“Tell Me A Story®”: Promoting Resiliency in Military Children

Katherine-Marie Conover

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“TELL ME A STORY®”: PROMOTING RESILIENCY IN MILITARY CHILDREN

A Dissertation Presented

by

KATHERINE-MARIE VON BRINCKEN CONOVER

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

Doctorate of Philosophy

May 2018

Nursing
“TELL ME A STORY”: PROMOTING RESILIENCY IN MILITARY CHILDREN

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Approved as to style and content by:

__________________________________________
Genevieve Chandler, Chair

__________________________________________
Lisa Chiodo, Member

__________________________________________
Claire E. Hamilton, Member

__________________________________________
Stephen Cavanagh, Dean
College of Nursing
ACKNOWLEDGMENTS

Thanks to my committee members:

Genevieve Chandler (Chair)
Lisa Chiodo
Claire Hamilton

Thanks to the Military Child Education Coalition:

Mary M. Keller, EdD, President and CEO, who approved of my work
Judy Glennon, Manager, Parent Programs, who has been my contact there for years and without whom this research would not have been possible.
Cindy Risch, who arranged so many connections with Parent to Parent teams.
Jen Gibbins, who also arranged connections with Parent to Parent teams.
All seven of the Parent to Parent teams who graciously welcomed me into their events, their homes, gave me rides onto bases, and were generally helpful and cheerful!

Thanks to Cynthia Mendoza, who keeps all us graduate students in line.

And thanks to Ben, my partner in life, who reads my awful first drafts, and keeps me motivated on the bad days.

For Cynthia Jacelon, who has encouraged and supported me for years, and without whom, this dissertation would not be possible.
ABSTRACT

“TELL ME A STORY”: PROMOTING RESILIENCY IN MILITARY CHILDREN

MAY 2018

KATHERINE-MARIE VON BRINCKEN CONOVER
B.S., UNIVERSITY OF MASSACHUSETTS AMHERST
Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Genevieve Chandler

Multiple and lengthy deployments of military members are common and negatively impact children’s well-being. Programs seek to increase resiliency and reduce potential negative impact of parental deployment on children exist but lack empirical evidence to support their effectiveness. Increased parent engagement through reading and subsequent discussion with their children has positive psychology implications and potential to improve resilience. Thus, this study’s purpose was to examine the effectiveness of the intervention Tell Me A Story® (TMAS) in improving resiliency in school-age children (aged 6 to 10 years) of active duty military members. This study also aims to examine the impact of the TMAS intervention on both behavior and resilience to better understand both what the intervention impacts and the potential of increased resilience to positively impact behavior.

Participants were recruited from seven military installations and one mass email from MCEC. This study used pre-post quasi-experimental design with waitlist controls to evaluate effectiveness of TMAS to increase resiliency behaviors in military children via an internet survey. Baseline data was obtained, including demographic, resiliency, health, literacy environment, and behavior instruments.
Children in the intervention group improved resiliency scores, whereas children in the control group did not. Children in the control group had reduced ego-resiliency scores, and this reduction was much greater for boys than for girls. Different from ego-resiliency results, resiliency scores for girls increased, while boys’ scores decreased. Boys internalizing behavior increased in the control group and decreased in the intervention group. Contrary to expected findings, internalizing behavior decreased for control group girls while intervention group girls increased. Externalizing scores for boys increased, while girls scores decreased. Intervention group boys and girls increased externalizing scores. Control group girls decreased scores, while boys increased. Overall high resiliency decreased internalizing behavior. High resiliency decreased internalizing in both intervention and control groups.

Resiliency improves with TMAS. The greater resilience, the less internalizing behavior. Resiliency outcomes were better predictors of problem behavior than TMAS. Gender differences indicate boys may benefit from TMAS more than girls. TMAS increases resiliency and decreases problem behavior for the analyzed sample. Further research needed to determine TMAS effectiveness with general population.
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CHAPTER 1
INTRODUCTION AND PURPOSE

1.1 Introduction

There are 3.6 million military members in the United States of America (Department of Defense, Office of Assistant Secretary of Defense [DOD], 2013). Of those military members, 42.7% have children and over two-thirds of these children are under the age of 12 years (DOD, 2013). It is said that military member’s families serve too (Military Child Education Coalition [MCEC], n.d.). Military children experience a constellation of challenges, while civilian children may experience challenges such as separation and parental mental health, the challenges of civilian children are in most cases singular, while military children experience multiple challenges. Examples of challenges experienced are frequent moves, parents deployed to war zones, and parents returning home with mental health or physical changes (Lemmon & Stafford, 2014). Often military children do not receive the support they need to cope with these challenges. When parents deploy, children often develop social and emotional problems. The types of problems and the problem severity vary based on each child’s stage of development during parental deployment (Hooper, Moore, & Smith, 2014). Examples of social and emotional problems children display are increased depression, anxiety, and problems in school (Park, 2011).

Many military members are often deployed multiple times and for long periods of time. After the devastating effects of September 11th, 2001, military members have reported increased deployment lengths. Family members have reported that deployments can last up to 36 months, with as many as five deployments per military member.
Almost half of military spouses reported concern about the impact of deployment on their children. Of those who are parents, more than 90% reported having children under the age of 18 years during their deployment (Bradbard & Maury, 2014), much higher than the percentage of military members with children reported by the DOD (42.7%). This inconsistency may be because the data reported by the DOD is from the Defense Enrollment and Eligibility Reporting System, which all military members are asked to complete, while the data reported by the BSF is collected data via a survey using only a subsample of the population. Therefore, the BSF sample might, by chance, have more parents with smaller children. Even if the DOD report is an accurate report of the population, there are still a large number of military members with children when deployed.

Given the number of problems these children may display, interventions are needed to assist parents and their children. One potential intervention area is improving child resiliency. Families who have fewer resources are less likely to be resilient compared to those who have more resources, such as cohesiveness and adaptive parental coping (Jackson, Frydenberg, Liang, Higgins, & Murphy, 2015). Resiliency interventions are able to improve outcomes in children and adolescents (Leventhal, DeMaria, Gillham, Andrew, Peabody, & Leventhal, 2015; Magyar-Moe, Owens, & Connolly, 2015).

Resiliency promotion programs may help military children cope with the challenges they face when their parents are deployed (Bowles et al., 2015; Faran, Johnson, Ban, Shue, & Weist, 2015; Mancini, Bowen, O’Neal, & Arnold, 2015). Programs have been developed but few have been evaluated. Thus, the purpose of this
research is to evaluate the effectiveness of the resiliency promotion intervention “Tell Me A Story® (TMAS)” to increase resiliency in military children.

1.2 Background and Significance

Parents of military children report that during deployment, children experience both the negative outcomes of increased anxiety and worry as well as the positive outcomes of increased adaptability and independence (Bradbard & Maury, 2014). This duality of effects is apparent in the inconsistent literature reports regarding child outcomes. While some reports have found military children more resilient than civilian peers (Park, 2011; Ryan-Wenger, 2001) other reports have identified higher rates of behavior problems than their civilian peers (De Pedro et al. 2014). The literature has shown that deployment and stressors of military life affect spouses and military children (Clever & Segal, 2013; Chandra et al., 2010; De Pedro et al., 2011; Dick, 2013; Kelley et al. 2001; Lester & Flake, 2013).

Resiliency promotion programs contain interventions aimed at increasing resiliency behavior in at-risk populations. Many studies have demonstrated how resiliency promotion programs help military members cope with the stressors of war and everyday living (Park, 2011, De Pedro et al., 2014; Drummet, Coleman, & Cable, 2003; Hollingsworth, 2011). Several organizations / programs (e.g. Families OverComing Under Stress, Military Child Education Coalition, Operation Purple Camp, United States Marine Corps school liaison program, Community Family Therapy) have been providing military children with resiliency interventions for years. However, the efficacy of these interventions has not been empirically demonstrated. It is critical that we understand the effectiveness of these resilience interventions. Determining the effectiveness of
resiliency interventions will assist in improving programs that currently exist. Identification of effective interventions will also justify program funding so more at-risk military children can be helped.

The goal of resiliency promotion programs is to teach participants to be more resilient. Interventions that include parents can teach parents to role model resilient behavior and therefore become increasingly resilient themselves. This is important as families that are resilient are better prepared to receive the military member home from deployment (Chandra, Martin, Hawkins, & Richardson, 2010). In addition, higher levels of resiliency have been linked with increased literacy and improved academic performance, indicators of child wellbeing in later life (Martel et al., 2007; Prince-Embury, 2011). Finally, parents who engage in learning activities with their children, such as reading together, are more likely to raise resilient children (Benzies & Mychasiuk, 2009).

It is with the lens of parental involvement in reading activity with their children that home literacy environment is examined. Parent’s activity and education at home influences a child’s home environment, and in turn fosters resiliency outcomes (Benzies & Mychasiuk, 2009). Academic performance, home literacy, and resiliency have been linked in research (Martel et al., 2007; Prince-Embury, 2011; 2013). The home environments that have more reading emphasis and less television time have improved resiliency outcomes in children compared to those with less reading and more television time (Niklas & Schneider, 2014).

Through effective resiliency promotion programs, participants may increase their overall wellness and decrease their need for reactive health care. Reactive health care
(i.e. providing care after a preventable problem has occurred) is ineffectual, expensive, and lowers quality of life outcomes compared to preventative health care (Albee, 1982; Luthar & Cicchetti, 2000).

One method to prevent reactive health care is anticipatory guidance. Anticipatory guidance is when health care providers educate parents how to problem solve and prevent illness and injury in their children (Pridham, 1993). Wide spread application of resiliency promotion programs that provide anticipatory guidance have the potential to result in lowering the cost of healthcare, while having higher levels of health in the population (Albee, 1982; Luthar & Cicchetti, 2000). The Tell Me A Story intervention has the potential to provide anticipatory guidance to prevent emotional problems and promote resiliency for military children.

1.3 Problem Statement

Currently, several resiliency promotion programs targeting military children are in use. However, they have not all been evaluated to determine if they are actually successful at increasing resiliency. As mentioned previously, military children are vulnerable to the many stresses inherent in military life. Therefore, resiliency promotion programs have the potential to help military children to develop stronger resiliency behaviors that will enable them to cope more effectively with possible future stressful events (e.g. deployment of a parent, death of a parent, returning of a parent with mental or physical impairments). Once a program has demonstrated effectiveness in promoting resiliency in military children, it could then be applied across the population. Therefore, the purpose of this research is to evaluate the effectiveness of the resiliency promotion intervention “Tell Me A Story® (TMAS)” in increasing resiliency in military children.
1.4 Purpose Statement

The purpose of this research is to examine the effectiveness of the resiliency promotion intervention TMAS in improving resiliency in school-age children (aged 6 to 10 years) of active duty military members.

1.5 Research Question and Hypothesis

To accomplish the study goals, eight aims were explored.

Aim 1: Examine the effectiveness of the TMAS intervention in increasing resiliency in school-aged military children.

H1a: Children in the TMAS intervention group will have greater pre-post intervention change in resiliency than children in the waitlist control group.

Aim 2: Examine the effectiveness of the TMAS intervention in increasing home literacy environment.

H2a: Home literacy scores among families in the TMAS intervention group will have greater pre-post intervention change than home literacy scores among families in the waitlist control group.

Aim 3: Examine the effectiveness of the TMAS intervention in changing behavior in school-aged military children.

H3a: Children in the TMAS intervention group will have greater pre-post intervention change in behavior than children in the waitlist control group.

Aim 4: Understand the impact of home literacy environment on the relationship between intervention group and resiliency in school-aged military children.

H4a: Home literacy will moderate the relationship between TMAS intervention group and child resiliency scores.
**Aim 5:** Understand the impact of home literacy environment on the relationship between intervention group and behavior in school-aged military children.

H5a: Home literacy will moderate the relationship between TMAS intervention group and child behavior scores.

**Aim 6:** Understand the impact of resiliency on the relationship between intervention group and behavior outcomes in school-aged military children.

H6a: Child resiliency scores will moderate the relationship between TMAS intervention group and child behavior outcomes.

**Aim 7:** Understand the impact of repeated attendance of TMAS on resiliency outcomes in school aged military children.

H7a: Prior TMAS attendance will moderate the relationship between TMAS intervention group and child resiliency scores.

**Aim 8:** Understand the impact of repeated attendance of TMAS in increasing home literacy environment.

H8a: Home literacy scores among families that have previously attended the TMAS intervention will have greater pre-post scores than home literacy scores among families attending for the first time.
It was hypothesized that the covariate of home reading activity of participants will change with the TMAS intervention, and the change in the home reading activity will influence resiliency behavior. It was hypothesized that with the TMAS intervention, the home literacy environment score will improve, theorized to reflect the amount of the intervention activities that parents are engaging with their children at home.

1.6 Chapter 1 Summary

Multiple and lengthy deployments of active duty military members are common and negatively impact military children well-being. Resiliency promotion programs that seek to increase resiliency and reduce the potential negative impact of parental deployment on children exist but lack empirical evidence to support their effectiveness. Increased parent engagement through reading and subsequent discussion with their children has the potential to help improve resilience in their children. Thus, the purpose of this research was to examine the effectiveness of the resiliency promotion intervention TMAS in improving resiliency in school-age children (aged 6 to 10 years) of active duty military members.
CHAPTER 2

REVIEW OF THE LITERATURE

2.1 The Tell Me A Story Program

Tell Me A Story (TMAS), a bibliotherapy intervention, is the focus of this research project. The Military Child Education Coalition (MCEC) began using TMAS in 2005 to help build relationships between parents and children, and create an environment of caring and resilience (Parry, 2008; Military Child Education Coalition [MCEC], n.d.). The TMAS intervention is targeted for children ages 4 to 12 years old. The critical skills taught are optimism, being a caring participant in a community, and reading. By using select literature, children and parents are able to talk about hard to discuss topics. Examples of these topics are moving, parental deployment, and parents returning from deployment. Parents and children participate together in TMAS, creating a family of strong readers, with positive outlooks, and recognition of their active role in their community (MCEC, n.d.).

The TMAS intervention is composed of military families attending a free of charge event, during which there is a large group reading and small group activities led by trained staff (see Event Agenda, Appendix G). During the intervention, families are asked to sit together on the floor for the event. A content expert at the MCEC selects the books out of the 16 TMAS books (see Appendix H) to be used for each aspect of the TMAS intervention based on the needs of the base where the TMAS intervention is to be held. A guest reader, usually the base commander or another VIP, is asked to read the story selected for group reading at the beginning of the event. While the story is read, there is a projection of the corresponding pages, with the text removed, on a large screen.
overhead. After the reading, 4 to 8 small groups are formed of 8 to 12 children, with their parents, in each group, with a discussion facilitator and a scribe. Within the small groups, a guided discussion is facilitated to bring out the salient points of the story. Children are encouraged to independently reach a conclusion about the meaning of the story. The intention for independent conclusions reached is to foster military children’s creativity and thinking. Children are asked age-appropriate questions and each child is encouraged to answer at least one question. For example, when reading the book *Courage*, leading questions that relate specifically to the story, such as “How do you define courage?” or “On pages 8-9, what is the girl doing?” (Answer: riding a bicycle without training wheels for the first time). “How is she being courageous?” Every response given by children are recorded by the volunteer scribes on large writing pads to provide the children with feelings of importance of their input as related to the conversation-orientation of families. The guided discussion via the facilitators provides role modeling for the parents of conversation and literacy enhancing behavior (J. Glennon, personal communication, June 22, 2015).

After the discussion, there are activities designed to accompany the selected story. Often this activity is a craft project or a puzzle. The MCEC provides the materials and the children provide their imagination. An example of an activity accompanying a story is the creation of snakes using markers for coloring and socks. This activity is completed after the story of *Verdi* is read, a tale about a snake who resists turning green because it would mean growing up and changing (Military Child Education Coalition [MCEC], 2010). Another example of an accompanying activity is the creation of chocolate parachutes using cloth, yarn, and chocolate. This activity follows the reading of
*Mercedes and the Chocolate Pilot,* a true story of the hope an American pilot brought to children of the Berlin Blockade by kind acts (MCEC, 2010). These activities are either completed at the event or the supplies are provided to take home. The activities are designed with materials that are easy to find and reproduce at home (J. Glennon, personal communication, June 22, 2015).

Families will leave the event with a book, different from what was read at the event, to add to their home library, handouts for parents regarding child literacy and reading time with children, and supplemental books (see Appendix H; J. Glennon, personal communication, June 22, 2015).

The TMAS intervention is produced by the MCEC, who require a one-hour training for all facilitation staff prior to the first event they facilitate. Training is held via a web conference platform or in person if a trainer is available locally. Facilitation staff is encouraged to attend the National Training Seminar, an annual conference in Washington D.C. where training and quality assurance occurs. Topics covered during the training include how to organize group discussion, how to handle children who have different characteristics (quiet, loud, copying, etc.), and how to keep the discussion on track. The training is an open discussion, focused on the 16 books of the intervention and specific notes are provided for each book (J. Glennon, personal communication November 4, 2015).

The MCEC facilitates the TMAS intervention with local volunteer teams (such as Parent2Parent, another MCEC program initiative). The MCEC provides support for the TMAS intervention in the form of marketing materials, event programs, books, the intellectual property material, and supplemental publications. The military installation
and the local volunteer group is expected to provide the location, the guest reader, advertising for the event, and coordinating volunteers. Local commitment and a committed volunteer team is required for event success. Volunteers at the event have a variety of jobs for success, such as discussion facilitation, scribes, registration, snack table, craft oversight, RSVP, and other tasks as needed (J. Glennon, personal communication, November 4, 2015). The MCEC have provided the TMAS intervention since September 11, 2005, and strive for consistency in each event through the training of volunteers, provision to the local groups of materials and books at a discounted price, and requirement of after action reports within 5 days of the event (MCEC, 2010).

TMAS books are selected for their themes matching positive psychology. TMAS books with a primary theme of optimism are: *Mercedes and the Chocolate Pilot*, *Odd Velvet*, and *The Brand New Kid*. TMAS books with a primary or secondary theme of perseverance are: *Giraffes Can’t Dance*, *Zen Shorts*, *Listen to the Wind*, *The Three Questions*, *The Remarkable Farkle McBride*, *Click, Clack, Moo*, *Cows that Type*, *While You Were Away*, *More Than Anything Else*, and *Night Catch*. TMAS books with a primary theme of citizenship (meaning belonging and participating in a community) are: *How to Bake an American Pie*, *Crow Call*, and *Courage*. See appendix H for a matrix of book selections and themes.

### 2.2 Introduction to Literature Search

The literature review addresses four primary topics including the (a) unique needs of military children, (b) stressors of military children, (c) understanding of resiliency, resiliency promotion programs, and resiliency theories, and (d) underpinnings of bibliotherapy. The impetus for the literature search was: to identify needs and stressors
of military children; to characterize the existing knowledge of resiliency, resiliency promotion programs, and resiliency theory; and lastly to understand the intervention of bibliotherapy. These topics form the structure of TMAS. The TMAS intervention is a resiliency promotion program for military children that utilizes the principles of bibliotherapy and this study evaluated its efficacy.

