences was correlated with child reported symptoms of depression and anxiety. Chandra and colleagues (2008) also examined internalizing behaviors (e.g., sadness) of children whose parents deployed to Operation Desert Storm and found that those with parents who deployed had higher levels of depression and anxiety than those whose parents were not deployed.

It should be recognized that children's responses to deployment are variable and depend on age and developmental stage, in addition to family and individual factors (Amen, Jellen, Merves, & Lee, 1988; Murray, 2002; Pincus, House, Christensen, & Adler, 2001; Stafford & Grady, 2003). In the pre-deployment phase infants, for example, have been observed to be fussy and change their eating habits. Preschoolers can be confused and saddened by pending changes in the family. School-aged children will also be saddened, but may also become angry and experience anxiety. In addition to these mood states, adolescents may withdraw and deny feelings about the upcoming separation. In the deployment phase, preschoolers may display sadness, tantrums, changes in eating and elimination habits, and separation anxiety in regard to the remaining caretaker. School-aged children may experience more somatic complaints, changes in mood, and a decline in school performance. Adolescents may be angry, aloof, and apathetic; they may act out more or lose interest in their usual activities and experience school problems. Other adolescents may embrace the new independence and try to assume the role of the missing parent (Amen, Jellen, Merves, & Lee, 1988; Blount, Curry, & Lubin, 1992; Pincus et al., 2001; Stafford & Grady, 2003).

The post-deployment phase can lead to powerfully ambivalent emotions in both children and adolescents. High expectations and behavior changes in the returning service member contribute to the challenges of readjustment. Very young children may not recognize the service member and may be afraid of him or her. Preschoolers, while happy and excited, may be simultaneously excited and angry. They may act out their anger or may require unsustainable levels of attention. Adolescents may be defiant or disappointed by the difficulty the returning service member has acknowledging the changes the adolescent has gone through while the parent was deployed (Johnson et al., 2007).

Methodology

The purpose of this study was to determine the achievement outcomes of sixth-grade students with a military parent deployed to a war zone or sixth-grade students with a military parent not deployed to a war zone compared to same school students whose parents have no military affiliation.

Participants

Students who participated in this study attended the same elementary school for four consecutive years third-grade through sixth-grade completing the same academic program, August 2009 through May 2013, across all parent conditions, a military parent deployed to a war zone or a military parent not deployed to a war zone or parents with no military affiliation.

Gender and age range of participants.

The gender of the sixth-grade students with a military parent deployed to a war zone $n = 10$ (33%) was girls $n = 4$ (40%) and boys $n = 6$ (60%). The gender of the sixth-grade students with a military parent not deployed to a war zone $n = 10$ (33%) was girls $n = 5$ (50%) and boys $n = 5$ (50%). Finally, The gender of the sixth-grade control group students whose parents have no military affiliation $n = 10$ (33%) was girls $n = 4$ (40%) and boys $n = 6$ (60%). The age range of the students in the three parent condition groups was nine years to 12 years of age. The gender and age range of the study participants was congruent with the research school districts gender demographics for students completing the sixth-grade academic program.

Racial and ethnic origin of participants

The ethnic origin of sixth-grade students with a military parent deployed to a war zone $n = 10$ (33%) was Caucasian, $n = 10$ (100%). The ethnic origin of sixth-grade students with a military parent not deployed to a war zone $n = 10$ (33%) was Caucasian, $n = 10$ (100%). The ethnic origin of control group sixth-grade students whose parents have no military affiliation $n = 10$ (33%) was Caucasian, $n = 8$ (80%), African American= 1 (10%), and Asian, $n = 1$ (10%). The racial and ethnic origin of the study participants is congruent with the research school districts racial and ethnic origin demographics for students completing sixth-grade in the research elementary school.

Description of Procedures

Research design

The posttest-only, two independent variable with a control group comparative efficacy study design is displayed in the following notation.

Group 1 $X_1 Y_1 O_1$

Group 2 $X_1 Y_2 O_1$

Group 3 $X_1 --- O_1$

Group 1 = study participants #1. Naturally formed group of sixth-grade ($n = 10$) students.

Group 2 = study participants #2. Naturally formed group of sixth-grade ($n = 10$) students.