2.3 Literature Search Methods

A literature search for all English-language articles on resiliency of military children was performed. The following keywords were used “resilienc*” “resilience promotion” “resiliency promotion” “tell me a story” “bibliotherapy” “military famil*” in the databases of CINAHL, PubMed, Google Scholar, and ReadCube. The * in search terms indicates that different endings are acceptable to the database search. This allows searches to not be limited to endings such as “resiliency” or “resilience” exact matches. These search terms were selected as they are directly descriptive aspects of the research question regarding resiliency outcomes of military children. No date limitations were set, but literature was reviewed chronologically, starting with most recent publications. Priority review was given to articles published in the last 5 years. Articles in English ranged from years 1971 to 2015. There were several thousand results, however, only over five hundred articles abstracts were reviewed (using the process outlined above), with inclusion criteria of: challenges of military families (any member), resiliency of military families (any member), resiliency promotion programs, and resiliency promotion programs for military families. Articles were also gathered from the reference lists of reviewed articles, to identify historically seminal articles. During review and annotation
of included articles, articles focusing solely on spouses or military members were excluded.

2.4 Military Children

The Global War on Terror is one of the many recent conflicts leading to increased operational tempo and therefore increased deployments. Research focusing on military children and the impact of parents who are military members has shown both positive and challenging aspects of wartime deployment (Acion et al., 2013; Bowen et al., 2003; Bowen & Martin, 2011; Hooper, Moore, & Smith, 2014; Lemmon & Stafford, 2014; Maguire & Wilson, 2013; Porter, 2013; Ryan-Wenger, 2001). The majority of this literature is descriptive. Case studies are used to illustrate the risk and protective factors of military life, as well as the interaction between civilian and military services (Lemmon & Stafford, 2014; Porter, 2013). Large sample surveys of the U.S. population identify military children within the larger sample, finding significant difference between civilian and military children relating to risk for substance use (Acion et al., 2013). Systematic literature reviews have summarized decades of data, finding that military children have different childhoods than civilian children, as well as the trait of putting their non-deployed parent’s well-being before their own (Hooper, Moore, & Smith, 2014). Mixed method studies found military children, specifically children active duty military members (compared to reserve or civilian) had difficulty relaxing, and children of reserve and active duty military members are more likely to fear for their parent’s lives (Ryan-Wenger, 2001). When researchers focus solely on military children without comparing them to civilian children, strengths of military children emerge, such as their community resources and family adaptation as need arises (Bowen et al., 2003).
Deployment of a parent is a trying time for military children. The state of the literature is that of evidence reviews (McGuinness & McGuinness, 2014), literature reviews (Maholmes, 2012; Paley, Lester, & Morgil, 2013; Siegel & Davis, 2013), theoretical papers (Logan, 1987; Padden & Agazo, 2013; Pincus et al., 2001), and a handful of studies testing the theories (Agazio, 2012; Sadatradiei, 2014; Threatts, 2013). To better understand the effect of parental deployment on military children, a historical review of TRICARE (the insurance system for active duty military members and their dependents) records was conducted, finding increases in care for military children during parental deployment (Laresen et al. 2012). Qualitative studies on perspectives by school staff about military children parental deployment found perceived increases in problems in school (Chandra, Martin, Hawkins, & Richardson, 2010). The literature on deployment related problems for military children have identified areas of concern associated with deployment, but no evidenced-based interventions have sought to prevent these problems from occurring.

In this section on military children, relevant literature on resiliency relating to military children will be discussed. Subsections are divided into risk and protective factors, stressors and challenges, strengths, and deployment impacts. These sections are intended to give an overview of the context that military children dwell, and the state of the literature regarding their resiliency.

2.4.1 Risk and Protective Factors

There are a variety of risk and protective factors for military children. Lemmon and Stafford (2014) describe the impact of challenges on “Ben.” Via a case study of the teenage boy whose Army father has been deployed in the Global War on Terror many
times throughout Ben’s life, Ben demonstrates both resilient behaviors and vulnerable behaviors in the face of many challenges. According to the case study, factors impacting Ben are his father’s multiple deployments, depression, and PTSD, and his parent’s divorce.

Lemmon and Stafford identified the risk factors associated with military children lifestyles, such as frequent moving, which occurs an average of every three years, when parent’s duty station changes. Moving occurs whether the family lives on or off a military installation. When military children move, they experience a disruption of care, from a variety of causes. Some of these causes are changing environments and resources, and changing social networks caused by leaving friends behind. Lemmon and Stafford identified that the frequency of moves can either positively or negatively affect children. Positive effects include increased ability to make new friends and negative effects include children who may turn inward to avoid social risks. Children who have moved frequently may have a skewed sense of belonging, which may come from a difficulty answering the common question, “Where are you from?” (Lemmon & Stafford, 2014).

Lemmon and Stafford also identify protective factors of military culture as the community supports of formal and informal social networks on military installations. Lemmon and Stafford identified benefits for children living on or near a military installation (a.k.a. living on base) to include; accessible health care, regular income from their parent’s service, discounted food, and free or tax-free housing. On military installations there are often after-school programs, recreational facilities, childcare, and programs for the family. This enhanced and supportive community is an important protective factor for military children.
2.4.2 Stressors and Challenges

It is widely published in the literature that civilian children and military children have exposures to different types of stressors (e.g. Clever & Segal, 2013; De Pedro et al. 2014; Easterbrooks, Ginsberg, & Lerner, 2013; Jensen, Xenakis, Wolf, & Bain, 1991; Lagrone, 1978; Morrison, 1981; Park, 2011; Ryan-Wenger, 2001). Normative military life includes relocation, externally changing expectations on parents through promotions and new duties, and parental wartime deployment with risk of combat injury (Bowen & Martin, 2011). Part of the life of military families is the incorporation of military culture and values into the military family’s values, such as collectivism, hierarchy structure, authority, control, and mission readiness above all else (Maguire & Wilson, 2013).

The phenomena of parentification of military children has been studied empirically and a systematic literature review of 14 empirical studies from 1996 to 2012 by Hooper, Moore, and Smith (2014), found that parents rely more on their children for emotional support and help around the house during deployment of spouses. The researchers reviewed the findings of the studies, and also compared their methodologies. Hooper et al. found that military children tend to suppress their needs during deployment, putting the wellbeing of their parents first.

Increased stressors on military children without additional coping strategies can affect the behavior of a child. A descriptive mixed method study that compared children (ages 8 to 11 years) within 18 families on active duty, 25 families in the reserve, and 48 civilian families on the topics of perception of war, fears of war, anxiety, coping strategies, and emotional problems found that among the three groups, there was no difference in anxiety, but that reserve and civilian children demonstrated a greater ability.
to relax, compared to their active duty peers. Ryan-Wenger and research assistants conducted 20 to 30 minute interviews with children in their home, during which time children completed the Revised Manifest Anxiety Scale to measure anxiety, Human Figure Drawings as a measure of emotional indicators, School Age Children’s Coping Strategies Inventory to measure coping strategies, and answered 17 open ended questions to identify the concept of threat of war for the children (Ryan-Wenger, 2001). None of the findings from the scales were found to be statistically significant. However, the researchers found via the open ended questions that reserve and active duty children were more likely to believe that a parent will go to war and die when compared to civilian children beliefs on war. The researchers believed that the scales lack of statistically significant findings combined with the revealing findings from the interviews to indicate the need for a more sensitive self-report instrument to be developed regarding children’s perception of war (Ryan-Wenger, 2001). Measuring how children perceive war and their parent’s involvement may give researchers insight into the stressors and challenges they face, such as substance misuse.

Substance misuse has been found to be a higher risk for military children, possibly due to disrupted living environments and parental deployment. An observational and cross sectional study of 78,240 6th, 8th, and 11th graders from Iowa in 2010 found that military children with deployed parents are at higher risk for substance use than civilian children. The research group completed a secondary data analysis of the Iowa Youth Survey, grouping the respondents as having a currently deployed military parent, recently returned military parent, or a non-military parent, and then examining the variables of interest: ever drink alcohol, past 30-day binge drinking, past 30-day
marijuana and illegal drug use, and prescription drug misuse. They found that parent deployment is a risk factor for binge drinking, misuse of prescription drugs, and marijuana and illegal drug use. The researchers also found that when parents are deployed, children were more likely to have disrupted living arrangements, such as moving in with relatives or moving “closer to home”. With those disrupted living arrangements, they found an increase in substance misuse, especially for military children not living with a parent or relative (Acion et al., 2013).

2.3.3 Strengths

Military culture has many positive aspects, such as sense of community. A community needs assessment of 20,569 Air Force member and civilian spouse dyads on 82 U.S. Air Force bases found empiric support of a community practice model. Bowen et al. (2003) used a 16-item survey measuring four concepts; unit support, informal community support, sense of community, and family adaptation. The researchers found that variables that influenced sense of community or family adaptation were housing location, base location, community tenure, and number of children (Bowen et al., 2003).

2.4.4 Deployment Cycle Impacts

This section describes various impacts of deployment on military children. Parental deployment is a time of increased stress for military children. It is from this theoretical and evidenced-based perspective that the anticipatory guidance is needed for military children to cope with the challenges of parental deployment.

Absence of parents, via deployment, can lead to emotional and behavioral problems in children. McGuinness and McGuinness (2014) stated that military members are often repeatedly deployed, impacting their family at home. An evidence review of
three research studies discovered the impact of a parent’s combat deployment on military children, finding that during deployment, children experience long periods of uncertainty, a sense of danger, increased rates of depression, anxiety, and academic problems. These problems occurred in higher rates with repeated parental deployments. McGuinness and McGuinness did not indicate their methodology for their review in the article.

Multiple deployments are a common part of military careers. Paley, Lester, and Mogil (2013) applied a family systems and ecological perspective for understanding family, individual, and parental adjustment to a literature review of how military families deal with repeated deployment. They did not indicate their methods for collecting, identifying, or analyzing the articles they included, nor the total number of articles included in the review. Paley, Lester, and Mogil state that the increase in technology used for communication has changed the dynamic of deployment. While technology allows for real-time communication to occur, it does not mean that the challenges faced by family members at home or on deployment are any easier. Paley and associates argue that real-time communication increases exposure of stressors experienced by all members of the family during deployment. This means that the home front stressors are brought to the warfront, and vice versa. Paley, Lester, and Mogil cite prior studies finding that school aged children have increased behavioral, school, and sleep problems when parents deploy (Card et al. 2011; Flake et al. 2009; Eide et al. 2010; Lester et al. 2010, as cited by Paley, Lester, & Morgil, 2013). Prior literature on PTSD of parents is used as evidence supporting the impact of parental PTSD on children through a concept referred to as “secondary traumatization.” Possible causes of secondary traumatization may occur when another person is negatively affected by the military member’s mental health status.
The researchers discussed the theory of attachment as a perspective to understand the deployment phenomena of military children relying on their at-home parent more than usual, relating to the concept of parentification, discussed previously. They indicated that using a family systems model, the mental health of parents is paramount to the wellbeing of the child. The researchers stated that the combination of an all-volunteer military and the reduction in the size of the military, multiple deployments occur commonly. Multiple deployments occur in the career of military members in all branches, deeply impacting military children (Paley, Lester, & Morgil, 2013).

Regarding resiliency and military families, specific factors related to deployment have been addressed. In an article describing the theoretical propositions of the Deployment Risk and Resilience Model for social work, Wooten (2013) explains the importance of a military-informed model to assist with identification of risk and protective factors and the use of a biopsychosocial framework within the military context. Wooten explains how the model has three concepts within it unique to the military context: deployment disruption, post-deployment reintegration, and post-military adjustment. Wooten defines deployment resilience as the “ability to resist the stress of deployment” (Van Breda, 2001, as cited by Wooten, 2013, p. 704). The model is intended to assist social workers to work with military members and their families.

2.4.4.1 Cycle of Deployment

Since Logan (1987) introduced the Emotional Cycle of Deployment, several researchers have tested and updated the model (Agazio, 2012; Padden & Agazio, 2013; Pincus et al., 2001; Sadatrafiei, 2014; Threatts, 2013). In the current iteration of the model (see Figure 2), there are five stages that cycle (Padden & Agazio, 2013).
Figure 2: Deployment cycle as experienced by the family

The cycle begins with notification of deployment, usually one to six weeks prior to deployment. The first two stages of the deployment cycle model occur prior to the military member leaving home, during that 6-week period. Anticipation of loss is the stage when the wife and husband will try to prepare for deployment through getting tasks done, but there may be emotional upheavals. Detachment and withdrawal occur during the last week before deployment, and is the stage where the time is short, so meaningful spousal relations doesn’t happen for a variety of reasons (Logan, 1987).

Pincus et al. (2001) describe the pre-deployment stage as encompassing anticipation of loss, preparation for departure, and a sense of disconnection between the family and the military member before they have left. Qualitative model testing found that only 4 out of 20 participants reported communicating or planning pre-deployment activities with their children to prepare them for the upcoming deployment (Threatts, 2013).
In the Padden and Agazio model, the cycle of deployment begins with the pre-deployment stage and all members of the family become busy with preparation for departure (Padden & Agazio, 2013). Agazio found that when the deployment notification came, mothers to be deployed began using strategies identified as: distancing, protecting, balancing, and summoning the village. The distancing strategy, as identified by participants, is when the mothers focused more on the mission and not their usual child-care responsibilities. Protecting strategies identified by the participants were entailing age-appropriate discussions with their children, regarding what their deployment will mean. The summoning the village strategy is composed of the mothers determining who will care for their children while they are deployed. Participants identified the balancing strategy as working to keep their relationship with their children while letting go of the day-to-day decisions. Agazio found that balancing strategizes that began with pre-deployment continued until the mother reintegrated in the post-deployment stage (Agazio, 2013).

2.4.4.2 Deployment

According to Logan’s model, when their husbands leave home during deployment, spouses experience stages three, four, and five. Emotional disorganization lasts approximately the first six weeks after their husbands leave. Emotional disorganization is the stage when wives feel a myriad of emotions, positive and negative, regarding the disruption of their husband’s deployment (Logan, 1987). Participant statements provided support for emotional disorganization, regarding the mother’s awareness of how their children’s emotions fluctuated and sought emotional support during parental deployment (Sadatrafiei, 2014).
Pincus et al. describe the second stage, deployment, as lasting through the first month after the military member’s departure. This is described similarly to Logan’s third stage, emotional disorganization, in that for the family members at home, there is emotional disorientation and a sense of overwhelming responsibilities (Pincus et al., 2001). All of the case study participants reported experiencing phenomena supporting the concept of emotional disregulation of children during the deployment stage of the model. This lends support for a central theme in this proposed project that deployment is a key time of upheaval for military members, and anticipatory guidance is ideal (Threatts, 2013).

The main focus during the deployment stage is setting up reliable communication (Padden & Agazio, 2013). Normalizing strategies were identified by the participants as trying to keep life as same as possible for the children, despite deployment changes (Agazio, 2012).

2.4.4.3 Sustainment

Recovery and stabilization stage is when new patterns are established and wives experience a sense of independence. Recovery and stabilization occurs for a variable amount of time, from after the sixth week of absence to notification of return, which begins the anticipation of homecoming stage (Logan, 1987). Support for recovery and stabilization emerged as participant report of the need to schedule time and attend to the needs of their mental health need of their children, which, in turn, allowed the mother’s to become more aware of their own skills and become more resilient (Sadatrafiei, 2014).

The sustainment stage occurs after the first month of the military member leaving home through the notification of the military member’s impending return home. The
length of this phase varies with each branch, unit, and military member. During this stage the family discovers and implements coping mechanisms, similar to Logan’s fourth stage, recovery and stabilization (Pincus et al., 2001). All of the case study participants reported experiencing phenomena supporting the sustainment stage. Often during the sustainment stage participants used the term “single parent” to describe themselves, even though they remain married and “with” the military member. Participants reported that their children feel ambiguity and uncertainty during parental deployment. Children had focus problems at school, and routine changes caused emotional disruptions. To cope with the challenge of deployment, participants reported becoming familiar with resources on and off base, as well as using social media to connect with peers. Participants reported adapting available resources to their family (Threatts, 2013).

Agazio found that during the entire cycle of deployment, mothers employed communicating and normalizing strategies. Communicating strategies were identified as voice, video, and text communication while on deployment to reach their children back home. These communication methods varied with where the mothers were deployed and the type of mission they were assigned (Agazio, 2012).

2.4.4.4 Re-Deployment

Anticipation of homecoming is when there is joy, but also busyness to prepare the home so that it is “perfect” for the military member’s return (Logan, 1987). In the Pincus et al. model, upon receipt of notification of military member’s return, the re-deployment stage begins. The re-deployment stage is when the military member is returning home from deployment, not to be confused with repeated deployment, which is the military member leaving home again. Pincus et al. indicate that the re-deployment stage takes
less than time than Logan’s fifth stage, anticipation of homecoming (one month versus six weeks). It is unclear if this reduction of time for the family to know and anticipate the military member’s return is due to emerging research or an assumption from the increase in communication speeds due to technology advances (such as mobile phones, video chats, email, etc.). Both Pincus et al. and Logan describe the anticipation of the military member returning home as a time of new emotional upset. This time is full of fears of how everyone has changed during the time apart as well as the impending joy of being reunited (Pincus et al., 2001).

Depending on the needs of the military, re-deployment stage may be less than a month. This stage is often difficult due to the complex logistical and emotional process of returning from a mission (Padden & Agazio, 2013).

2.4.4.5 Post-Deployment

Post-deployment is during the six weeks after their husbands return, which is the stage when the renegotiation of marriage contract occurs, and then, finally, reintegration and stabilization stage for six to 12 weeks after the return. Reintegration and stabilization is the stage when the family acts as a whole again, and patterns are again established (Logan, 1987). Support for reintegration and stabilization stage presented as participants reporting that their husbands were eager to work hard to join back into the family, as well as to connect emotionally with their children upon their return (Sadatrafiei, 2014).

Pincus et al. state that the post-deployment stage begins with arrival home and lasts three to six months after the military member’s return. Pincus et al. describe a honeymoon period, which Logan did not describe. The honeymoon period is often short, followed by the need for family members to re-align their expectations of each other.
This is similar to what was described by Logan as the sixth stage, renegotiation of marriage contract, indicating that the contract is an unwritten, and too often unspoken, list of spousal exceptions. Pincus et al. include in this stage reintegration challenges that can occur with children vary depending on their stage of development. Therefore, the challenges children face are not limited to the duration of their parent’s deployment, but also when they return (Pincus et al., 2001). This indicates that interventions that carry through deployments are also needed prior to parent deployment.

The final part of the post deployment stage, described by Pincus et al. similarly to Logan’s seventh stage, reintegration and stabilization, in which the family grows stronger together and establishes a new normal. This new normal is created as the family renegotiates roles and the parents re-form as a team. The important and difficult aspect of this is that not only has the military member changed from the deployment, but the family has also changed in their absence. This means that things are not the same as before deployment, but with work and patience, families can become a functioning part of the family again (Pincus et al., 2001).

The post-deployment stage begins with joy but quickly can be challenging due to role renegotiation. Often times, the military member can have another deployment, restarting the cycle (Padden & Agazio, 2013).

2.4.4.6 Model Development and Testing

The research that has tested the model has all been qualitative: grounded theory (Agazio, 2012), case study (Threatts, 2013), and phenomenology (Sadatrafiei, 2014). Therefore, quantitative model testing is the next logical step for this model.
The most commonly cited cycle of deployment related to military families is the Emotional Cycle of Deployment model for military spouses (Logan, 1987). Logan developed the model to describe how Navy wives experienced deployments of their husbands, lasting three months or longer. Logan describes the model as she developed it, however, no initial model testing is mentioned nor are there evidence sources cited in the article.

Model testing of Logan’s Emotional Cycle of Deployment has been conducted on the deployment stages in relation to mother’s resiliency. In a qualitative dissertation on the lived experience of seven civilian mothers in San Diego, CA during their husband’s deployment, Sadatrafiei (2014) used Logan’s (1987) Emotional Cycle of Deployment model as a theoretical framework. The researcher conducted semi-structured interviews, which were analyzed via the six-step method of interpretive phenomenological analysis. Six themes of mother’s resiliency emerged from the data. These themes are: 1) perception of importance of resilient attitude, 2) effect of mother’s resiliency level on the marriage, 3) the mother’s self-care and its effect on her resiliency, 4) social and community support related to mother’s resiliency, 5) lifestyle of the mother during deployment, and 6) the roles and growth of the family. Therefore, the model testing completed by Sadatrafiei provided support for Logan’s model regarding stages of duration of separation (stages 3, 4, and 7), but themes regarding the aspects of several stages of the model did not emerge and were not supported by this research.

Pincus, House, Christensen, and Adler (2001) presented an update to Logan’s Emotional Cycle of Deployment. The updated cycle of deployment includes all members
of the family. Pincus et al. also did not provide methods for developing their model, nor do they cite evidence.

For the sustainment stage, Pincus et al. include age specific information regarding coping with deployment. Regarding children aged 6 to 10 years; behavior changes during the sustainment phase may include focusing on the deployed parent missing key life events (i.e. birthdays). The authors provide recommendations of lowering expectations while maintaining normal routines, as well as providing more physical attention and more opportunity to talk about their feelings.

The Pincus et al. model received empirical evidence supporting the phases and phenomena experienced by military families during deployment. In a qualitative dissertation of semi structured interviews from 20 military mothers of 37 children in pre-kindergarten to 5th grade from Fort Bragg, NC, Threatts (2013) used the Pincus et al. (2001) model as a theoretic foundation of the deployment experience for the military family. Threatts included questions specifically directed to provide evidence for the cycle of deployment model. A typical case presented from the participants (13 out of 20) reinforced the phenomena of preparation for departure in the pre-deployment stage.

In addition to the experiences of the participants regarding the expected aspect of the sustainment phase of the model, participants commented further, regarding a phenomenon referred to as R&R. Participants described R&R as when a military member comes home from deployment for 2 weeks, only to leave again. All of the participants mentioned the disruption it caused, and how hard it was to recover from (Threatts, 2013).
Participants combined phenomena in the model’s re-deployment and post-deployment stages, but all 20 participants confirmed the adjustment difficulties in those stages, with common themes regarding role changes and power struggles (Threatts, 2013).

Technology advances have changed how the deployment cycle functions for families through improved real-time communication, and the advent of the 24-hour news networks bringing the combat zone into homes. Padden and Agazio (2013) describe their contributions to the work of Pincus et al. (2001) with application to current technology (Figure 2).

The Padden and Agazio version of the deployment cycle model has found support from female military members who were deployed. In a qualitative grounded theory study of 37 military women with children aged 3 months to 12 years at the time of their mother’s deployment, Agazio (2012) found that Padden and Agazio Cycle of Deployment has evidentiary support. Agazio gathered data from semi-structure interviews with mothers lasting 60 to 90 minutes, analyzed using the constant comparison method. The researcher indicated that when the relationship between mother and child are not strong during deployment, problems can be worsened, and described strategies to help with the relationship between mother and child for the various stages of deployment. Such strategies were labeled as communicating, distancing, protecting, normalizing, balancing, and summoning the village, and are aimed to help protect the maternal bond between mother and child during the deployment cycle.
2.4.4.7 Effect of Parental Deployment on Military Children

The effect of parental deployment on children can be very significant. As described before, Paley et al. (2013) have demonstrated increased rates of problems at school, sleep disturbances, and internalizing and externalizing problems. These problems and stressors have the potential decrease the overall resiliency of these children.

Problem behaviors for military children increase during parental deployment. In a quasi-experimental historical review of TRICARE records of 55,000 non pregnant spouses and 137,000 children of deployed and non-deployed military members, Larson et al. (2012) found that compared to children of non-deployed military members, children of deployed military members showed an increase in specialist office visits, use of antidepressants, and use of anti-anxiety medications. The researchers examined the Army TRICARE records in the fiscal year 2007, assigning the records of the dependents to either the deployment group (if they had any days of deployment for FY 2007) or no deployment group (if they had no days of deployment for 24 consecutive months beginning October 1, 2006). The researchers analyzed institutional stays, emergency department visits, generalist office visits, specialist office visits, use of any prescription medication, or use of medication within the following classifications: psychotropic, antidepressant, antianxiety, sleep aid, or stimulants. They also analyzed where care was received; categorizing site of care as either from a civilian provider or a military treatment facility. Larson et al. found that during the year of deployment, specialist care — most of which was psychiatric — increased, primary care provider visits decreased, and that there was a change in care sites from military treatment facilities to civilian
providers. This demonstrates that within the military family population, deployment pays a role in child behaviors, which is seen in specialist visit and medication increases.

Underlying causes of stress increases for military children during parental deployment is not fully understood. According to attachment and family stress theories, school aged children are learning how to control impulses, express their feelings, and developing self-awareness. When parents have problems; stress levels increase for military children. Increased stress on military children negatively affects academics, increases conduct problems, and leads to poor peer relationships (Maholmes, 2012).

In a clinical report directed at pediatricians, Siegel and Davis (2013) discussed the mental and physical health needs of military children. Regarding school age children, the authors stated that the most influential factor for military children outcomes is the level of stress of the parent at home. The authors stated that school aged military children may feel that their parent’s deployment is their fault and not fully understand why their parent is being deployed. The authors emphasized the importance of the presence of a trusted adult, which can be paramount to help children feel safe and secure. To increase resilience during a parent’s deployment, the authors provide pediatrician practice recommendations (Table 1).

Table 1: Recommendations for promoting resilience during deployment

<table>
<thead>
<tr>
<th>Recommendation</th>
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<tr>
<td>writing letters and sending care packages</td>
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<tr>
<td>count down calendars</td>
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<tr>
<td>hanging pictures of the military member in prominent places</td>
</tr>
<tr>
<td>decreasing children’s exposure to news about the war</td>
</tr>
<tr>
<td>having the deployed military member record them reading a story to be played for the child</td>
</tr>
<tr>
<td>having a trusted adult available to the children for the duration of the deployment</td>
</tr>
<tr>
<td>maintaining daily routines</td>
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<tr>
<td>providing time and space for age appropriate expression of feelings</td>
</tr>
<tr>
<td>keeping the children’s teachers in the loop regarding parental deployment status</td>
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<tr>
<td>making a scrapbook of the child’s achievements for when the military member returns</td>
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Siegel and Davis reiterated that through supporting the at-home parent, the military children are supported. The authors did not indicate any evidence regarding efficacy of the recommended strategies.

Siegel and Davis (2013) recommend that civilian schools, which many military children attend, be aware of parental deployment status, so they understand any new or changed behaviors of children and can help appropriately. A large portion, “more than 80% of children with military parents attend civilian public schools (Savitsky et al., 2009)” (as cited by Porter, 2013, p. 780). Civilian public schools may not be familiar with stressors of military service, and may not be aware that a parent is deployed or about to be deployed.

How children react to parental deployment varies. In a qualitative study of 148 school staff from 12 schools that serve U.S. military installations, Chandra, Martin, Hawkins, and Richardson (2010) found that school staff believed that effects of parental deployment varies for different children. The researchers conducted semi-structured interviews and focus groups on the topics regarding military children, such as behavioral, social, and academic problems when parents are deployed. The researchers found that staff believed that stress and anxiety related to parental deployment and the mental health issues of the at-home parents contributed to those students who didn’t cope well with parental deployment.

The at-home parent’s well-being is noticed by military children (Hooper et al., 2014). The stress and emotional disturbances the parent feels can be translated to the child. The military child also is impacted by difficulties the service member experiences as part of returning home (Paley et al., 2013). The experience of translation of stress
from parents to children during and after deployment indicates that the ideal time to prepare for resiliency to stressors is before the stressors occur, such as prior to parental deployment. Since the challenges of deployment and post deployment have been identified, it is ideal to give military children the tools they need to deal with challenges before they occur. Especially since it is widely known in the literature when the challenges will occur, meaning during deployment (i.e. Clever & Segal, 2013; Chandra et al., 2010; De Pedro et al., 2011; Dick, 2013; Kelley et al. 2001; Lester & Flake, 2013).

In summary, the research literature identifies that there are many stressors affecting military children. Worry for parents, absence of adult role models, relocations, and increased responsibilities are common challenges that occur during the deployment cycle. This research seeks to determine if these stressors are best overcome with resiliency interventions prior to parental deployment.

2.5 Resiliency

Ungar’s definition of resilience is used to guide this research. Ungar (2012) states that:

Resilience is, therefore, the ecologically complex (multi-dimensional) processes that people engage in that makes positive growth possible (e.g., engaging in school, resisting prejudice, creating networks of support, attending religious institutions), all of which are dependent upon the capacity of social and physical ecologies to provide opportunities for positive adaptation (preferably in ways that express prosocial collective norms). When resilience is measured as an outcome, individual traits, behaviors and cognitions are always outcomes that result from
positive development processes that have been made possible by an individual’s wider ecology. (eBook location 644)

Initial research into the resiliency concept will be described, including: risk and protective factors of resilient outcomes, resilient adaptation to challenges, the process of resilience, resiliency as an intervention, and resiliency promotion programs.

2.5.1 Concept of Resiliency

As defined in the beginning of this section, resiliency is a process where people navigate through their resources, and negotiate changes to their ecology so that they may overcome challenges encountered. From the ecological perspective, people adapt from within and from their environment in order to create change. This change may not be visible to the outside observer, as the social or physical ecology may not have changed, but within the person’s mind, an ecology in itself, a change in how they will navigate and negotiate for their needs occurs (Ungar, 2012).

While the literature shows that resiliency can be classified as either a trait or a process (Jacelon, 1997), research has found a relationship between the degree of resiliency that the individual possesses and the combination of biopsychosocial homeostasis, protective factors, past stressors, and how well the individual has coped with past stressors. Biopsychosocial homeostasis is defined as when an individual’s physical body, mental health, and social well-being are balance with the environment and the needs of the individual (Richardson, 2002). In accord with that idea, Rutter (1999) stated that resiliency is more than the sum of its parts. Rutter meant that merely having self-efficacy, social competence, or positive mental health does not lead to resiliency. Aspects that contribute to resilience of an individual have been defined as four patterns of
resilience as: how one feels about self, one’s perceived role, perceived skills, and personal beliefs (Polk, 1997). Sense of self is a resiliency theme found multiple times in the literature.

The importance of intervening early in children’s lives for improved resilience behaviors is inferred from the literature. Beginning in 1954, Werner, Bierman, and French (1971) followed all of the children born within the Kauai, Hawaii community for a period of 10 years and were able to observe the effect between environment and stress, as well as create predictive values for resilient outcomes. Werner et al. examined birth rates, birth weights, fetal deaths, and childhood deaths, and then compared these statistics to the environment. Werner et al. found that the environment accounted for almost all of the problems noted in early life. Werner et al. stated that:

The results of our study and those of longitudinal investigations of the last decade suggest that the critical time for intervention—that time which offers the greatest promise of substantially reducing the number of "casualties" among the young—should come early in childhood, before damage is done, rather than depending upon remedial measures later, as is the present practice. (1971, p. 138)

Yet, all these decades later, reactive programs that provide interventions after challenges and negative outcomes have occurred continue to be the predominant practice (W. Beardslee, personal communication, December 18, 2014).

2.5.1.1 Risk and Protective Factors

In the early 1960s, understanding was sought for what caused some children to have positive outcomes despite the negative conditions of their birth. Garmezy and Streitman found key risk factors identified for schizophrenia in children (1974). This
seminal work is often cited as the beginning of the body of research to identify risk and protective factors. Reid, Steward, Mangham, and McGrath (1996) stated that the unique mix of risk and protective factors a child experiences can determine how well adjustment occurs. Cicchetti, Rogosch, Lynch, and Holt (1993) found that maltreated children had fewer adaptation skills than non-maltreated children. Cicchetti et al. found that maltreated children had lower competence than non-maltreated children.

Garmezy (1991) concluded that despite poverty, children who have more resilient behaviors also have protective factors from family, school, or the church. Predictors of competent functioning research found were ego-resiliency, ego-control, and self-esteem (Cicchetti et al., 1993). Humphreys (2001) concluded that nursing interventions could facilitate changes to individual and environmental characteristics, which in turn are successful in promoting resiliency. These findings indicate the importance of resiliency on outcomes of children exposed to risk factors.

Research has outlined the importance of the family as a potential risk or protective factor. There has been a relationship found between perceived social supports and coping outcomes that is influenced by level of family stress, and that there are differences in perceived social support and coping outcomes that are modified by gender (Tak & McCubbin, 2002). Evidence supports the idea that community resiliency is linked to individual resiliency (Kulig, 2000).

Proxies for measuring resiliency are common in the literature. Other research findings are difficult to compare to this study’s results, as they set out to study resiliency, but used proxies for measuring resiliency. For instance, the work of Allen et al. (2016) used measures of hope, coping strategies, and the Strengths and Difficulties
Questionnaire to indicate child resiliency in an evaluation of a coping and resilience intervention. They found that there was a positive change over time in hope and behavior for intervention participants. In another study, pro-social behavior was used as a proxy for resiliency, with results showing the experimental group increased in pro-social behavior, which was maintained over time (Sheppard & Clibbens, 2015). Others used positive approaches to learning, behavior problems, closeness to parents, and hyperactivity to proxy for resiliency (Lee & Ludington, 2016). The measurement of the impact of the Head Start program, indicated that those that participated in Head Start had more positive approaches to learning and lower hyperactivity scores than those that did not participate (Lee & Ludington, 2016). Overall, these proxies for resiliency may not be measuring the concept of resiliency as defined by Unger. This makes it difficult to compare relevance of study results on resiliency interventions.

There is a common research practice of using the inverse of behavior scores to measure resiliency, as used in the work presented by Ebersöhn and colleagues (2015), Goel and colleagues (2014), McConnell, Savage, and Breitkreuz (2014), and O’Grady and colleagues (2016). Resiliency, however, is not simply the lack of “bad” behavior, it is the ability that an individual has to adapt to and deal with a stressful situation in their lives. Simply because there may be a lack of internalizing or externalizing behaviors does not mean that resiliency is present. Though there was an inverse relationship found between the two concepts in this research, it would be folly to assume that they are directly related, and that behavior is a direct expression of the complex concept of resiliency.
2.5.1.2 Adaptation

Many investigators have examined how children and families adapt to challenges. One model, the T-Double ABCX Model of Family Adjustment and Adaptation, grew out of Hill’s Family Stress Model (McCubbin, 1979) and describes the process of family transitions or adjustments to crisis (McCubbin & McCubbin, 1991). This model was the earliest and most cited family adaptation model in the resiliency literature. This resiliency model can be used as a foundation for theory-based nurse practice (Robinson, 1997).

Another model focusing on family adaptation, the Resiliency Model of Family Stress, Adjustment, and Adaptation, has been studied, finding that younger mothers cope better to encourage communication regarding medical concerns, and are able to function with optimism and family integration. Researchers also found that the more social support a parent reported having perceived, the higher level of coping reported. These findings contribute to explanation of effect of perceived social support moderating coping outcomes (Tak & McCubbin, 2002). These findings also lend support for this research project, in that military families tend to be composed of younger parents. Therefore, it is expected that the TMAS intervention — which this research project evaluates — will have greater impact on the military family population.

The state of the literature on discovering what is resiliency is composed of theoretical articles (i.e. McCubbin & McCubbin, 1991; Polk, 1997; Robinson, 1997), reviews of literature (i.e. Garmezy, 1991; Jacelon, 1997; Richardson, 2002; Reid et al. 1996; Rutter, 1999), longitudinal quantitative studies (i.e. Garmezy & Streitman, 1974; Tak & McCubbin, 2002; Werner, Bierman, & French, 1971), descriptive quantitative
studies (i.e. Cicchetti et al., 1993), and qualitative life history interviews (i.e. Humfrys, 2001). Therefore, the state of the science to determine what is resilience is at the point of repetition of qualitative and qualitative inquiries, as well as theory testing to isolate and clearly define concepts.

2.5.2 Increasing Resiliency

In this section, programs targeted at increasing resiliency with military children and families are reviewed. Programs reviewed are the Essential Life Skills for Military Families curriculum, Operation Purple Camp, and Families OverComing Under Stress. To compare to Tell Me A Story, see section 2.1.

The Essential Life Skills for Military Families curriculum is based on the community capacity-building framework proposed by Huebner, Mancini, Bowen, and Orthner (2009). This framework focuses on engaging families within a community and fostering partnerships to respond to the needs of the community. Huebner et al. describe the curriculum as five 3-hour workshops that focus on various aspects of resilient strength building and developing relationships. It is unclear if this framework for an intervention is effective, as research that studies efficacy has not been published.

Operation Purple Camp is a one-week camp for military children (9 to 15 years) intended to increase resiliency. Chawla and Wadsworth (2012) conducted a pilot study (n=44), finding increases in social acceptance, athletic competence, and perceived self-worth. The researchers collected baseline and post-camp data via three subscales of the Self-Perception Profile for Children / Adolescents to measure perceived competence, finding that children had a statistically significant increase in global self-worth and adolescents had an increase in athletic competence after participating in the camp.
Operation Purple Camp has been tested via a pilot test, but there has been no current literature following up a full-scale study. Thus, a well-designed study of the effectiveness of these types of programs is lacking, but is needed.

Another program with the goal of increasing resiliency is a family resiliency-training program, Families OverComing Under Stress (FOCUS). FOCUS targets navy and marine families who have experienced deployment related challenges. In order to increase resilience, FOCUS teaches coping strategies. One of those coping strategies for overcoming stress is expressive communication within the family. With a composite case study example, Lester, Morgil, et al. (2011) described the FOCUS program. In the example, a family of five — with children ranging 4 to 13 years of age — begin and complete Resiliency Training to deal with the father’s pending deployment. The initial two sessions are held with just the parents and the FOCUS Trainer, processing concerns and fears, and constructing a timeline for what they expect deployment to be like for each of them. The authors describe how this process helps to clear miscommunication and enhances understanding of what the experience of deployment is like for their partner. Near the end of the second session, the family goals are set. In the third session, children work with the FOCUS Trainer without their parents present. Children use the “feeling thermometer,” an age appropriate method for determining emotions, and they create a time map for what they expect deployment to be like. In the fourth session, parents plan with the FOCUS Trainer, preparing for the family session. In the fifth session, the family comes together with the FOCUS Trainer, and the parents facilitate conversation with their children about the upcoming deployment, clarifying and answering questions as they come up. Lester, Morgil, et al. discussed how the FOCUS program helps prevent a
disruption in communication between military children and their deployed parent. They stated that communication problems might lead to children keeping problems to themselves, to avoid stressing their non-deployed parent. Lester, Morgil et al. stated that when children keep problems to themselves, it increases the military child’s stress levels. It is important to note that while the case study describes a family preparing for deployment, this is the ideal situation, which is rarely achieved due to military life realities (2011).