Group 3 = study participants #3. Randomly assigned sixth-grade ($n = 10$) students.

X_1 = study constant. All students who participated in this study attended the same elementary completing the same academic program for four consecutive school years third-grade through sixth-grade, August 2009 through May 2013, across all parent conditions, a military parent deployed to a war zone or a military parent not deployed to a war zone or parents with no military affiliation. Students also completed all sixth-grade year-end assessments.

Y_1 = Study independent variable, parent military deployment, condition #1. Sixth-grade students with a military parent deployed to a war zone.

Y_2 = Study independent variable, parent military deployment, condition #2. Sixth-grade students with a military parent not deployed to a war zone.

= Study control group. The control group consists of sixth-grade students with parents who are not serving in the military.

O_1 = study posttest dependent measures. Academic achievement as measured by end of sixth-grade (1) NeSA-Math, (2) NeSA-Reading, (3) MAP-Math, (4) MAP-Reading, (5) Research School District's Descriptive Writing Assessment, (6) Research School District's Essential Objectives for (a) Language, (b) Math, (c) Science, (d) Social Studies, (e) Health, (f) Physical Education, and (g) Music.

Description of Independent Variable

Research suggests that many children exhibit remarkable resilience throughout the deployment cycle (Lester et al., 2010; Zeff et al., 1997). At the same time, other findings indicate that some children of deployed parents demonstrate more anxiety, withdrawal, anger, noncompliance, or other emotional/behavior problems than children whose parents are not deployed (Flake et al., 2009; Kelley, 2003).

Individual differences in children's responses to deployment separation will be related to development level, their attachment bonds with the deploying and non-deploying parents, and the overall psychological and behavioral functioning of the at-home parent. If deploying parents, whether mothers or fathers, have acted as key attachment figures for their children, their departure represents a significant loss that will lead to grief responses (Riggs & Riggs, 2011). There are many school-military-community support systems available for youth with parents deployed to a war zone. They include school-based group counseling for deployment groups, brief individual visits to the school counselor, referral to our school district's FASE (Family and Students Empowerment) Team which can include school and or home visits to address the needs of the child and/ or the non-deployed parent, referral to community-based counseling, Boystown Parenting Class offered in the school district at no expense to the family, teachers who are sensitive to the child's needs, structure in the school day, reinforcement of safety and security, referral for base support like a child centered deployment group, individual therapy, summer camp through the school district and/ or the base Boy & Girl Scouts, YMCA, and the Boys & Girls Clubs.

Data Collection Procedures

All student behavior and achievement data was retrospective, archival, and routinely collected school information. Permission to conduct the research was obtained from the school district's school research personnel and the University of Nebraska Medical Center/University of Nebraska at Omaha Combined Institutional Review Board for the Protection of Human Subjects. Exemption categories for this study were provided under 45CFR.10 (b) categories 1 and 4. Academic data were collected for students in two naturally formed groups of 20 students and one control group of 10 students. Non-coded numbers were used to display de-identified behavior and achievement data. Aggregated data was reported with means and standard deviations for research questions one through five and frequencies and percentages for research question six.

Results and Conclusions

The following results and conclusions may be drawn from the study for each of the six research questions.

Research Question #1 End of Sixth-Grade NeSA-Math

Research question #1 results. Research Question #1 analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade NeSA-math achievement percentile scores. The null hypothesis for the first research question was not rejected for posttest end of sixth-grade NeSA-math achievement percentile scores for students with a military parent deployed to a war zone ($M = 84.92$, $SD = 10.13$), students with a military parent not deployed to a war zone ($M = 71.30$, $SD = 15.80$), and students whose parents have no military affiliation ($M = 80.90$, $SD = 10.43$) where the overall main effect of posttest end of sixth-grade NeSA-math achievement percentile scores was not statistically significant, ($F(2, 27) = 2.99$, $p = 0.067$).