In a pre-post evaluation of the FOCUS program provided to 488 families on 11 U.S. Marine Corps and U.S. Navy installations across the globe from 2008 to 2010, Lester et al. (2012) found improvements of anxiety, depression, prosocial behaviors, positive coping skills, and family functioning in children and parents who completed the program (n= 331). Parents deploy on average 4.51 times in the lifetime of their child. During those deployments, children tended to be within the 3 to 7 age group (61.1%) rather than 8 to 10 (19%) or older than 11 years (19.9%). Before FOCUS, 33.7% of the non-active duty parents and 23.3% of active duty parents scored higher than 30 on the PTSD checklist, indicating elevated PTSD symptoms. Before FOCUS participation, military parents were more depressed than community norms (military family means range 7.89 to 10.82, community norms mean ranges 5 to 8, p < .001). After the program depression of parents decreased (T= 0.27 to 0.38, p < .001). Prior to FOCUS participation military families had lower family adjustment function than community norms (military family means range = 1.93 - 2.02, community norms mean = 1.84, p < .001). After participation, there was a statistically significant pre-post negative time effect (-5.41, 95% CI: -6.05, -4.75, p< .001). To analyze pre-post changes in the
children, parents completed the Strengths and Difficulties Questionnaire - Parent Report to measure child psychological adjustment, finding a significantly higher total difficulties score at program onset (boys mean = 13.54, girls mean = 11.11) compared to normative data (boys mean = 7.63, girls mean = 6.56 p < .001). The SDQ also showed that prosocial behavior increased statistically significantly pre-post for both girls and boys (boys pre mean = 7.45, post mean = 8.18; girls pre mean = 8.23, post mean = 8.92, p < .01). Kidoscope measure for child coping showed significant increases in positive coping strategies after participation. Lester et al. found that before the program, military children and their parents show higher levels of distress (i.e. anxiety, depression, problems in school) than the civilian gender-matched community norms. After the program parents and children demonstrated improvement in prosocial behavior, functioning, and coping strategies, as well as a decrease in total difficulties score and depression.

The state of the literature regarding increasing resiliency is comprised of expert opinion (i.e. Kulig, 2000), reviews of literature (i.e. Luthar & Cicchetti, 2000), curriculum descriptions (i.e. Heuber et al., 2009), pilot studies (i.e. Chawla & Wadsworth, 2012), pre-post intervention survey studies (i.e. Lester et al., 2012), and composite case studies (i.e. Lester, Mogil, et al., 2011). The program most thoroughly studied related to increasing resilience at this time is project FOCUS. However, the studies on FOCUS do not use controls, and therefore between group changes cannot be identified. Such studies are needed.

The resiliency program that appears to show the most promise is the TMAS program (discussed in detail in section 2.1). The TMAS intervention shows promise for
several reasons. It works directly with parents and children, demonstrating key components of family communication (discussed in more detail in section 2.5.4). TMAS can also be reproduced at scale, from 1 to 50 families. This research project has picked up where the gap in the literature leaves off, testing the TMAS intervention for its effectiveness to increase resiliency. The pre-post design, and the waitlist control aspect of this research design allowed for both within and between group changes to be detected.

2.5.3 Reading, Intelligence, Home Environment, and Resiliency

Prince-Embury (2011) discussed the relationship between resiliency and academic function. Increased resiliency is related to increased academic function (Prince-Embury, 2011; 2013). In a longitudinal study of children (n=498) from with alcoholic families (275), comparison non-alcoholic families (82), and intermediate risk families (54) from a community canvas, Martel et al. (2007) found that academic performance was related to resiliency levels of the child. Among many other instruments, the Wide Range Achievement Test Revised measured academic competence, and resiliency was measured via child personality through the California Q-Sort, Child Behavior Checklist, and the Teacher Report Form. Martel et al. found that executive function (positively linearly related to resiliency), contributed to children’s academic competence. This finding indicates that resiliency and academic performance are related concepts, which supports this proposed project for academic performance as a variable related to children’s resiliency behaviors. The importance of the relationship between resiliency and academic function provides support in this research project for the measurement of the
variables of academic function via Child Behavior Checklist, which correlates to the resiliency measure California Child Q-Sort, the source material for the ER11.

Other research has examined other aspects of academic performance, such as IQ and intellectual disability, and resiliency behaviors. In a longitudinal study of cognitive and ego development including 95 participants, Block and Kremen (1996) found that persons with higher ego-resiliency also had higher raw IQ scores. This finding suggests that those with higher functioning cognition are more likely to demonstrate resilient behaviors. However, a descriptive study comparing 115 children with intellectual disability and 106 typically developing children found that those with intellectual disability had similar protective factors compared to typically developing children (Gilmore, Campbell, Shochet, & Roberts, 2013). Gilmore et al. measured resiliency using the Resiliency Scales for Children and Adolescents (strengths and vulnerabilities; Prince-Embury, 2007) and the Healthy Kids Resilience Assessment (external and internal resources, and school connectedness; Bernard & Diaz, 1999). Significant findings indicated that children with intellectual disability had lower levels of tolerance and less community support, but more school support than children with typical developments, and that girls rated higher level of support (from both scales) and sensitivity than boys (Gilmore et al., 2013). The findings from this study suggest that intelligence alone is not the only factor regarding cognitive ability of children that fosters resilience behaviors.

Parents can facilitate resiliency behaviors. Benzies and Mychasiuk (2009) conducted an integrative review of 43 articles, finding 24 protective factors that promote resiliency behaviors within the levels of individuals, families, and communities. Benzies and Mychasiuk found that parents who are more educated are better able to increase the
cognitive stimulation of their children, which in turn influences the child’s resiliency behaviors. Benzies and Mychasiuk also found that joint learning activities between parents and children (such as reading) foster resiliency behaviors in children. This research finding provides support for the TMAS intervention. This finding lends support to the expectation that TMAS intervention participation will lead to resiliency behaviors increasing.

The state of the science regarding the connection between reading, academics, and resiliency is comprised of longitudinal quantitative studies (i.e. Block & Kremen, 1997; Martel et al., 2007), expert opinion (i.e. Prince-Embrey, 2011; 2013), descriptive quantitative studies (i.e. Gilmore et al., 2013), and integrative literature reviews (i.e. Benzies & Mychasiuk, 2009). Many of the quantitative studies used a variety of instruments to measure children’s resilient behaviors, the most common instrument of the reviewed studied was the California Q-Sort. Therefore, more quantitative testing using instruments focusing on resilience behaviors (i.e. California Q-Sort, Resiliency Scales for Children and Adolescents, and Healthy Kids Resilience Assessment) rather than instruments which measure problems and score resilience as fewer problems (i.e. Child Behavior Checklist, Teacher Report Form; Strengths and Difficulties Questionnaire) should be conducted to further understanding between resilience and literacy behaviors.

2.5.3 Family Communication Patterns

Family communication patterns are the way in which a family interacts with each other. There are two main types of communication orientations: conversation and conformity. Conversation-orientation is open interaction and sharing of ideas and values amongst family members (Vieira Jr, 2015). A key part to conversation-orientation is the
encouragement of discussions on a wide range of topics (Koerner & Schrodt, 2014). Conformity-orientation is the parents having power and decision-making authority within the family (Vieira Jr, 2015). An aspect of conformity-orientation is the way that the parents enforce the sameness within the family of values, beliefs, and attitudes (Koerner & Schrodt, 2014). These two communication orientations cross to create four communication patterns within families: pluralistic, protective, consensual, and laissez-faire (see Table 2). Pluralistic families are high in conversation and low in conformity. Protective families are low in conversation and high in conformity. Consensual families are high in both conversation and conformity. Laissez-faire families are low in both conversation and conformity (Vieira Jr, 2015).

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<th>High Conversation</th>
<th>Low Conversation</th>
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<tbody>
<tr>
<td>High Conformity</td>
<td>Consensual</td>
<td>Protective</td>
</tr>
<tr>
<td>Low Conformity</td>
<td>Pluralistic</td>
<td>Laissez-faire</td>
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Family communication patterns play a role in how the family functions and seeks outside support. A descriptive study of 352 undergraduate students on the topic of family communication patterns showed the influence on social support seeking. Family communication patterns changed how children see the world and how they grew to behave as adults. Those with high conformity orientations (consensual and protective) had the possibility to reduce skill development and discouraged social skills (High & Scharp, 2015).

Family communication patterns create a shared social reality within the family group (Koerner & Schrodt, 2014). This finding is further supported by the research findings of Meeusen (2014), whose study on Belgium parent’s communication patterns
showed that parents who do not involve themselves with their children (i.e. low conversation, as found in protective and lassiez-faire) are lessor role models for their children, and their children are less likely to develop the same values as their parents. High conversation engagement not only demonstrates the skill of socializing, but it also transmits values from parents to children (Meeusen, 2014).

Resiliency behavior of military children is affected by parent’s skills and methods of communication within a family. A descriptive survey study was conducted of National Guard members at 23 Yellow Ribbon Reintegration Events for children aged 3-17 years (n = 102 military parents recently returned from deployment and 110 civilian spouses; Wilson, Chernichky, Wilkum, & Owlett, 2014). The researchers found that conversation-oriented families reported that children had more prosocial behavior after a parent returned. The short form of the Revised Family Communication Patterns was used to measure family communication environment, finding that conversation orientation was normally distributed for deployed parents (-0.52), but negatively skewed to at-home parents (-1.49). The Strengths and Difficulties Questionnaire (SDQ) was used to measure the oldest child’s behavioral problems and prosocial behavior during deployment and after the military parent’s return. For the SDQ, all t-tests were statistically significant comparing total behavioral problems and prosocial behavior. The SDQ data collected from this sample was compared to the national SDQ normative data, and Wilson et al. found that military children had more behavioral problems and fewer prosocial behaviors than age-matched peers. They also found that deployed parents who reported conversation orientation had a statistically significant inverse relationship with the total difficulties score (r = -.41, p < .01) and a statistically significant positive relationship with
the prosocial score \( r = .35, p < .01 \) of their oldest child. This indicates that conversation-orientation families had fewer numbers of problems and more resiliency behaviors compared to other conversation environment types. They found that of this sample, the most common National Guard military family communication environment is the consensual type. Covariates analyzed showed that the higher level of education a parent reached, the lower total difficulty score and higher prosocial behavior score of the child. This means that the more education a parent has, the fewer problems and more resilient behaviors they reported regarding their children. Other covariates analyzed demonstrated that girls had more prosocial behavior than boys (Wilson et al., 2014). This indicates that girls of military members are more likely to exhibit resilient behavior than boys.

### 2.6 Positive Psychology

The goal of positive psychology is for humans to be at their optimal function (Magyar-Moe, Owens, & Conoley, 2015). Positive psychology looks at mental health as more than the absence of problem(s) (Manicavasagar et al. 2014). Concepts attributed to positive psychology include well-being, subjective happiness, contentment, satisfaction with life, hope, optimism, social support, and self-efficacy (Seligman & Csikszentmihalyi, 2000; Sohn, Kim, Lee, & Kim, 2015). Optimism, a key concept for positive psychology and resiliency research, involves emotions, thoughts, and motivational factors (Seligman & Csikszentmihalyi, 2000). Life satisfaction is also a key concept, in that it predicts good self-esteem, optimism, self-efficacy, and reduction of problems (Scagliola & Rizzo, 2010).
The seminal work on positive psychology by Seligman and Csikszentmihalyi (2000) argued for the importance it will play in the future for health promotion.

We predict that positive psychology in this new century will allow psychologists to understand and build those factors that allow individuals, communities, and societies to flourish. Such a science will not need to start afresh. It requires for the most part just a redirecting of scientific energy. p 13

Seligman and Csikszentmihalyi urged for positive psychology to play a role in interventions which will assist in the flourishing of individuals to societies as a whole. Positive psychology has the goal of focusing on what works well rather than on risk factors (Scagliola & Rizzo, 2010).

Positive psychology in action has goals to assist individuals to build upon existing strengths. The focus is on what is going well, and what improves (Clime & Mastoras, 2015). This approach is considered a “strengths-based” perspective. Strengths-based interventions are best to promote resiliency for children (Clime & Mastoras, 2015).

2.7 Bibliotherapy

Resilience interventions, positive psychology, and family communication are the underlying principles for the TMAS intervention. The TMAS intervention is based on a type of intervention classified as bibliotherapy. Bibliotherapy is defined as the reading of stories which are used to help gain insight (Allen Heath, Sheen, Leavy, Young, & Money, 2005; Olsen, 1975). Bibliotherapy interventions, such as TMAS, can be utilized in a variety of settings with various allied care professionals, including nurses. Bibliotherapy only requires participant time and selected material to read, and therefore is a low-cost intervention (Chamberlain, Heaps, & Robert, 2008). The TMAS intervention
selected books can convey information to children on a subject that is new to them. Books have the ability to teach without lecturing, and maintain a positive outlook (Greenberg, 2006). Bibliotherapy is often conducted in four phases; these phases are: pre-reading, guided reading, post-reading discussion, and an activity (Iaquinta & Hipsky, 2006). This is the method of phases that the TMAS intervention follows.

While reading a story, adults are able to provide emotional support for children. Stories are easier to understand for children than personal experiences. This is due to the distance the story provides from the immediate situation (Allen Heath et al., 2005; Beardslee, Bartlett, & Ayoub, 2014; Jasmine-DeVias, 1995). A story gives children and adults something to talk about, in a way that gives their own life experiences some emotional distance (Tielsch Hoddard, 2011). Children can read about a topic that may be frightening while in a place that provides emotional comfort. If an emotion the child is experiencing becomes too intense, the book can be put down and read again another time (Greenberg, 2006). For example, the TMAS intervention books target specific topics, such as deployment, parents coming home different, and military pride (see appendix H; MCEC, 2010). The TMAS book prompts conversation between the child and adult in a safe and secure way for these hard to handle topics.

2.7.1 Therapeutic Effect

The therapeutic effect of bibliotherapy occurs through three phases; identification, catharsis, and insight. Identification allows the reader to see the story as a part of the world they live in (Olsen, 1975). The character or situation is therefore relatable to the reader (Rozalski et al., 2010). It is important for the reader to see similarities between their own life and the life of the character in the story (Early, 1993). The TMAS
intervention books are chosen carefully for age and situation appropriateness. This helps children to identify with the main character (MCEC, 2010).

Catharsis is the reader observing to the solutions found by the characters in the story (Olsen, 1975). This is also the phase when the reader experiences possible repressed emotions (Rozalski et al., 2010). Emotional release is encouraged, as it assists with the reader’s processing of the story (Early, 1993). The TMAS intervention books are selected for characters’ role modeling positive coping skills for military children (MCEC, 2010).

Insight occurs when the reader is able to understand both emotionally and intellectually how the story’s context and character’s solution to challenges can apply to their own life (Greenberg, 2006; Olsen, 1975, Rozalski et al., 2010). It is important that the reader recognizes that the solution presented in the story can apply to their own life’s challenges (Early, 1993). This recognition is vital to the positive outcomes that bibliotherapy seeks to accomplish. The TMAS intervention facilitates insight through discussion of the story. This is key for TMAS outcomes, as insight is a part of the conversation facilitated between parents and children (MCEC, 2010).

During the TMAS intervention, families learn important aspects of reading while spending time together. The act of reading is dynamic and provides an outlet for interaction between the reader and the fictional character (Iaquinta & Hipsky, 2006; Olsen, 1975). For optimal results with bibliotherapy, and the TMAS intervention, the child should relate to the story character. The character’s role modeling should demonstrate successful coping methods for children to emulate (Greenberg, 2006; Tielsch Goddard, 2011). Stories must be chosen carefully, with attention to target
audience age, topics to be addressed, and emotional needs to be met (Allen Heath et al., 2005). Review of potential books for bibliotherapy interventions should include consideration of grade level and interests of children, how well the characters are presented, the context of the story, the usefulness of illustrations for understanding the story, and the underlying message the author is conveying (Rozalski, Stewart, & Miller, 2010). The 16 books selected for the TMAS intervention are chosen based on positive psychology characteristics. As each TMAS intervention is planned, a content expert selects the books for the TMAS intervention from the list of 16 books, based on the unique needs of the community the intervention is intended to reach (J. Glennon, personal communication, October 29, 2015).

2.7.2 Effectiveness of Bibliotherapy as an Intervention

This section reviews the literature that has evaluated bibliotherapy interventions that focus on resilience of children. After comprehensive searching of databases and hand searching reference lists, few empirical studies were found evaluating bibliotherapy with children. These studies are presented and described.

In a quasi-experimental designed study of a literature-based character-focused bibliotherapy intervention with 965 first to sixth graders from two school districts in the U.S., Leming (2000) found that students increase in cognitive outcomes and ethical understanding. Leming reported that the bibliotherapy intervention program focused on a story character throughout the year’s classroom curricula. The bibliotherapy intervention used is the Heartwood curriculum, where 14 stories focus on seven ethical character attributes. The seven character attributes are courage, loyalty, justice, respect, hope, honesty, and love. The teachers who implemented the character curriculum received a
half-day training prior to the start of the school year, materials to implement the intervention, and incentive for participation. Leming developed instruments to measure ethical understanding, ethical sensitivity, ethical conduct, ethnocentrism, and classroom climate. Data were collected prior to the school year and at the end of the school year. Leming found that the children were able to role model the positive aspects which the story character demonstrated.

The following describes a study where a bibliotherapy intervention with parents was utilized, and the outcomes of interest were children’s behaviors. A randomized repeated measures design study examined the efficacy of a therapist-assisted, self-administered bibliotherapy parenting intervention (Hahlweg, Heinchs, Kuschel, & Feldmann, 2008). The researchers demonstrated the effectiveness of a bibliotherapy intervention in the home. The participants were 69 German parents of preschoolers aged 3 to 6 years old, assigned to either the intervention group or the waitlist control group. The intervention, Triple P, is described as a self-directed parenting training with telephone follow-up. Parents were provided copies of *Every Parent’s Self-Help Workbook* (Sanders et al., 2003, as cited by Hahlweg et al., 2008), and the video *Every Parent’s Survival Guide* (Sanders, 1999b, as cited by Hahlweg et al., 2008). Parents were assigned to read a book chapter a week with associated workbook tasks for 10 weeks. Telephone follow-up was attempted during 7 of the 10 weeks. It is important to note that this intervention did not focus on child-parent reading activity together.

Hahlweg et al. collected data from the following eight instruments at pre intervention, immediately post intervention (10 weeks), and at 6-month follow-up. The Child-Behavior Checklist - Parent Report, used to measure the child’s emotional and
behavioral problems, showed that mothers in the intervention group had greater pre-post changes than the wait list control group for the internalizing and externalizing sub scales, as well as the total CBCL means. Statistically significant effects were found for externalizing and total scores for mothers within the intervention group (CBCL-externalizing F=15.5, p< .001; CBCL-total F=17.1, p<.001) and between the waitlist control and intervention group mothers (CBCL-externalizing F=9.8, p=0.002; CBCL-total F=5.2, p=.013). For mothers, the CBCL-internalizing subscale had nonsignificant results, within the intervention group (F=3.7, p=.061) and between the intervention and waitlist control group (F=2.0, p=.08). There were no significant results found for the father’s within and between group effects for either time or time x group. The Strengths and Difficulties Questionnaire-Parent Report (SDQ) was used to measure child behavior, and was analyzed as a total score. For the mothers, there was a statistically significant reduction in the SDQ-total score from pre-post in the intervention group (F=12.3, p<.001), and between the intervention and waitlist control group (F=6.6, p=.007). The fathers did not have any statistically significant results. This difference between the mothers and fathers may be due to the reported number of chapters completed by the mothers (m = 9/10) compared to the fathers (m = 1/10).