Research question #1 conclusions. Students' congruent and not statistically different posttest end of sixth-grade NeSA-math achievement percentile scores indicated measured achievement exceeding the math proficiency rating for students with a military parent deployed to a war zone (84.92) and control group students whose parents have no military affiliation (80.90). End of sixth-grade NeSA-math achievement percentile scores for students with a military parent not deployed to a war zone (71.30) indicated measured achievement meeting the math proficiency rating. To further contextualize the mean percentile rank scores students with a military parent deployed to a war zone mean percentile rank score of 84.92 was congruent with a standard score of 115 and a stanine score of 7 the lowest stanine in the above average range and students with a military parent not deployed to a war zone a mean percentile rank score of 71.30 was congruent with a standard score of 108 and a stanine score of 6 the highest stanine in the average range. Control group students whose parents have no military affiliation mean percentile rank score of 80.90 was congruent with a standard score of 112 and a stanine score of 6 the highest stanine in average range.

Overall, end of sixth-grade NeSA-math achievement percentile rank scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured math proficiency requiring students day-to-day engagement at school and support at home.

Research Question #2 End of Sixth-Grade NeSA-Reading

Research question #2results.Research Question #2analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade NeSA-reading achievement percentile scores. The null hypothesis for the second research question was not rejected for posttest end of sixth-grade NeSA-reading achievement percentile scores for students with a military parent deployed to a war zone ($M = 83.30, SD = 11.82$), students with a military parent not deployed to a war zone ($M = 76.20, SD = 9.35$), and students whose parents have no military affiliation ($M = 81.00, SD = 16.41$) where the overall main effect of posttest end of sixth-grade NeSA-reading achievement percentile scores was not statistically significant, ($F(2, 27) = 0.79, p = 0.464$).

Research question #2conclusions.Students' congruent and not statistically different posttest end of sixth-grade NeSA-reading achievement percentile scores indicated measured achievement exceeding the reading proficiency rating for students with a military parent deployed to a war zone (83.30), students with a military parent not deployed to a war zone (76.20), and control group students whose parents have no military affiliation (81.00). To further contextualize the mean percentile rank scores students with a military parent deployed to a war zone mean percentile rank score of 83.30 was congruent with a standard score of 114 and a stanine score of 7 the lowest stanine in the above average range and students with a military parent not deployed to a war zone mean percentile rank score of 76.20 was congruent with a standard score of 110 and a stanine score of 6 the highest stanine in the average range. Control group students whose parents have no military affiliation mean percentile rank score of 81.00 was congruent with a standard score of 113 and a stanine score of 6 the highest stanine in average range.

Overall, end of sixth-grade NeSA-reading achievement percentile rank scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured reading proficiency requiring students day-to-day engagement at school and support at home.

Research Question #3 End of Sixth-Grade MAP-Math

Research question #3results.Research Question #3analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade MAP Math achievement percentile scores. The null hypothesis for the third research question was rejected for posttest end of sixth-grade MAP Math achievement percentile scores for students with a military parent deployed to a war zone ($M = 82.00, SD = 12.78$), students with a military parent not deployed to a war zone ($M = 64.00, SD = 13.66$), and students whose parents have no military affiliation ($M = 74.40, SD = 13.12$) where the overall main effect of posttest end of sixth-grade MAP Math achievement percentile scores was statistically significant, ($F(2, 27) = 4.69, p = 0.017$). Statistical significance ($p < .05$) was found for one comparison the posttest end of sixth-grade MAP-math achievement percentile scores for students with a military parent deployed to a war zone ($M = 82.00, SD = 12.78$) compared to students with a military parent not deployed to a war zone ($M = 64.00, SD = 13.66$).

Research question #3conclusions.Students' statistically different posttest end of sixth-grade MAP Math achievement percentile scores indicated measured achievement within the average range for students with a military parent deployed to a war zone (82.00), students with a military parent not deployed to a war zone (64.00), and control group students whose parents have no military affiliation (74.40). To further contextualize the mean percentile rank scores students with a military parent deployed to a war zone mean percentile rank score of 82.00 was congruent with a standard score of 113 and a stanine score of 6 the highest stanine in the average range and students with a military parent not deployed to a war zone mean percentile rank score of 64.20 was congruent with a standard score of 105 and a stanine score of 6 the highest stanine in the average range. Control group students whose parents have no military affiliation mean percentile rank score of 74.40 was congruent with a standard score of 109 and a stanine score of 6 the highest stanine in average range.