Hahlweg et al. found that parents reported their children having fewer externalizing behavior problems after the intervention that persisted at the six month follow up. The study also demonstrated that the number of chapters read and completed by the parents (measured by asking parents if they read that week or not, during the telephone consultation) is statistically significantly correlated to improved outcomes. The researchers noted that outside assistance (i.e. telephone consultation) was needed for
parent motivation and skills implementation. These findings support this proposed project, indicating that bibliotherapy can be implemented and instruments such as the Child Behavior Checklist can measure the outcomes. The data collection points in the Hahlweg et al. study provide support that baseline and immediate (10 weeks) post intervention data collection via these instruments are sensitive enough to detect a change after a bibliotherapy intervention.

Beardslee and colleagues (2009; 2010; 2014) implemented a program they call “Tell Me A Story” as a resiliency intervention for families with parents with depression (Beardslee, Bartlett, & Ayoub, 2014). It is noted that while this program shares the same name, and similar concepts, it is not the same intervention as the trademarked Tell Me A Story intervention by the Military Child Education Coalition. Beardslee and colleagues utilized “TMAS” as a strength-based solution for mental health challenges faced by parents and children (Beardslee, Avery, Ayoub, & Watts, 2009). Beardsley and colleagues theorize that their intervention is effective due to the act of reading together, which assists parents and children to talk about both positive and difficult subjects (Beardslee, Avery, Ayoub, Watts, & Lester, 2010). Beardslee et al. describe a central emphasis of the training provided to staff as facilitating reflective practice with children and parents. Staff attended a four module training, each module lasted three sessions, for a total of 12 training sessions. The modules included information on depression, strengths-based approach to engage families, supportive social emotional development via the intervention to facilitate conversations on difficult topics with children, and capacity building for staff. In a four-year (2004 to 2008) program evaluation study, Beardslee et al. (2010) evaluated the overall program with use for early childhood mental
health consultants, teachers, home visitors, family service providers, and early intervention staff, described in the following paragraphs.

Beardslee et al. collected qualitative and quantitative data from consultants at the intervention site, a Head Start center in Boston, MA. Quantitative data collected from staff included monthly self-reports by consultants to measure daily activities and what they think the change was in the parents, teachers, and leadership staff at the intervention site; author designed 4-point Likert scales to measure staff training participant evaluation; direct care staff surveys that included demographic information, experience in their field, and their job satisfaction; and the implementation site staff sick time records. The qualitative data collected from staff included three focus groups on the topics of the work over the year, how the skills from training were used, how consultants were used, examples of the level of mental health of the children they worked with, and what changes they would like to see. Beardslee et al. found that teachers believed they could implement the program and that the teachers believed the program helped them help parents and children.

In a later publication on the same program, Beardslee et al. (2014) described their intervention module and the changes they made to it in detail. The researchers stated they developed the training for teachers into a workshop for parents. Book guides were developed for stories (such as When Sophie Gets Angry – Really, Really Angry…; Jamaica Tag-Along; When My Mom Is Sad; Only You; Knuffel Bunny Too; and Qunintio’s Neighborhood) that were selected for the difficult issues dealt with by the population of children of depressed parents. The researchers stated that their intervention is effective at fostering communication with children on difficult topics. Trained
intervention facilitators have several sessions with groups of 15 to 20 children aged 2 to 6 years. The researchers stated that during the first two circle-time sessions book choice and conversations facilitated are important for success. As the intervention facilitators get to know each group better, book selection can become more tailored to the needs of the children. The researchers stated that intervention facilitators are encouraged to change the content of the stories and associated activities to tailor to each situation. The researchers stated that repetitive reading, described as reading the same story once or twice a week, is essential to enhance the child’s understanding of the story. Activities associated with each session are breathing exercises, role-playing, crafts, music, and movement play (Beardslee et al., 2014).

Based on the reviewed studies on bibliotherapy targeting changing behaviors in children, it is clear that there is a gap in the literature regarding empiric outcomes of bibliotherapy. Lemming’s study used author developed instruments and did not report psychometrics. Hahlweg et al. study focused on a workbook, rather than a story with children. Beardslee et al. focused on implementation effects on staff, rather than outcomes of children. The dearth of empiric studies on resiliency intervention effectiveness in increasing resiliency in children, as measured by child resilience scores, demonstrates the need for this research project.

2.7.3 Bibliotherapy Summary

The bibliotherapy intervention created by Beardslee and colleagues has been implemented and it is similar to MCEC’s TMAS, and the Head Start staff that implemented it believed it was successful to increase resilient behavior in children of depressed parents (Beardslee, Avery, Ayoub, & Watts, 2009; Beardslee, Avery, Ayoub,
Watts, & Lester, 2010; Beardslee, Bartlett, & Ayoub, 2014). As discussed in this section, there is evidence that a school-year-long bibliotherapy intervention focused on ethical character attributes showed change in school-aged children’s ethical behavior from baseline (Leming, 2000). There is evidence showing that a bibliotherapy intervention with parents of preschoolers completing workbooks at home with telephone follow-ups lead to both within and between group differences for reducing children’s externalizing behavior problems (Hahlweg et al., 2008).

2.8 Variables Influencing Research

2.8.1 Data Collection via Internet

The Internet is defined by the National Institute of Standards and Technology (NIST; 2013) as:

the single, interconnected, worldwide system of commercial, governmental, educational, and other computer networks that share (a) the protocol suite specified by the Internet Architecture Board (IAB), and (b) the name and address spaces managed by the Internet Corporation for Assigned Names and Numbers (ICANN). p.103

This means that individuals using a computer and an Internet connection, information on web sites can be accessed. Via this two-way access between individuals and information on the Internet, research can be conducted. Researchers are better able to access populations via the Internet. As the world becomes more digitized, research too goes into the 21st century, with online data collection, recruiting participants from the comfort of their home on the digital landscape. In the U.S., public libraries often have computers available for public use. This means that even if a person does not own a
computer or an Internet connected device, they can still access use of one. Due to computer ubiquity in the U.S. most of the population has skills and knowledge related to digital technology.

Williams (2012) stated that Internet data collection methods, such as recruitment, analysis, and data entry, produce lower research costs than in-person and paper-based methods. Lagan (2010) argues that Internet research is the lowest cost medium of data collection for the broadest availability of diverse participants. Walker (2013) is in agreement with Williams and Lagan, stating that utilizing the Internet for research methods can be the best way (i.e. low cost and high response rate) to recruit traditionally hard to reach populations. Regarding internal validity of studies conducted via the Internet, Longo (2010) states that prior research has compared traditional paper to Internet data collection methods, and found that the psychometrics of the instruments were not altered, and with the added bonus of a wider reach of participants.

Longo (2010) discussed changes to methodology that need to be considered for Internet research. For example, sometimes Internet research designs need to make changes in the areas of recruitment, sampling, and participant rights. Changes suggested are having an open enrollment link, or emailing links to the data collection site with gift certificates or electronic money, using the IP address of participants to reduce the number of multiple responses, and ensuring that participants are aware they are participating in research by clicking an “I AGREE” button prior to beginning data collection in lieu of signature on an informed consent form. Longo states that to protect participant rights, debriefing and counseling resources should be available to the participants in the same manner as the study materials. For this research study, participants are provided the
informed consent document in the recruitment email, as well as being presented with it prior to clicking “I AGREE” when on the data collection website. Participants were provided with resources for military children on the informed consent document.

Coons (2014) state that Internet research presents two main risks: participant-researcher disconnection and breach of confidentiality. The risk of the participant-researcher disconnection means that a study participant may become upset or have an adverse reaction to the study, but that the researcher may not be aware. Another concern related to participant-researcher disconnection is raised by Teitcher et al. (2015) regarding the prevention of so-called “fraudsters;” meaning people or computer programs that create duplicate data entries to receive monetary incentives. Since everyday life for much of the population includes sharing of personal information on websites (e.g. Facebook, Twitter, YouTube, etc.) or through electronic communication (e.g. Email, SMS, Chats, etc.), this mean that Internet research may qualify as minimum risk (Coons, 2014). Risk is defined by activities of everyday life. Therefore, breach of confidentiality is a minimal risk (Coons, 2014). Regarding breach of confidentiality for data, researchers need to provide protection through electronic protections that are the equivalent of brick and mortar protections (Williams, 2012). For this research project, participants were connected to the researcher via the MCEC’s existing network. Participant’s responses were kept secure through the Qualtrics website security features, and downloaded to a password protected computer, using password protected files security features.

2.9 Conceptual Framework

This section will review the conceptual framework that guides this research project. The underpinning concepts that frame the context which the TMAS intervention
is immersed in are literacy, family communication patterns, positive psychology, and the military culture (See Figure 3). These underpinning concepts contribute to the ABCs of resilience, as applied to the TMAS intervention. The TMAS intervention is composed of three focus areas: parent-child reading; parent-child discussion; and parent-child creative activity. These three activities are the backbone of the TMAS intervention. Participation in the TMAS intervention leads directly and indirectly to child resiliency outcomes, modified by home literacy environment, with further effect on child behavior outcomes. The following subsections will describe each aspect of this conceptual framework in detail, as supported by the literature.

![Conceptual framework](image)

**Figure 3: Conceptual framework**

### 2.9.1 Literacy

Literacy is a key component of the TMAS intervention and it’s supporting conceptual framework. The central aspect of the TMAS intervention is that of parents and children reading stories. Parent reading habits contribute to a child’s literacy by the creation of an environment that reading is role modeled. Research has found that when parents increase the amount of time they read with their children, positive outcomes increase (Sloat et al., 2015). How much parents are involved in their children’s reading
and their own reading habits is significant and positively related to children’s reading motivation (Loera, Rueda, & Nakamoto, 2011). Parents who role model reading and read with their children are more likely to have children who develop reading habits (Hume, Lonigan, & McQueen, 2015). Learning language is a social skill, and reading dyads of parent-child contribute to children improving their vocabulary (Palermo et al., 2013). The attention which parents provide their children with at home reading improves school performance in vocabulary and letter knowledge (Yeung & King, 2015). For more information on the importance of literacy and it’s use in interventions (such as bibliotherapy) please see section 2.7.

2.9.2 Family Communication Patterns

Family communication patterns are an underpinning concept for the TMAS intervention. What style communication is used within the family can change how outcomes occur (High & Scharp, 2015). The family communication pattern of interest is the consensual type, which has been shown to have favorable outcomes in military families (Wilson et al., 2014). For more information on family communication patterns, please see section 2.5.4.

2.9.3 Positive Psychology

Positive psychology has been used to create the TMAS intervention. The 16 books used in the TMAS intervention were chosen, among other criteria, due to their story themes correlating with positive psychology character traits (See Appendix H; MCEC, 2010). Among the 23 character traits correlated with the 16 books, the traits present in 8 or more books as a primary or secondary theme were Social/Emotional Intelligence (12/16), Perseverance (11/16), Perspective (11/16), Open Mindedness
Hope/Optimism (9/16), Curiosity (8/16), and Gratitude (8/16; MCEC, 2010). The frequency that these traits appear as themes in these books indicates the importance of these character traits to the TMAS intervention.

Research has found that strengths based interventions developed under the umbrella of positive psychology has positive outcomes for relationships and well-being (Quinlan, Swain, Cameron, & Vella-Brodrick, 2014). In young children, positive peer and adult attention correlated with better social and classroom outcomes (Shin et al., 2011). Interventions with foundations in positive psychology have found increases in well-being, such as social support and self-efficacy, and reduction of negative emotional symptoms, such as stress and depressive feelings (Manicavasagar et al., 2014; Sohn, Kim, Lee, & Kim, 2015). For more details on positive psychology and how it relates to resiliency and military culture, please see section 2.6.

2.9.4 Military Culture

In the post-9/11 era, military culture has shifted. Reserve and Guard members are used in higher numbers, and deployments are longer and more frequent (Aronson, Caldwell, Perkins, & Pasch, 2011). Despite that increased stressor, military culture also is rich with informal and formal social support networks (Umhoefer, 2013). Family Readiness Groups, unit based support groups, and social media are all examples of social support available to military members and their families (Umhoefer, 2013). Please refer to section 2.4 for further details on the affect military culture has on children.

2.9.5 ABCs of Resilience applied to TMAS

The ABCs of Resilience, created by Chandler, Roberts, and Chiodo (2015), stems from the work of Southwick and Charney (2012). This model was adapted for use with
the TMAS intervention. The acronym ABCs stands for Active coping, Builds on strengths, Cognitive awareness, and social support. These four concepts of the model, describe how the underpinning concepts frame the TMAS intervention.

Active coping occurs as parents use stories as a platform for talking with their children about tough topics. Parents learn how to talk with their children at the event and are encouraged to continue the practice on their own at home. Literacy is the underpinning concept that supports the use of stories as discussion platforms.

Builds on strengths occurs when children improve their reading and communication skills with their parents. This improvement in their reading skills is supported by the concept of literacy, and the improvement of communication skills are supported by the concepts of positive psychology and family communication patterns. A key aspect of building on existing strengths is aligned with positive psychology strength focus. Communication skill improvement occurs in the TMAS intervention during parent-child discussion. Parent-child discussion is focused on the content of the story, what lessons are to be learned from the story, and how the story applies to their life. For further information regarding the TMAS intervention, please see section 2.1.

Cognitive awareness occurs when children increase their literacy and critical thinking skills. As discussed above, individuals that improve upon their existing strengths is a positive psychology tenant. Critical thinking skills are fostered in the TMAS intervention during discussion and creative activities. Parent-child creative activities help support learning through fun, fostering creation of memories with the discussion and lessons learned.
Social support occurs as families meet and play together at the TMAS intervention, making social connections. This is fostered by the military culture, providing a platform of similarity for the children and families to connect. The social support occurs throughout the TMAS intervention as families sit at the reading, are grouped in discussion groups, and during the creative activity. This fosters a sense of belonging that surrounds the entire TMAS intervention.

The TMAS intervention will be measured via two instruments that check the use of TMAS at home (CUTH)s. The first CUTH will occur three weeks after the TMAS intervention, covering how often the parents are reading at home and having discussions with their children. The second CUTH is six weeks after the TMAS intervention with the posttest, covering parent’s perceived impact of the TMAS intervention on the child and their relationship with their child. CUTH will be analyzed as a regression equation for its effect on all three variables of interest.

2.9.6 Home Literacy Environment

Home literacy environment is an outcome theorized to change with the TMAS intervention. When a parent attends the TMAS intervention with their child, it is expected that the literacy component of the intervention will change how literacy is regarded and role modeled in the home. It is theorized that when the home literacy environment changes, it will influence the outcome of resiliency and behavior of the children who participate in the TMAS intervention. The home literacy environment is described in more detail in section 2.5.3.

Home literacy environment is measured in this research project by the Home Literacy Environment – Parent Report questionnaire at pre-test, and then the Reduced
Home Literacy Environment – Parent Report questionnaire at second pretest (waitlist control) and post-test (both groups) assessment time points. The relationship of the home literacy environment with other variables is analyzed via hypothesis H2a, H3a, and H4a.

2.9.7 Resiliency

Resiliency is an outcome theorized to change with the TMAS intervention. This is the main outcome of interest for this research project. It is expected that the TMAS intervention, through fostering communication and through the bibliotherapeutic effects of stories, there will be a change in resiliency of the children who participate. Resiliency is theorized to influence behavior. For more on resiliency, please see section 2.5.

Resiliency is measured via three instruments, the Child Youth Resiliency Measure-Short Form, the Devereaux Student Strengths Assessment Mini, and the Ego-Resiliency 11-item Q-Sort. These three instruments were selected due to their representation in the resiliency research literature. These three instruments will be administered at pre-test, pre-test2, and post-test. Resiliency will be analyzed via H1a, H3a, and H7a.

2.9.8 Behavior

Behavior change is a theorized outcome of the TMAS intervention, both directly and as affected by home literacy environment and resiliency. It is expected that the internalizing and externalizing behaviors of children will change after they participate in TMAS. Research findings available in the literature demonstrate change in behavior after intervention, and this research project seeks to determine if the path to behavior change is through resiliency change. Much of the literature available studying resiliency
uses behavior as an indicator. In order to have this study be comparable to prior studies, behavior measures are used.

Behavior is measured via the Child Behavior Checklist. The checklist will be completed at pretest, pretest2, and posttest. Behavior will be analyzed via H4a, H5a, and H6a.

2.10 Literature Review Summary

This chapter addressed the unique needs of military children, defining resiliency as well as bibliotherapy. Military children are a unique population, facing different challenges than civilian children. Parental deployment has the potential to lead to emotional and academic delays. Military children have the confusing and inconsistent distinction of presenting as both resilient and vulnerable.

Since Garmezy and Steinman’s (1974) seminal research on risk and protective factors, the quest for the defining characteristic of resiliency has been long and wide reaching. Adaptation to changing environments, processes vs. traits, and interventions for and about resiliency have been examined and refined. The current state of resiliency research is identification of effective interventions.

Bibliotherapy is one such intervention promoting resiliency behaviors but has been poorly examined and tested in other populations and settings. Bibliotherapy interventions can foster positive behaviors and increased cognition with children. TMAS, a bibliotherapy intervention, has been provided by MCEC for over 10 years. It has received anecdotal support in the form of feedback from participants who state how effective it is. However, to date, there is no empirical evidence to support that the TMAS intervention promotes resiliency behaviors in military children.
The current literature demonstrates that interventions (e.g., TMAS, FOCUS, Head Start Tell Me A Story, Heartwood Curriculum, Triple P) are successful at reducing behavior problems in children. The hypothesized cause of this behavior change is increased child resilience. However, no literature available to date has evaluated the effectiveness of the intervention on both behavior and resilience to examine this question. Thus, this study aims to examine the impact of the TMAS intervention on both behavior change and resilience to better understand both what the intervention impacts as well as the potential of increased child resilience to positively impact behavior change.
CHAPTER 3

METHODS

3.1 Introduction

This chapter will discuss the methods of this research including study design, sample, setting, data sources, data collection procedures, data analysis plan, and protection of human subjects.

3.2 Research Design

This study used a pre-post quasi-experimental design using waitlist controls (see Table 3) to evaluate the effectiveness of the Tell Me A Story® (TMAS) intervention to increase resiliency behaviors in military children via an internet survey. Seven TMAS intervention locations with active Parent to Parent teams of the Military Child Education Coalition were utilized in this research. The pre-post-test design enabled detection of change related to the TMAS intervention. A waitlist control design was selected to provide both between-group change (intervention effectiveness) and between group comparisons (both intervention effectiveness and reduce threats to study validity – e.g., maturation and history effects).

This intervention study measured the effectiveness of the resiliency promotion program TMAS utilizing four data collection points (see Table 4). Pre-test collection occurred after recruitment, but before the intervention group received the TMAS intervention, or the same day as the TMAS intervention. The first Checking the Use of TMAS at Home measurement (CUTH) occurred for the intervention group only at 3 weeks after TMAS intervention. Post-test occurred 6 weeks after the intervention group received the TMAS intervention. The waitlist control group, recruited at four bases,
received the pretest, and then Pre2-test 6 weeks later. The waitlist control group was then given the option to attend a TMAS and stay in the study for 6 more weeks. The waitlist control CUTH occurred 3 weeks after they received the TMAS intervention. Post-test data collection occurred 6 weeks after the waitlist control received the TMAS intervention event series. A comparison only group was recruited via a mass email sent out by the MCEC, and those participants took the pretest, and a pre2-test 6 weeks later.

Table 3: Waitlist control design

<table>
<thead>
<tr>
<th>Group</th>
<th>Week 0</th>
<th>Week 3</th>
<th>Week 6</th>
<th>Week 9</th>
<th>Week 12</th>
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<tbody>
<tr>
<td>I</td>
<td>O</td>
<td>X</td>
<td>O</td>
<td></td>
<td></td>
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<tr>
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<td>O</td>
<td>O</td>
<td>X</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>C</td>
<td>O</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: O = observation. X = TMAS exposure*

Table 4: Assessment schedule

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Pre</td>
<td>CUTH</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td>Waitlist Control</td>
<td>Pre</td>
<td>Pre2</td>
<td>CUTH</td>
<td>Post</td>
</tr>
<tr>
<td>Comparison</td>
<td>Pre</td>
<td>Pre2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: Time between Pre & Post and Pre & Pre2 are both 6 week intervals.*

Table 5: Data collection instrument timeline

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre</th>
<th>Pre2</th>
<th>CUTH</th>
<th>Post</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
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<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
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<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>DESSA -8</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
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*Note: Ego-Resiliency Scale (ER11), Devereux Student Strengths Assessment-Mini (DESSA), Child Youth Resiliency Measure - Person Most Knowledgeable (CYRM), Child Behavior Check List - Parent Report (CBCL), Home Literacy Environment (HLE), Child Health and Illness Profile – Child Edition (CHIP-CE), Checking the Use of TMAS at Home (CUTH)*
Data was collected online via Qualtrics, which is an online survey software. Because it is possible for IP addresses to be traced, data therefore cannot be considered anonymous, but will be held as strictly confidential. The Qualtrics servers are secured to prevent malicious intrusion and exposure of data. Secure methods of downloading the data from Qualtrics servers were utilized, to ensure protection of data. After downloading, identifying information were removed, placed in a separate file, and an ID number was used in its place. All data was stored on a password-protected device, with backups saved in Box, a HIPPA and IRB compliant online storage endorsed by the University of Massachusetts Amherst Information Technology department.

3.3 Variables

3.3.1 Independent Variable of Interest

The independent variable is the TMAS intervention group. The TMAS intervention is a bibliotherapy intervention that focuses on creating a framework for conversations among family members, as described in chapter 2, and in more detail below. The independent variable is categorical data, with three independent groups: intervention, waitlist control, and comparison. Both the intervention and waitlist control had the opportunity to participate in the TMAS intervention.

The participants were processed into cohorts, 1 for intervention group, 2 for waitlist control group, and 3 for comparison group. Two methods of comparing changes between the groups by time were used, where the waitlist control group was included in the control group (cohort group 1), and where the waitlist control group was included in the intervention group (cohort group 2). Using analysis of covariance repeated measures
two-factor analysis, analyses were conducted on each of the three resiliency scales pre-
and post-test.

3.3.2 Dependent Variables

The main outcome variable of interest is parent report of resiliency behavior of
military children. It was also hypothesized that the TMAS intervention will have a direct
effect on improving resiliency behavior of participant vs. non participants. These two
variables were examined for interaction of effect.

3.3.3 Covariates

There are several variables that were suspected to influence the outcome of child
resiliency behaviors. The following covariates were chosen as they may influence the
relationship between the intervention and the intervention success. Demographic
information was collected to account for any differences in outcomes within the
intervention group and between the comparison groups with regard to: age of child, age
of non-military parent, gender of child, and if the non-military parent works outside the
home. Other demographic information was collected, but was not used in the analysis
due to lack of statistical power.

3.4 Sample

A convenience sample was obtained from those who participate in the TMAS
intervention and those that are connected to Parent to Parent (P2P) and MCEC. Active
duty military members and their families were recruited from seven military installations
and their surrounding community.
3.4.1 Inclusion Criteria

Inclusion criteria are that the subjects are English speaking and reading, parents completing the questionnaires are older than 18 years of age, participating or plan to participate in a TMAS intervention at one of the bases (intervention and waitlist control groups only), the military member has been part of the military for longer than one year and is an active duty member of one the following United States of America military branches: Coast Guard, Navy, Marines, Army, or Air Force. Inclusion criteria were selected for the following reasons: English speaking and reading is an inclusion criterion because the TMAS intervention, informed consent and parental permission document, as well as data collection methods are all conducted in English. Parents older than 18 years of age was an inclusion criterion so they can give consent and parental permission for participation in the proposed project. The military member being part of the military for longer than one year was an inclusion criterion because it is believed that less time than that would not fully integrate the family into military culture and routine. The branches are defined in the inclusion criteria for clarification of active duty branch purposes, and to ensure that civilian contractors who work on base are not included in the sample.

Exclusion criteria are children participating who are younger than 6 years old or older than 10 years old. Due to the developmental shifts that occur prior to 6 years of age, it would be difficult to determine if the changes observed would be part of the natural course of maturation of the child or if due to the TMAS intervention. Children older than 10 years of age were also excluded, due to the developmental and environmental changes that occur during years 11 and 12. Developmental changes, for example, such as puberty, and environmental changes, for example, is the transition from
elementary to middle school. Children who are home schooled were excluded, due to home literacy differences and other environmental differences from children who attend schools.

3.5.2 Sample Description

There were 66 parent child dyads who completed the pretest in all groups. Of those, there were 32 parents with a single child enrolled in the study, 15 parents with two children enrolled in the study, and one parent with three children enrolled in the study. Of these parent-child dyads, 48 were in the intervention group, 24 of which completed CUTH at three weeks, and 36 of which completed post-test at six weeks after the TMAS intervention. Of the 66 parent-child dyads, nine were in the waitlist control group, eight of which completed pre2-test 6 weeks after pre-test, six continued onto participate in the TMAS intervention, four completed CUTH, and five completed the post-test. There also were nine parent-child dyads in the comparison group, four of which completed pre2-test six weeks after the pretest. The comparison group was not given the option to participate in the TMAS intervention. Of the 66 parent child dyads that completed the pretest, 25 were excluded for not meeting inclusion criteria, meeting exclusion criteria, or having no baseline data available. The final sample size is 41 total, with 27 completing all tests. For the final analyses, there were 23 in the intervention group, and 4 in the control group.

3.5 Subject Recruitment

A convenience sample was obtained from those who participated in the TMAS intervention and those who are connected to P2P and MCEC. Active duty military members and their families were recruited from seven military installations and surrounding communities. To recruit families, P2P team members sent a RSVP list to the
principle investigator, who sent a recruitment email via Qualtrics platform regarding participating in this research study (see Recruitment Material, Appendix E). The principle investigator was also onsite at the TMAS intervention to recruit participants the day of the intervention. The principle investigator was onsite at the waitlist control group bases six to seven weeks prior to their TMAS intervention date. The onsite recruitment, as well as the online recruitment was intended to assist with reaching a powerful enough sample size. When onsite, email addresses were obtained and emails were sent via Qualtrics as soon as the TMAS intervention was over and the principle investigator had access to internet. It was expected that the main effect of the TMAS intervention occurs when the parents use the skills learned at the TMAS intervention at home, so collecting data the same day of the intervention was not expected to affect outcomes greatly.

The intervention group was recruited via email in response to TMAS RSVP (n=44) and “walk-ins” the day of the TMAS intervention that were sent the qualtrics link (n=39). Of those that were recruited into the intervention group, only 36 started or completed a survey on qualtrics. Parents who notified the PI that they had another child attending TMAS between the ages of 6 and 10 were sent another link (n=12), where most started or completed the pre-test survey on qualtrics (n=11). See figure 4.

The waitlist control group was recruited via three different methods. Parents were recruited in person at ten other P2P events and sent the qualtrics link (n=14). Parents who were known to attend P2P events and were on their mailing list received an invitation to the study at the same time as the TMAS was announced (n = 48). Of these two methods, only five parents completed or started the pre-test survey. The third method was for the parents who notified the PI that they had additional children between
the ages of 6 and 10 and planned to attend TMAS with those children (n=4). Of those, all parents started or completed pre-test surveys. See Figure 4.

The comparison group was recruited via a MCEC email list of more than 4,000, of which, seven parents responded as interested, and all completed or started pre-test surveys. Three of the parents indicated that they had a second child in the age group of 6 to 10, and were sent a link for their child, and all three completed or started pre-test surveys. See Figure 4.

Intervention Group

- Parent RSVPs to TMAS, sent Recruitment Email (n=44)
- Parent “walk in” at TMAS, recruited in person, sent link (n=39)
- Parent notified PI of 2nd child, sent link (n=12)

Waitlist Control Group

- Parent recruited in person, sent link (n=14)
- Parent recruited via Recruitment Email (n=48)
- Parent notified PI of 2nd child, sent link (n=3)

Comparison Group

- Parent recruited via Recruitment Email (n=7) (Blast email to 4K+ where interested participants contacted PI)
- Parent notified PI of 2nd child, sent link (n=3)

Completes Pre-Test (n=36)
Completes Pre-Test 2nd Child (n=11)
Completes Pre-Test (n=5)
Completes Pre-Test 2nd Child (n=3)
Completes Pre-Test 3rd Child (n=1)
Completes Pre-Test (n=7)
Completes PreTest 2nd Child (n=3)

Figure 4: Recruitment flow
3.6 Instruments

3.6.1 Measures

3.6.1.1 Resiliency

Three instruments were used to measure resiliency, 1) Ego-Resiliency Q-Sort-11 (ER11), 2) Devereux Student Strengths Assessment Mini (DESSA-Mini), and 3) Child and Youth Resilience Measure (CYRM). Due to MCEC requirements, only parent-reported data was allowed to be collected. Since parent-report might not be as reliable as youth report, multiple instruments were used to be collected to increase reliability and validity of parent report. Instruments are provided in Appendices A, B, C, D, F, I, and J.

3.6.1.1.1 ER-11

Parents were asked to complete the Ego-Resiliency Q-Sort 11-item short form (Taylor, Sulik, et al., 2014), derived from the 100-item California Child Q-Set (Block, 2008). When completing the ER-11, parents were asked to rank how well each item describes their child from lowest to highest (1 = highly undescriptive to 9 = highly descriptive). Six items of the ER-11 Q-Sort are positively associated with the Ego-Resiliency Prototype when scored 8 or above, and five items are negatively associated with the Ego-Resiliency Prototype when scored 3 or below (Block, 2008). These items were included in the revised instrument created by experts ranking items (1-9, with a cut off of mean of 6.0, absolute value) determining how well the items reflected pure ego-resiliency (Eisenberg et al., 2003). The original scale and 11-item scale have a correlation above .83 (mean r=.91; Taylor, Eisenberg, et al., 2014, p. 400). The ER-11 has been psychometrically tested in children ages 18 months to 12 years old to measure resilience behavior of at-risk children. Adequate internal consistency has been
established (Cronbach alpha = .76 to .78; Eisenberg et al., 2003; Taylor, Sulik, et al., 2014). The ER-11 score for each child was determined by reverse coding the items negatively associated with ego-resiliency profile (items 2, 5, 6, 7, and 8) and positively coding the items positively associated with ego-resiliency profile (items 1, 3, 4, 9, 10, and 11; see Appendix A). The rating from each item was averaged to find the score. The range of possible scores is 0 to 9. Total mean score was calculated and used in the analyses. For analysis of moderation of ending ER11 score on behavior outcomes, a high and low scoring group was created, split at the median.

3.6.1.1.2 DESSA

The Devereux Student Strengths Assessment -mini (DESSA-mini) is an 8-item short form instrument that measures social-emotional competencies of resilience for children Kindergarten to 8th grade (Naglieri, Goldstein, & LeBuffe, 2010). DESSA focuses on eight protective resilience factors: Self-Awareness, Social Awareness, Self-Management, Goal-Directed Behavior, Relationship Skills, Personal Responsibility, Decision-Marking, and Optimistic Thinking (Nickerson & Fishman, 2013). In this study, only the total composite score, which provide a numerical indication of the child’s strength for social-emotional competence, was used in the analyses (Naglieri, LeBuffe, & Shapiro, 2011 Cronbach alpha for the subscales range .87 to .93, and test-retest reliability range .79 to .90 (Naglieri, LeBuffe, & Shapiro, 2011; Nickerson & Fishman, 2013). The potential score for DESSA ranges from 0 to 32. For analysis of moderation of ending DESSA score on behavior outcomes, a high and low scoring group was created, split at the median.
3.6.1.3 CYRM

The Child and Youth Resilience Measure (CYRM) is a 12-item short form 3-point Likert scale (“no,” “sometimes,” “yes”) instrument used to measure resilience. The 12-item short form was created from the CYRM-28 using exploratory factor analysis to identify the items with the best fit, followed by a confirmatory factor analysis with a second sample. Cronbach alpha of the CYRM-12 is .84 (Liebenberg, Ungar, & LeBlanc, 2013). The CYRM-28 was developed by the Resilience Research Centre in Canada using mixed methods at 14 research sites globally to create an instrument of resilience that is reliable across cultures (Ungar & Liebenberg, 2011).

A Person Most Knowledgeable (PMK) version of the CYRM exists and was used in this study, where an adult who knows the child completes the instrument, and has been used regarding children aged 12 to 17 years old (Sanders et al., 2013), but no psychometrics have been reported from that study (See Appendix F). The child (5 to 9 years of age) and youth (9 to 23 years of age) versions of the instrument differ by two items for the complete scale, but the short form is the same and therefore is best suited for analysis across the two age groups. The potential range for the score is 0 to 24. For analysis of moderation of ending CYRM score on behavior outcomes, a high and low scoring group was created, split at the median.

3.6.1.2 Child Behavior

Child behavior was measured via the Child Behavioral Checklist (CBCL; Achenbach & Rescorla, 2001; see Appendix J). The 113-item CBCL measures internalizing and externalizing behavior problems for children aged 6 to 18. The CBCL has been used in a variety of research studies focusing on child behavior (e.g. Dutra et al.,
2000; Maggi, Roberts, MacLennan, & D’Angiulli, 2011; Moss, Bose, Wolters, & Brouwers, 1998), and has indicators for emotional and behavioral characteristics (Herzog, Everson, & Whitworth, 2011). The CBCL was revised in 2001, and that version is what is used in this research project (Achenbach & Rescorla, 2001). Parents report if the behaviors described of their child are: not at all true (0), somewhat true (1), or very true (2).

The CBCL was scored using a computer profile for the age group 6-18 module, resulting in T scores that provide a basis of comparison. Internalizing behaviors are defined as those within the self, and externalizing behaviors are with regard to other people and their expectations (Achenbach & Rescorla, 2001). Reported Cronbach’s alpha from prior studies ranges from .87 to .96 for externalizing scales, .84 to .93 for internalizing scales, and .91 to .94 for the total problem scale (Hahlweg et al., 2008; Juffer, Stams, & van IJzendoorn, 2004; Martel et al. 2007; Stone et al. 2015). Per the University of Massachusetts Amherst Institutional Review Board, the questions referring to child self-harm were removed, as the researcher could not adequately respond if that question was marked in the positive. A common method using CBCL identifies children scoring borderline or clinically significant levels of behaviors. Due to this, slight changes in scores may not impact classification to typical, borderline, or clinical.

Data was collected using the CBCL demographics questions regarding a student’s academic, special education, and extra-curricular competencies. However, this data were not significant predictors in analyses and were not included as covariates in the final analyses.
3.6.2 Moderators

3.6.2.1 Home Reading

It is expected that after the TMAS intervention, the reading activities at home will increase. To measure the home literacy environment prior to and after the TMAS intervention, the Home Literary Environment - Parent Questionnaire (HLE-P) was used. The HLE-P is a 27-item instrument that evaluates home literacy activity and reading material availability as well as family attitudes regarding literacy. The first section (seven-items, two yes/no, five five-point Likert-like items) asks parents about their literacy activity and the availability of reading materials in the home. The second section (six-items, five five-point Likert-like items, one fill in item) asks parents to describe their children’s literacy activity and their exposures to library books. The third section (14-items on a five-point Likert-like scale from “not true” to “very true”) ask parents about their family’s attitude with regard to reading, writing, and learning in general. A total score was calculated, and possible scores range from 26 to 119. For the analysis, only five items regarding reading and TV activity were included. The reduced HLE total score was calculated and used in the analysis, and possible score ranged 0 to 10.

Niklas and Schneider (2013) developed HLE-P to study literacy promotion interventions with German and Australian families with pre-school and school aged children. There are several variations of the HLE that Niklas and Schneider created, where the researchers vary the number and topics included in each study, selecting from the 27-item instrument as provided by the researchers (personal communication, August 26th, 2015; Niklas & Schneider, 2013; 2014; 2017; Niklas, Cohrssen, & Tayler, 2016; Niklas, Tayler, & Schneider, 2015). The instrument demonstrated acceptable internal
consistency (variations ranged $\alpha = 0.72$ to $0.86$) and test reliability ($r = 0.79$; Niklas & Schneider, 2013; 2014).

Post-test data collection was collected via the Reduced HLE (see appendix C). This reduced HLE is composed of questions regarding TV and reading habits of the parents and the child. The reduced instrument was scored in a similar way to the HLE. This reduced instrument did not ask the parents about traits, as they are not expected to change with this intervention. The possible score of the reduced instrument is 0 to 10.

For analysis of moderation of HLE on resiliency and behavior outcomes, a high and low scoring group was created, split at the median.

3.6.3 Covariates

3.6.3.1 Demographic

Parents were also asked several demographic questions (see Appendix D). Questions include items related to living on base, age of parents, non-military parent working status, rank of military member, branch of military member, deployment history, number of deployments, PTSD of parent, age and gender of child, number of moves in a child’s life, siblings, and age-range of children. These variables were selected based on the literature and the PI’s experience regarding resiliency in children.

3.6.3.2 Child Health

The health and wellbeing of the child may moderate the relationship between intervention group and resiliency or child behavior. Child health was measured by a shortened version of the Child Health and Illness Profile – Child Edition / Parent Report Form (CHIP-CE/PRF), using the satisfaction health scale, the satisfaction self-scale, and the comfort scale. This 36-item instrument is measured via 5-point Likert scale.
Adequate internal consistency reliability has been reported (α’s range from 0.73 to 0.82; Riley et al., 2004; Schacht, Escobar, Wagner, & Wehmeier, 2011). Two subscales were used in this analysis, the satisfaction and comfort scales. Each scale was averaged for a total. Total possible scores range is 1 to 5. The CHIP instrument was used during the pre-test only as baseline information, as child health information is not expected to change over the course of 6 weeks, nor were there any aims related to child health. Each subscale was used independently, however, neither were significant predictors in analyses and were not included as covariates in the final analyses.

3.6.4 Checking Use of TMAS at Home (CUTH)

It was important to evaluate the use of the TMAS intervention at home (see Appendix I). Intervention use was evaluated at week 3 and intervention satisfaction at week 6. The Checking Use of TMAS at Home (CUTH1) instrument, designed by the PI, measured the average number of times parents read with their child per week. In addition, parents were asked five questions that examined parent’s knowledge of the reading materials. These items were coded to examine if the parent actually read the stories with their child. In addition, there were four open ended items regarding the activities associated with the book. Similarly, these were coded to examine performance of the activities. CUTH1 sum was calculated, with a possible score of 0 to 14. For analysis of the effect of use of the TMAS intervention at home on all aims, a high and low scoring group was created, split at the median. This CUTH group is used in every aim related analysis as a covariate.

In CUTH2, Questions were asked regarding parent-child communication, optimism, overcoming challenges, school improvement, the helpfulness of the book and
activity, and reading other books other than the one given to them as part of the TMAS intervention. The final questions are from another MCEC evaluation project for a different modality of TMAS. CUTH2 sum was calculated with a possible score of 0 to 20.