Overall, end of sixth-grade MAP Math achievement percentile rank scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured average range math performance requiring students day-to-day engagement at school and support at home.

Research Question #4 End of Sixth-Grade MAP-Reading

Research question #4 results. Research Question #4 analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade MAP Reading achievement percentile scores. The null hypothesis for the fourth research question was not rejected for posttest end of sixth-grade MAP Reading achievement percentile scores for students with a military parent deployed to a war zone ($M = 69.50$, $SD = 14.67$), students with a military parent not deployed to a war zone ($M = 69.40$, $SD = 13.72$), and students whose parents have no military affiliation ($M = 67.40$, $SD = 20.18$) where the overall main effect of posttest end of sixth-grade MAP Reading achievement percentile scores was not statistically significant, ($F(2, 27) = 0.05$, $p = 0.951$).

Research question #4 conclusions. Students' congruent and not statistically different posttest end of sixth-grade MAP Reading achievement percentile scores indicated measured achievement within the average range for students with a military parent deployed to a war zone (69.50), students with a military parent not deployed to a war zone (69.40), and control group students whose parents have no military affiliation (67.40). To further contextualize the mean percentile rank scores students with a military parent deployed to a war zone mean percentile rank score of 69.50 was congruent with a standard score of 107 and a stanine score of 6 the highest stanine in the average range and students with a military parent not deployed to a war zone mean percentile rank score of 69.40 was congruent with a standard score of 107 and a stanine score of 6 the highest stanine in the average range. Control group students whose parents have no military affiliation mean percentile rank score of 67.40 was congruent with a standard score of 106 and a stanine score of 6 the highest stanine in average range.

Overall, end of sixth-grade MAP Reading achievement percentile rank scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured reading performance requiring students day-to-day engagement at school and support at home.

Research Question #5 End of Sixth-Grade Descriptive Writing Assessment

Research question #5 results. Research Question #5 analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade District Writing Performance Level scores. The null hypothesis was not rejected for posttest end of sixth-grade District Writing Performance Level, Ideas and Content scores for students with a military parent deployed to a war zone ($M = 3.40$, $SD = 0.45$), students with a military parent not deployed to a war zone ($M = 3.25$, $SD = 0.67$), and students whose parents have no military affiliation ($M = 2.70$, $SD = 1.11$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level, Ideas and Content scores was not statistically significant, ($F(2, 27) = 2.14$, $p = 0.137$). Further, the null hypothesis was not rejected for posttest end of sixth-grade District Writing Performance Level, Voice scores for students with a military parent deployed to a war zone ($M = 3.30$, $SD = 0.63$), students with a military parent not deployed to a war zone ($M = 3.35$, $SD = 0.81$), and students whose parents have no military affiliation ($M = 3.15$, $SD = 0.94$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level, Voice scores was not statistically significant, ($F(2, 27) = 0.17$, $p = 0.844$). Also the null hypothesis was not rejected for posttest end of sixth-grade District Writing Performance Level, Word Choice scores for students with a military parent deployed to a war zone ($M = 3.25$, $SD = 0.82$), students with a military parent not deployed to a war zone ($M = 3.25$, $SD = 0.88$), and students whose parents have no military affiliation ($M = 2.75$, $SD = 0.79$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level, Word Choice scores was not statistically significant, ($F(2, 27) = 1.09$, $p = 0.350$). The null hypothesis was also not rejected for posttest end of sixth-grade District Writing Performance Level, Organization scores for students with a military parent deployed to a war zone ($M = 3.15$, $SD = 0.81$), students with a military parent not deployed to a war zone ($M = 3.05$, $SD = 0.76$), and students whose parents have no military affiliation ($M = 2.80$, $SD = 1.00$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level, Organization scores was not statistically significant, ($F(2, 27) = 0.43$, $p = 0.654$). The null hypothesis was not rejected for posttest end of sixth-grade District Writing Performance Level, Sentence Fluency scores for students with a military parent deployed to a war zone ($M = 3.15$, $SD = 0.62$), students with a military parent not deployed to a war zone ($M = 3.10$, $SD = 0.73$), and students whose parents have no military affiliation ($M = 2.90$, $SD = 0.90$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level.