3.6.5 Intervention Fidelity

Observational field data was also collected via PI observation of the TMAS events. The PI attended all ten TMAS events that the intervention group attended. The PI recorded notes during the event, as well as journaled recollections after the event. These notes include location, time, number of attendees, questions asked by the discussion facilitators, who the reader was, the craft, and what was in the take home packet. The journal recollections include layout of the intervention, event flow through phases of the intervention, and participant actions. For more detail, see Appendix K.

After all the TMAS interventions were attended and notes were completed, member checking procedure was completed with P2P team leaders from Fort Hood and Fort Bliss. From the field observation notes, a quantitative score was derived based on the TMAS field manual aspects which must be present at a TMAS. Two groups were identified via study sample distribution median split.

3.7 Data Collection Procedures

After families’ RSVP to the TMAS, participants were sent information regarding the research that included the study link. Participants received a reminder email if they did not complete surveys within one week of the initial request. The individualized link ensured that each person would only be able to complete the survey once. Links were re-issued, in the cases of technical difficulties. The window for pre-test data collection for
the intervention group was one week prior to the TMAS intervention. The waitlist control group data collection window was the seventh to sixth week prior to the TMAS intervention. The comparison group completed surveys as they enrolled.

Participants were compensated for participation in the study with receipt of a digital $10 Amazon gift card at the data collection of pre-test, pre2-test, and post-test, for a possible total compensation of $30 in Amazon gift cards. It was expected that the total time to complete all instruments at for pre-test was 20 to 40 minutes. It was expected that the time to complete all instruments at for pre2-test and post-test was 15 to 30 minutes each time. After the survey was complete, participants were directed to the Amazon site to redeem their gift card.

The survey was collected via Qualtrics, an online data collection software. Qualtrics is HIPPA and IRB compliant, and data are only accessible via the researcher’s individual secure login information. The participants clicked — or copy and pasted into a browser — their individualized link, taking them to the Qualtrics site and the entry site for the Internet survey. During the pre-test, on Qualtrics, the first page participants viewed was the informed consent page, with the option to print for participant personal records. Clicking continue on the survey was an agreement to the consent form.

To prevent sampling bias, families with more than one child between the ages of 6 and 10 years of age participating in TMAS were to have all children enrolled in the study. Data was collected on each child the in the family by allowing parents to complete the survey for each of their children. Due to the small sampling size, all siblings were included in the total sample.
3.7.1 Data Management Plan

Data was downloaded from the Qualtrics secure website at the time of analysis, was de-identified, and stored on password protected encrypted drives, in a locked fire safe box. The data was analyzed using SPSS V24. As per IRB requirements, data will be destroyed to the Federal Information Processing Standard (FIPS) recommendations by National Institute of Standards and Technology (Barker & Roginsky, 2011). Aggregate results will be provided to MCEC.

3.8 Data Analysis Strategy

3.8.1 Analysis Plan

Prior to analysis, data was inspected for outliers and data entry errors. Participants with incomplete survey data were removed from the dataset, as were children too young (<6), too old (>10), or not living near a US military installation. Case selection was used prior to each analysis to ensure the same sample was used consistently across all aims. As appropriate, prorated scores were used to complete missing data so a participant’s data could be used for analysis.

Descriptive analysis was performed to obtain information to describe the variable distributions, and check for violation of statistical assumptions (e.g. homogeneity, normality).

In order to examine the potential for moderation, dichotomous variables based on median-split were constructed for HLE, CUTH1, ER11, CYRM, and DESSA. The median split for HLE was computed based on pre-test data with a median of 7. The median split for CUTH1 was computed based on a median of 10. The median split for ER11 was computed based on the post-test data with a median of 6.6. The median split for CYRM
was computed based on the post-test data with a median of 23, and the median split for DESSA was computed based on the post-test data using a median of 25.

Univariate analyses of t-test and chi square were conducted to determine mean differences between groups at baseline and over time between the total sample and the analyzed sample. Regression was conducted to confirm intervention fidelity analysis of covariance findings. Analyses for all aims were analyzed via analysis of covariance methodology. These aims compare child outcomes across two data collection times (Time 1 and Time 2) for the intervention group and the waitlist control/comparison group. It was predicted that the intervention group have higher levels of resiliency scores and higher home literacy environment scores and lower internalizing and externalizing behavior scores at Time 2 relative to the waitlist control/comparison group. It was predicted that those that attended TMAS one or more times previously have higher levels of resiliency scores and higher home literacy environment scores at Time 1 and Time 2 relative to first time attendees.

Repeated measures analysis of covariance was used to examine data for changes (group x time interaction) between the two groups. For aims 1 to 3, the between-subjects factor were the two groups (intervention and comparison/waitlist control), child’s gender, and the repeated factor were the two time points (Time 1 and Time 2). The determination of which covariates were included in the ANCOVA was determined from bivariate correlations. Confounding variables under consideration were age of the nonmilitary parent, age of the child, whether the nonmilitary parent works outside the home, and the median split of use of TMAS at home (creation described in section 3.6.4). Aim 4 and 5 analyses included HLE median split (described in section 3.6.3.1) as a between-subjects
factor. Aim 6 used grouped ego-resiliency (creation described in section 3.6.1.1) as a between-subjects factor. Aims 7 and 8 evaluated prior attendance (yes/no) as the between-subjects factor.

To examine the effect of intervention fidelity, an analysis was performed comparing participants that attended the TMAS intervention and those that did not. An ANCOVA was used to examine ER11, CYRM, DESSA, CBCL internalizing and externalizing behavior scores individually. Between-subjects factors were intervention fidelity group and child’s gender. Covariates included were age and employment of the nonmilitary parent, selected as they were significant predictors in initial analysis.

3.8.2 Power

To identify appropriate sample size, a power analysis was conducted using G*Power 3.1.7. In a similar bibliotherapy intervention (Hahlweg, Heinrichs, Kuschel, & Feldman, 2008) a moderate to large ($d_z = 0.72$) effect size was obtained for the pre-post mean difference on the Strengths and Difficulties Questionnaire-Parent Report. Since the proposed intervention (TMAS) is a more intensive hands-on family intervention than the one used by Hahlweg et al. (2008), anticipating an effect size of this magnitude is conservative. Hahlweg et al. also collected data via the Child Behavior Checklist, an instrument to be used for data collection in this research project. A moderate ($d_z = 0.64$) effect size was obtained for the pre-post mean difference on the Child Behavior Checklist. Using this identified effect size ($d_z = 0.64$), a two-tailed alpha = 0.05 and power = 0.80, a sample size of 22 is required to identify between-group change. Conservatively, $d_z = 0.64$, was the effect size chosen to identify the necessary sample size.
for this study. To account for attrition, 40 subjects per group was the recruitment goal, which was not met for either group despite best efforts of the PI.

3.8.3 Effect Size Evaluation

To examine the magnitude of effect for the relationships examined, partial eta squared ($\eta_p^2$) was used. Based on Cohen’s rule of thumb (Cohen, 1988) for eta squared (i.e. small = 0.02, medium = 0.13, large = 0.26), a small partial eta squared will be interpreted as 0.00 to 0.09, medium partial eta squared will be interpreted as 0.1 to 0.19, and large partial eta squared will be interpreted as 0.2 and greater.

3.9 Protection of Human Subjects

Approval by the institutional review board at University of Massachusetts Amherst was gained prior to recruitment and data collection. The principal investigator ensured that participants of the TMAS intervention who were recruited in the research study understand that they may attend TMAS whether or not they are participating in the research study. At the time of completing the instruments, participants read and agree to an Informed Consent and Parental Permission Document. Within that document are explanation of risks, benefits, and general information about the study. There are no copies of consent forms obtained, and a waiver of documented signature was granted from the IRB. Consent was obtained digitally, prior to study participation.

Renewal of approval of the research study was obtained in May 2017, and additional permissions for adding those who have previously attended TMAS and recruitment of the comparison group via mass email from MCEC. Deviation was reported to IRB regarding parents recruited who filled out surveys in error on their
younger or older children rather than the children that were of the correct age for the study, despite appropriate recruitment methods.

3.9.1 Confidentiality and Privacy

Data was obtained via Qualtrics, and was downloaded to a secure drive. Study records, including any codes to data, are kept in a secure location. Only the members of the research staff will have access to the data. At the conclusion of this study, information derived from the study will be provided to MCEC in aggregate form.

3.9.2 Risks

There was minimal risk to subjects participating in this study and this intervention. As participants of the TMAS intervention, possible physical discomfort may have occurred from parents sitting on the floor with their children. Subjects were asked to respond to survey questions about their children’s behavior which may have created a risk of unexpected strong emotions. Crisis hotline information were provided at the end of the survey.

3.10 Methods Summary

Participants were recruited from seven military installations and one mass email from MCEC. Baseline data was obtained, including demographics, Devereux Student Strengths Assessment, Child and Youth Resilience Measure, Ego-Resiliency Q-Sort, Home Literacy Environment, Child Health and Illness Profile, and Child Behavior Checklist. Data was collected from parents, about their children’s behavior. The intervention group participated in the TMAS intervention, and the waitlist control/comparison group received no attention. After 6 weeks from the pre-test, all groups had data collected on DESSA, CYRM, ER11, CBCL, and Reduced-HLE-P.
CHAPTER 4

RESULTS

4.1 Sample

The mean age of the children participating in the study was 7.7 years (SD = 1.1, range = 6 – 10). The majority of the children were female, with only a third of the sample being male (36.6%). The number of children in each family ranged from two to five children and almost one half (46.3%) were first born. More than half the sample moved 3 or 4 times in their life (range = 0 - 8 times). The number of months in the current home was highly variable (Mean = 23.4 months, SD =22.0, range = 1 - 84). More than a third of the children (39%) were an infant at the time of their parent’s first deployment, while a second third (36.6%) were of toddler age. Less than a fifth of the sample (17.1%) has previously attended a TMAS intervention event.

The mean age of the non-military parents was 36.9 years (SD = 4.3, range = 25 - 46). A third (36.6%) of the nonmilitary parents work outside the home, of them, a little over a tenth work less than 20 hours a week (13.3%), a fifth work 21 to 30 hours per week (20.0%), and almost two thirds work full time (66.7%).

The mean age of the military parents was 37.8 years (SD = 4.9, range = 27 - 46). Ranks of military parent participants ranged from E-4 to O5. E rankings are indicators of enlisted, and O rankings are indicators of commissioned officer. These rankings are directly related to pay scales and are a measure of socioeconomic status. A third (29.4%) of the sample were ranked O5, while the next largest groups were ranked E-5 (14.7%) and E-6 (11.8%). A small portion of the sample (19.5%) reported a history of a PTSD
diagnosis. Less than ten percent (7.9%) of the sample had not yet been deployed at the
time of the pretest.

The mean number of prior deployments were 3.5 deployments (SD = 2.2, range =
1 – 10). Most (71.4%) of the sample have experienced 1 to 4 deployments. A fifth
(20.0%) of the sample have experienced 5 or 6 deployments. Participants reported that
deployments lasted on average 8.9 months (SD = 3.9, range = 0 - 18). During the course
of the study, one (2.6%) parent-child dyad had a parent deployed at pretest, eight (28.6%)
had deployments 3 weeks after TMAS, and seven (20.0%) reported deployments at
posttest. Those that were preparing for a deployment during this study, were 12 (33.3%)
participants at pretest, nine (33.3%) at the 3 week check in, and nine (25.0%) at the post-
test. More than half (51.3%) the sample lived on base. The most common base was Fort
Rucker (23.1%), with Fort Hood (20.5%) and Fort Bliss (20.5%) as the next most
common bases.

Although 41 subjects participated in this study, only 27 completed both the pre-
and post-test assessments. Thus, the sample for the study aims is the reduced size of 27.

Sample demographic characteristics for both samples are provided in Table 6.

<table>
<thead>
<tr>
<th>Table 6: Sample Characteristics</th>
<th>Total Sample (N = 41)</th>
<th>Analysis Sample (N = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$ / %</td>
<td>SD</td>
</tr>
<tr>
<td><strong>Child Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior TMAS (% yes)</td>
<td>17.1</td>
<td>-</td>
</tr>
<tr>
<td>Child Age</td>
<td>7.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Gender (% females)</td>
<td>63.4</td>
<td>-</td>
</tr>
<tr>
<td>Siblings (number)</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Age of Child at 1st Deployment</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>No. Moves in Child's Life</td>
<td>3.24</td>
<td>1.4</td>
</tr>
<tr>
<td>No. Months Since Last Move</td>
<td>23.4</td>
<td>22.0</td>
</tr>
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</table>
**Parent Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Nonmilitary Parent</th>
<th>Military Parent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Age</td>
<td>36.9  4.3  25  46</td>
<td>36.7  4.4  28  46</td>
</tr>
<tr>
<td></td>
<td>37.8  4.9  27  46</td>
<td>37.7  4.9  29  46</td>
</tr>
<tr>
<td>Nonmilitary Parents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed (% yes)</td>
<td>36.6  -  -  -</td>
<td>29.6  -  -  -</td>
</tr>
<tr>
<td>Military Branch (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Army</td>
<td>73.0  -  -  -</td>
<td>79.2  -  -  -</td>
</tr>
<tr>
<td>Air Force</td>
<td>24.3  -  -  -</td>
<td>20.8  -  -  -</td>
</tr>
<tr>
<td>Navy</td>
<td>2.7  -  -  -</td>
<td>0.0  -  -  -</td>
</tr>
<tr>
<td>Live On Base (% yes)</td>
<td>51.3  -  -  -</td>
<td>57.7  -  -  -</td>
</tr>
<tr>
<td>Base Location (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fort Hood, TX</td>
<td>20.5  -  -  -</td>
<td>18.5  -  -  -</td>
</tr>
<tr>
<td>Fort Bliss, TX</td>
<td>20.5  -  -  -</td>
<td>18.5  -  -  -</td>
</tr>
<tr>
<td>Fort Rucker, AL</td>
<td>23.1  -  -  -</td>
<td>25.9  -  -  -</td>
</tr>
<tr>
<td>Lackland AFB, TX</td>
<td>17.9  -  -  -</td>
<td>18.5  -  -  -</td>
</tr>
<tr>
<td>Maxwell AFB, AL</td>
<td>5.1  -  -  -</td>
<td>3.7  -  -  -</td>
</tr>
<tr>
<td>MacDill AFB, FL</td>
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<td>3.7  -  -  -</td>
</tr>
<tr>
<td>No Base</td>
<td>10.3  -  -  -</td>
<td>11.1  -  -  -</td>
</tr>
<tr>
<td>History of PTSD Dx</td>
<td>19.5  -  -  -</td>
<td>25.9  -  -  -</td>
</tr>
</tbody>
</table>

**Deployment Characteristics**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment Ever (%)</td>
<td>92.1</td>
<td>92.0</td>
</tr>
<tr>
<td>Prior (number)</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Deployed at Pre-test (% yes)</td>
<td>4.9</td>
<td>0.0</td>
</tr>
<tr>
<td>Deployed at Post-test (% yes)</td>
<td>20.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Length (months)</td>
<td>8.9</td>
<td>9.3</td>
</tr>
<tr>
<td>Past Extension Orders (% yes)</td>
<td>17.6</td>
<td>21.7</td>
</tr>
</tbody>
</table>

**4.2 Internal Consistency**

**4.2.1 Cronbach Alpha**

To evaluate internal consistency reliability, Cronbach’s alpha was computed for all outcome variables examined (See Table 7). Adequate reliability was obtained for
ER11, DESSA, CBCL total scale, CBCL internalizing subscale, and CBCL externalizing subscale. Reliability for CYRM and HLE was lower than the desired level of 0.70.

Table 7: Cronbach’s alpha for study scales

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER11</td>
<td>41</td>
<td>.78</td>
</tr>
<tr>
<td>DESSA</td>
<td>40</td>
<td>.73</td>
</tr>
<tr>
<td>CYRM</td>
<td>40</td>
<td>.53</td>
</tr>
<tr>
<td>CBCL Total</td>
<td>40</td>
<td>.92</td>
</tr>
<tr>
<td>CBCL Internal</td>
<td>40</td>
<td>.76</td>
</tr>
<tr>
<td>CBCL External</td>
<td>40</td>
<td>.79</td>
</tr>
<tr>
<td>HLE</td>
<td>39</td>
<td>.46</td>
</tr>
</tbody>
</table>

*Note:* Ego-Resiliency Scale (ER11), Devereux Student Strengths Assessment-Mini (DESSA), Child Youth Resiliency Measure - Person Most Knowledgeable (CYRM), Child Behavior Check List - Parent Report (CBCL), Home Literacy Environment (HLE)

4.3 Univariate Analyses

4.3.1 Identification of Child Behavior Problems

To examine the level of child behavior problems prior to the intervention, CBCL t score distributions were examined to identify children that were above the threshold for borderline (≥ 67) or clinical behavior problems (≥70). In the intervention group, 13.6% of the children had borderline internalizing and 4.5% had clinical internalizing behavior problems. Also in the intervention group, 18.2% of the children were borderline and 4.5% had clinical total behavior problems. No subjects in the control group scored borderline or clinical t scores in internalizing, or total CBCL. There were no children with borderline or clinical levels of externalizing behavior problems in either the control or the intervention group. The percent of children with borderline or clinical behavior problems prior to the intervention is comparable to other intervention (Maggi, Roberts, MacLennan, & D’Angiulli, 2011).

Chi square analyses were performed to examine for differences in pre-intervention behavior problems between the control and the intervention groups. There
were no significant differences in the proportion of children with either borderline or clinical behavior problems.

Table 8: Borderline and clinical CBCL scores at pre-test for analyzed sample

<table>
<thead>
<tr>
<th></th>
<th>Intervention (N=22)</th>
<th>Control (N=4)</th>
<th>$\chi^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internalizing t</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Borderline or +</td>
<td>13.6</td>
<td>0.0</td>
<td>0.6</td>
<td>.432</td>
</tr>
<tr>
<td>% Clinical or +</td>
<td>4.5</td>
<td>0.0</td>
<td>0.2</td>
<td>1.000</td>
</tr>
<tr>
<td><strong>Externalizing t</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Borderline or +</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>% Clinical or +</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total t</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Borderline or +</td>
<td>18.2</td>
<td>0.0</td>
<td>0.9</td>
<td>.354</td>
</tr>
<tr>
<td>% Clinical or +</td>
<td>4.5</td>
<td>0.0</td>
<td>0.2</td>
<td>1.000</td>
</tr>
</tbody>
</table>

4.3.2 Scale Descriptive Data and an Examination of Child Gender Differences

Descriptive statistics for all outcome variables examined are provided in Table 9. In addition, differences between boys and girls were examined via independent t-tests. This analysis was performed on both the total and analysis samples (See Table 9).

The means and standard deviations of ER11 scores of the subjects in this study is comparable to other resiliency research (Eisenberg et al. 2003). There are currently no studies reporting CYRM-12 to compare results. The study validating the DESSA-mini examining students in grades K-8, found the T-score means of the 1st through 5th graders to range from 49.5 (SD = 8.9) to 53.5 (SD = 9.5; Naglieri, LeBuffe, & Shapiro, 2011). A one-sample t-test compared the study sample to normative data (T-score – 50). Results revealed that sample DESSA scores were significantly higher than normative data (sample mean T-Score=56.2, SD = 6.2, t=5.2, p<0.001).
In this study, the 27-item HLE (personal communication, August 26, 2015) was used. However, the complete 27-item HLE is not used in the literature. In the literature, items are selectively taken from the complete 27-item instrument and used in different configurations. The six items chosen to examine pre-and post-test differences across time in this study do not correspond to any configurations in the literature. In order to compare to the literature, the 12-item subset of HLE from Niklas and Schneider’s 2013 study was selected. The selected items included in the comparison regard reading behavior of parents and the child, number of books in the home, visits to libraries, and the amount of TV watching that occurs in the house. In the literature, reported values ranged from 5 to 41 with a mean of M =30.8 (SD = 6.9; Niklas & Schneider, 2013). Analysis comparing sample values to reported means was performed using a one-sample t-test. The study sample mean HLE scores, prior to the intervention, were significantly lower than mean values reported in in the literature (sample mean=17.5, SD=3.6, t=-19.1, p<0.000). Therefore, the analyzed sample has lower home literacy environment than samples reported in the literature.