Sentence Fluency scores was not statistically significant, ($F(2, 27) = 0.30, p = 0.743$). Finally, the null hypothesis was not rejected for posttest end of sixth-grade District Writing Performance Level, Conventions scores for students with a military parent deployed to a war zone ($M = 3.15, SD = 0.57$), students with a military parent not deployed to a war zone ($M = 3.30, SD = 0.75$), and students whose parents have no military affiliation ($M = 3.00, SD = 0.91$) where the overall main effect of posttest end of sixth-grade District Writing Performance Level, Conventions scores was not statistically significant, ($F(2, 27) = 0.46, p = 0.636$).

Research question #5 conclusions. Students' congruent and not statistically different posttest end of sixth-grade District Writing Performance Level scores indicated measured achievement at the proficient level cut score for students with a military parent deployed to a war zone with mean scores for: Ideas and Content (3.40), Voice (3.30), Word Choice (3.20), Organization (3.15), Sentence Fluency (3.15), and Conventions (3.15).

Posttest end of sixth-grade District Writing Performance Level scores indicated measured achievement at the proficient level cut score for students with a military parent not deployed to a war zone with mean scores for: Ideas and Content (3.25), Voice (3.35), Word Choice (3.25), Organization (3.05), Sentence Fluency (3.10), and Conventions (3.30). Posttest end of sixth-grade District Writing Performance Level scores indicated measured achievement at the progressing and proficient level cut score for control group students whose parents have no military affiliation with mean scores for: Ideas and Content (2.70), Voice (3.15), Word Choice (2.75), Organization (2.80), Sentence Fluency (2.90), and Conventions (3.00).

Overall, end of sixth-grade District Writing Performance Level scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured district writing performance requiring students day-to-day engagement at school and support at home.

Research Question #6 End of Sixth-Grade Essential Objectives Level

Research question #6 results. Research Question #6 analyzed students with a military parent deployed to a war zone, students with a military parent not deployed to a war zone, and same school control group students whose parents have no military affiliation end of sixth-grade District Essential Objectives Level scores. The null hypothesis was not rejected for posttest end of sixth-grade District Essential Objectives Level, Language scores for students with a military parent deployed to a war zone ($M = 36.20, SD = 2.86$), students with a military parent not deployed to a war zone ($M = 35.40, SD = 3.04$), and students whose parents have no military affiliation ($M = 35.20, SD = 1.11$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Language scores was not statistically significant, ($F(2, 12) = 0.12, p = 0.887$). Further the null hypothesis was not rejected for posttest end of sixth-grade District Essential Objectives Level, Math scores for students with a military parent deployed to a war zone ($M = 37.00, SD = 2.44$), students with a military parent not deployed to a war zone ($M = 35.75, SD = 1.70$), and students whose parents have no military affiliation ($M = 37.25, SD = 1.25$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Math scores was not statistically significant, ($F(2, 9) = 0.74, p = 0.504$). Moreover, the null hypothesis was not rejected for posttest end of sixth-grade District Essential Objectives Level, Science scores for students with a military parent deployed to a war zone ($M = 37.50, SD = 2.08$), students with a military parent not deployed to a war zone ($M = 36.50, SD = 1.29$), and students whose parents have no military affiliation ($M = 37.25, SD = 2.21$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Science scores was not statistically significant, ($F(2, 9) = 0.30, p = 0.747$). The null hypothesis was also not rejected for posttest end of sixth-grade District Essential Objectives Level, Social Studies scores for students with a military parent deployed to a war zone ($M = 39.60, SD = 0.54$), students with a military parent not deployed to a war zone ($M = 38.40, SD = 1.51$), and students whose parents have no military affiliation ($M = 37.80, SD = 1.78$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Social Studies scores was not statistically significant, ($F(2, 12) = 2.17, p = 0.156$). Also the null hypothesis was not rejected for posttest end of sixth-grade District Essential Objectives Level, Physical Education scores for students with a military parent deployed to a war zone ($M = 38.00, SD = 1.73$), students with a military parent not deployed to a war zone ($M = 38.33, SD = 0.57$), and students whose parents have no military affiliation ($M = 36.33, SD = 0.57$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Physical Education scores was not statistically significant, ($F(2, 6) = 2.82, p = 0.136$).

Finally, the null hypothesis was not rejected for posttest end of sixth-grade District Essential Objectives Level, Music scores for students with a military parent deployed to a war zone ($M = 39.00$, $SD = 0.00$), students with a military parent not deployed to a war zone ($M = 37.00$, $SD = 1.73$), and students whose parents have no military affiliation ($M = 39.33$, $SD = 0.57$) where the overall main effect of posttest end of sixth-grade District Essential Objectives Level, Music scores was not statistically significant, ($F(2, 6) = 4.30$, $p = 0.069$).

Research question #6 conclusions. Students' congruent and not statistically different posttest end of sixth-grade District Essential Objectives Level scores indicated measured achievement at the proficient level cut score for students with a military parent deployed to a war zone with mean scores for: Language (36.20), Math (37.00), Science (37.50), Social Studies (39.60), Physical Education (38.00), and Music (39.00).

Students' congruent and not statistically different posttest end of sixth-grade District Essential Objectives Level scores indicated measured achievement at the proficient level cut score for students with a military parent not deployed to a war zone with mean scores for: Language (35.40), Math (35.75), Science (36.50), Social Studies (38.40), Physical Education (38.33), and Music (37.00). Students' congruent and not statistically different posttest end of sixth-grade District Essential Objectives Level scores indicated measured achievement at the proficient level cut score for control group students whose parents have no military affiliation with mean scores for: Language (35.20), Math (37.25), Science (37.25), Social Studies (37.80), Physical Education (36.33), and Music (39.33).

Overall, end of sixth-grade District Essential Objectives Level scores indicates that the goal of educational wellbeing for these students of military families and control group students is being met and is reflected in measured district Essential Objectives performance requiring students' day-to-day engagement at school and support at home.

Discussion

Some military families may require more assistance in addressing their children's needs, via school programming, mental health services, or resources that can be given in the home. Given that child difficulties are greater for families that experience longer periods of parental absence in the previous years, these families may benefit from targeted support to deal with these stressors at later points in the deployment, not simply during the initial stages. In addition, families in which caretakers are struggling with their own mental health may need more support for both the caregiver and child. Although these programs are being developed and implemented, we have limited empirical data on program effectiveness. Girls and older youth are confronting more difficulties with deployment and reintegration; thus, they may require more assistance (Chandra et al., 2008). Moreover, study findings provide insight into how children with military families are faring and can inform future program and policy development. At the same time however, we know that dozens if not hundreds of programs are already being implemented across the defense and civilian sectors to support military families in coping with deployment. Just as there had been no studies to date that examine the health, functioning, and mental health wellbeing of children with deployed parents during an extended era of conflict, there are also no studies that systematically assess the programs in place to support them. Given the high interest and previous investments in these programs, it will be important to ask questions about whether they should be continued and/or how might they be improved. Findings also suggest that these programs be examined to assess not only how they align with the deployment and reintegration continuum but also how their content matches what we know about needs. Understanding program efficacy and effectiveness will also require more rigorous methodologies to assess the program's impact on child and caregiver outcomes (Chandra, 2008).

Finally, longitudinal research would provide useful information about the effect of different stages of the deployment cycle, children of different ages and the impact of certain confounding variables (e.g. prior family relationships, existing child behavioral and developmental issues) on student achievement over time. Longitudinal research may also give greater insight into protective factors, such as the role of resilience in some military families, which other work has identified as an important but understudied area of research (White et al., 2011). The school district involved in this research is but one of many public school districts in the United States that borders a military installation, thereby serving a diverse, military and civilian, student population.

The students of the military families in this study with clearly measured success were in attendance during a time when the school district was receiving Impact Aid and therefore, it is not clear if the study could be replicated during an extended period without these funds. This funding source was the vehicle used to actually build and staff the school where the research occurred over time (General Accounting Office, 2011).

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Achievement of Sixth-Grade Students With Military Parents Deployed to a War Zone Compared to Controls

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