To examine if boys and girls differed on pre- and post-intervention scales, independent group t-tests were performed for resiliency, home literacy environment, and behavior between girls and boys for both the total sample and the analyzed sample. Analyses revealed no significant differences between boys and girl on any measures (all p values > 0.10; see Table 9).

Table 9: Means and SD of scales at pre and post-test

<table>
<thead>
<tr>
<th></th>
<th>Total Sample</th>
<th>Analyzed Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>All (N=41)</td>
<td>All (N=27)</td>
<td></td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>$\bar{X}$</td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\bar{X}$</td>
<td>$\bar{X}$</td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Differences between outcome variable total scores between samples

To examine for the potential for pre-test differences between the intervention and the control group, independent t-tests were performed. There were no significant differences between the intervention group and the control group prior to the initiation of the intervention for any of the scales evaluated in this study (see Table 10).

Table 10: Mean differences at pre-test between intervention and control group

<table>
<thead>
<tr>
<th></th>
<th>All (N=27)</th>
<th>Intervention (N=23)</th>
<th>Control (N=4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>ER11</td>
<td>6.6</td>
<td>1.2</td>
<td>6.5</td>
</tr>
<tr>
<td>CYRM</td>
<td>22.4</td>
<td>1.9</td>
<td>22.3</td>
</tr>
<tr>
<td>DESSA</td>
<td>56.2</td>
<td>6.2</td>
<td>56.2</td>
</tr>
<tr>
<td>HLE</td>
<td>8.5</td>
<td>3.4</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Note: All p values greater than 0.10
Significance Legend p ≤0.01** p ≤ 0.05*; p ≤0.10†
4.3.4 Differences between total and analyzed sample

Analyses were performed to examine for pre-intervention differences between those who did and those who did not complete the study. Analyses were performed on all scales evaluated in study aims as well as demographic variables uses in analysis as confounding variables. Nominal variables were examined via chi-square, while continuous variables were examined via independent $t$-test. There were no significant differences on any study variables between families that did and did not complete the study (see Table 11).

**Table 11: Difference between total and analyzed sample analyses**

<table>
<thead>
<tr>
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<th>Did not Complete (N=14)</th>
<th>Analysis Sample (N=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$ / %</td>
<td>SD</td>
</tr>
<tr>
<td>Gender (%Female)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>57.1</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child</td>
<td>7.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Nonmilitary Parent</td>
<td>37.1</td>
<td>4.4</td>
</tr>
<tr>
<td>Non-military Parent Employed (%Yes)</td>
<td>50.0</td>
<td>-</td>
</tr>
<tr>
<td>Prior TMAS (% Yes)</td>
<td>21.4</td>
<td>-</td>
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<tr>
<td>Cohort (% Intervention Group)</td>
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<td>-</td>
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<td>$ER11$</td>
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<td></td>
</tr>
<tr>
<td>Low Score (%)</td>
<td>42.9</td>
<td>-</td>
</tr>
<tr>
<td>Pre</td>
<td>6.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Post</td>
<td>6.9</td>
<td>1.2</td>
</tr>
<tr>
<td>$CYRM$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Score (%)</td>
<td>78.6</td>
<td>-</td>
</tr>
<tr>
<td>Pre</td>
<td>22.4</td>
<td>1.8</td>
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<tr>
<td>Post</td>
<td>22.8</td>
<td>1.1</td>
</tr>
<tr>
<td>$DESSA$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Score (%)</td>
<td>28.6</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pre</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>57.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Post</td>
<td>59.4</td>
<td>8.0</td>
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<tr>
<td><strong>HLE</strong></td>
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<td></td>
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<tr>
<td>Low Score (%)</td>
<td>50.0</td>
<td>-</td>
</tr>
<tr>
<td>Pre</td>
<td>7.5</td>
<td>5.0</td>
</tr>
<tr>
<td>Post</td>
<td>6.2</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>CBCL</strong></td>
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<tr>
<td>Total Clinical t pre</td>
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<td>-</td>
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<tr>
<td>Internal Clinical t pre</td>
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<td>-</td>
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<tr>
<td>Internal score Pre</td>
<td>5.4</td>
<td>5.0</td>
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<tr>
<td>Internal Score Post</td>
<td>5.0</td>
<td>4.0</td>
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<tr>
<td>External Clinical t pre</td>
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<td>-</td>
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<tr>
<td>External Score Pre</td>
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<td>5.8</td>
</tr>
<tr>
<td>External Score Post</td>
<td>4.1</td>
<td>3.4</td>
</tr>
</tbody>
</table>

### 4.4 Analysis of Study Aims

#### 4.4.1 Aim 1: Examine the effectiveness of the TMAS intervention in increasing resiliency in school-aged military children

Aim 1 examined resiliency change over time between groups. Analysis of covariance (ANCOVA) was used to examine pre- and post-test differences. Intervention group and gender were both between group factors. Covariates included were CUTH group (high vs low use of TMAS at home), nonmilitary parent’s age and employment status (employed vs not employed). For more information on creation of the CUTH group variable, please see section 3.6.4 and 3.8.1.

The first resiliency scale examined was ER11. In this analysis, although the pre-post intervention change across time for resiliency scores was not significant ($F = 0.4 \ p = .533, \ \eta^2_p = 0.02$), there was a significant group by time interaction ($F = 8.7, \ p = .008, \ \eta^2_p = 0.30; \text{see Table 12 and Figure 5}$). Children in the intervention group showed improvement after the intervention, whereas children in the control group did not. In
addition, there was a significant gender by time interaction (F = 5.0, p = .037, \( \eta^2_p = 0.20 \); see Table 12 and Figure 6). Although there was not much change in girls scores across time, boy’s resiliency scores were lower at post-test. Finally, there was also a group by gender by time interaction (F = 7.0 p = .015; \( \eta^2_p = 0.26 \); see Table 12 and Figure 7). Children in the control group had reduced resiliency scores across time, and this reduction was much greater for boys than for girls.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>( \eta^2_p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER11</td>
<td>27</td>
<td>6.9</td>
<td>6.1</td>
<td>0.4</td>
<td>.533</td>
<td>0.02</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>23</td>
<td>6.5</td>
<td>6.8</td>
<td>8.7</td>
<td>.008</td>
<td>0.30</td>
</tr>
<tr>
<td>Control</td>
<td>4</td>
<td>7.2</td>
<td>5.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ER11 * Gender</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>6.7</td>
<td>6.7</td>
<td>5.0</td>
<td>.037</td>
<td>0.20</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>7.0</td>
<td>5.5</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ER11 * Female * Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>15</td>
<td>6.6</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>3</td>
<td>6.9</td>
<td>6.7</td>
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</tr>
<tr>
<td>ER11 * Male * Cohort</td>
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</tr>
<tr>
<td>Intervention</td>
<td>8</td>
<td>6.5</td>
<td>6.8</td>
<td>7.0</td>
<td>.015</td>
<td>0.26</td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>7.5</td>
<td>4.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
Figure 5: ER11 mean score change over time by group
Using a similar analytic design, analyses were performed on the CYRM resilience scale. In this analyses, covariates included were nonmilitary parent age and CUTH group. Similar to the ER11, there was no overall change in CYRM scores across time ($F = 1.0, p = .325, \eta^2 = 0.05$), but there was a significant intervention group by time interaction ($F = 4.8, p = .039, \eta^2 = 0.19$, see Table 13 and Figure 8). CYRM results are similar to ER11 results in that the intervention group mean scores increased over time,
while the control group decreased. As with ER11 results, there was a significant gender by time interaction (F = 6.7, p = .017, \( \eta^2_p = 0.24 \), see Table 13 and Figure 9). Different from the ER11 results, CYRM scores for girls increased over time, and similar to ER11, boy’s CYRM scores decrease.

Table 13: Analysis of CYRM pre-post difference

<table>
<thead>
<tr>
<th>CYRM</th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>( \eta^2_p )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>27</td>
<td>22.6</td>
<td>22.0</td>
<td>1.0</td>
<td>.325</td>
<td>0.05</td>
</tr>
<tr>
<td>CYRM * Cohort</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
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<td>23</td>
<td>22.4</td>
<td>22.9</td>
<td>4.8</td>
<td>.039</td>
<td>0.19</td>
</tr>
<tr>
<td>Control</td>
<td>4</td>
<td>22.9</td>
<td>21.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
<td>22.5</td>
<td>23.1</td>
<td>6.7</td>
<td>.017</td>
<td>0.24</td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>22.7</td>
<td>20.8</td>
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</tr>
<tr>
<td>CYRM * Gender</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
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<td>22.2</td>
<td>23.1</td>
<td>3.6</td>
<td>.071</td>
<td>0.15</td>
</tr>
<tr>
<td>Control</td>
<td>3</td>
<td>22.8</td>
<td>23.2</td>
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</tr>
<tr>
<td>CYRM * Female * Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>8</td>
<td>22.6</td>
<td>22.7</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>22.9</td>
<td>18.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Figure 8: CYRM score change over time by intervention group
DESSA was analyzed using the same methods as ER11 and CYRM. Covariates in this analysis were nonmilitary parent employment status and CUTH group. There was not significant change across time in DESSA resiliency scores, nor were there any significant interactions (see Table 14).

Table 14: Analysis of DESSA pre-post differences

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>ηp²</th>
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<tr>
<td>DESSA * Cohort</td>
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</tr>
<tr>
<td>Intervention Control</td>
<td>23</td>
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<td>50.3</td>
<td>0.5</td>
<td>.491</td>
<td>0.02</td>
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<tr>
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<td>22.0</td>
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<td></td>
</tr>
<tr>
<td>DESSA * Gender</td>
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<td></td>
<td></td>
<td></td>
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<td>55.5</td>
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<td>.990</td>
<td>0.00</td>
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<td>Male</td>
<td>9</td>
<td>53.2</td>
<td>52.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DESSA * Female * Cohort</td>
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<td></td>
</tr>
<tr>
<td>Intervention Control</td>
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<td>55.8</td>
<td>0.7</td>
<td>.412</td>
<td>0.03</td>
</tr>
<tr>
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<td>55.6</td>
<td>55.2</td>
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<tr>
<td>DESSA * Male * Cohort</td>
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</tr>
<tr>
<td>Intervention Control</td>
<td>8</td>
<td>56.6</td>
<td>59.7</td>
<td>0.7</td>
<td>.412</td>
<td>0.03</td>
</tr>
<tr>
<td>Control</td>
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<td>49.8</td>
<td>45.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
4.4.2 Aim 2: Examine the effectiveness of the TMAS intervention in increasing home literacy environment.

Aim 2 examined home literacy environment (HLE) change over time between groups. Analysis of covariance was used to examine pre- and post-test differences. Intervention group and child gender were between subjects group factors. Covariates included were CUTH group. There was no significant change across time in HLE scores, nor were there any significant interactions (see Table 15). Although not significant at the 0.05 convention, there was a marginally significant impact of time by cohort interaction on HLE change across time with a medium-large effect size ($F = 4.3, p = .051, \eta^2_p = 0.17$). Children in the intervention group increased HLE scores across time while the control group decreased (see Table 15 and Figure 10).

Table 15: Analysis of HLE pre-post difference

<table>
<thead>
<tr>
<th>HLE</th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLE * Cohort</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>22</td>
<td>8.6</td>
<td>9.0</td>
<td>4.3</td>
<td>.051</td>
<td>0.17</td>
</tr>
<tr>
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<td>7.2</td>
<td>4.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLE * Gender</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
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<td>7.3</td>
<td>0.4</td>
<td>.549</td>
<td>0.02</td>
</tr>
<tr>
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<td>6.8</td>
<td>6.0</td>
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<td></td>
</tr>
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<td>HLE * Female * Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>14</td>
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<td>8.4</td>
<td>0.1</td>
<td>.743</td>
<td>0.01</td>
</tr>
<tr>
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<td>6.2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>HLE * Male * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
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<td>9.0</td>
<td>9.5</td>
<td>0.1</td>
<td>.743</td>
<td>0.01</td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>4.7</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
4.4.3 Aim 3: Examine the effectiveness of the TMAS intervention in changing behavior in school-aged military children.

Aim 3 examined problem behavior change over time between groups. Analysis of covariance was used to examine pre- and post-test differences. Intervention group and gender were both between group factors. Covariates included were CUTH group and age of nonmilitary parent. CBCL subscales of internalizing and externalizing behavior were analyzed separately using raw scores.

The first CBCL problem behavior subscale examined was internalizing. In this analysis, there was a significant pre-post intervention change across time for internalizing behavior \( (F = 4.8, p = .041, \eta^2 = 0.19) \). However, there was no statistically significant intervention group by time interaction \( (F = 0.1, p = .806, \eta^2 = 0.00) \). Although not significant at the 0.05 convention, there was a marginally significant impact of gender by time interaction on internalizing behavior change \( (F = 3.2, p = .090, \eta^2 = 0.14) \). Girls decreased internalizing behavior across time, while boys increased.
Finally, there was an intervention group by gender by time interaction ($F = 5.6$, $p = .028$, $\eta^2_p = 0.22$). Internalizing behavior problems in the control group increased for the boys and decreased for girls. In the intervention group, internalizing behavior problems increased for girls and decreased for boys. (see Figure 11 and Table 16). The change of note here, with a large effect size, is what occurs for the control groups compared to the intervention groups. The intervention groups do not have as severe change over time as the control groups, indicating a potential protective factor of the TMAS intervention, which differs for boys and girls, with boys having a greater protective factor.

<table>
<thead>
<tr>
<th>Intern * Cohort</th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intern</td>
<td>26</td>
<td>3.7</td>
<td>4.1</td>
<td>4.8</td>
<td>.041</td>
<td>0.19</td>
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<tr>
<td>Intervention</td>
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<td>6.2</td>
<td>6.3</td>
<td>0.1</td>
<td>.806</td>
<td>0.00</td>
</tr>
<tr>
<td>Control</td>
<td>4</td>
<td>1.3</td>
<td>1.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern * Gender</td>
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<td>4.5</td>
<td>3.3</td>
<td>3.2</td>
<td>.090</td>
<td>0.14</td>
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<td>2.9</td>
<td>4.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern * Female</td>
<td>14</td>
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<td>6.7</td>
<td>5.6</td>
<td>.028</td>
<td>0.22</td>
</tr>
<tr>
<td>* Cohort</td>
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<td>-0.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intern * Male *</td>
<td>8</td>
<td>6.3</td>
<td>5.9</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cohort</td>
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<td>-0.4</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
Using a similar analytic design, analyses were performed using the CBCL externalizing behavior subscale. Different from internalizing behavior, there was no overall change in externalizing behavior scores across time ($F = 1.7$, $p = .201$, $\eta^2_p = 0.08$). However, like internalizing behavior there were no significant interactions for externalizing behavior score for group by time ($F = 0.3$, $p = .617$, $\eta^2_p = 0.01$). Unlike internalizing behavior, there was a significant time by gender interaction ($F = 4.6$, $p = .045$, $\eta^2_p = 0.19$). Externalizing behavior scores for boys increased across time, while girls scores decreased (see Figure 12). Finally, there was also a group by gender by time interaction ($F = 5.1$, $p = .035$, $\eta^2_p = 0.20$). Boys and girls in the intervention group increased externalizing behavior scores across time. In the control group, girls decreased scores, while boys increased (see Figure 13 and Table 17). Similar to internalizing behavior outcomes, the control group changes compared to the intervention group steadiness in scores indicate a possible protective factor which prevent problem behaviors from becoming worse.
Table 17: Analysis of externalizing behavior pre-post differences

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
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<tr>
<td>Extern</td>
<td>26</td>
<td>3.1</td>
<td>4.1</td>
<td>1.7</td>
<td>.201</td>
<td>0.08</td>
</tr>
<tr>
<td>Extern * Cohort</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
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<td>4.2</td>
<td>4.7</td>
<td>1.7</td>
<td>.201</td>
<td>0.08</td>
</tr>
<tr>
<td>Control</td>
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<td>2.1</td>
<td>3.5</td>
<td>0.3</td>
<td>.617</td>
<td>0.01</td>
</tr>
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<td>2.7</td>
<td>4.6</td>
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<td>0.19</td>
</tr>
<tr>
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<td>2.7</td>
<td>5.5</td>
<td>0.3</td>
<td>.617</td>
<td>0.01</td>
</tr>
<tr>
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<tr>
<td>Intervention</td>
<td>14</td>
<td>4.5</td>
<td>5.1</td>
<td>5.1</td>
<td>.035</td>
<td>0.20</td>
</tr>
<tr>
<td>Control</td>
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<td>2.7</td>
<td>0.4</td>
<td>0.3</td>
<td>.617</td>
<td>0.01</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
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<td>3.9</td>
<td>4.3</td>
<td>5.1</td>
<td>.035</td>
<td>0.20</td>
</tr>
<tr>
<td>Control</td>
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<td>1.5</td>
<td>6.7</td>
<td>0.3</td>
<td>.617</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Figure 12: Externalizing score change over time by gender
4.4.4 Aim 4: Understand the impact of home literacy environment on the relationship between intervention group and resiliency in school-aged military children.

Aim 4 examined resiliency change over time between groups, moderated by pre-test home literacy environment (HLE). Analysis of covariance was used to examine pre- and post-test differences. Intervention group and HLE group were between group factors. For more information on HLE group variable creation, see section 3.6.2.1 and section 3.8.1. Covariates included were CUTH group, non-military parent’s age and employment status.

The first resiliency scale examined was the ER11. In this analysis, the pre-post intervention change across time for resiliency scores was not significant \( (F = 0.6, \ p = .433, \ \eta^2 = 0.03) \), and there was a significant intervention group by time interaction \( (F = 9.1, \ p = .007, \ \eta^2 = 0.32) \). Children in the intervention group showed an increase in ego-resiliency after the intervention, while children in the control group did not (see Table 18 and Figure 5). There was HLE group by time interaction \( (F = 4.9, \ p = .040, \ \eta^2 = 0.20) \).
Subjects with low HLE scores prior to the intervention had decrease in ER11 scores from pre to post intervention. This same change was not seen in the subjects who initially had high HLE scores (see Table 18 and Figure 14). Finally, there was also an intervention group by HLE group by time interaction ($F = 7.5$, $p = .013$, $\eta^2_p = 0.28$). Children in the intervention group had a slight increase in ER11 scores when they were in both the low and high HLE group. In the control group, children in the low HLE group had different amounts of decreases than high HLE group. (See Table 18 and Figure 15). This means that those with the lowest home literacy benefit the most in ego-resiliency from exposure to TMAS, and that to already have high home literacy is a protective factor for ego-resiliency.

Table 18: Analysis of ER11 pre-post difference moderated by HLE group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
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<td>ER11</td>
<td></td>
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</tr>
<tr>
<td>ER11 * Cohort</td>
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<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>22</td>
<td>6.5</td>
<td>6.8</td>
<td>9.1</td>
<td>.007</td>
<td>0.32</td>
</tr>
<tr>
<td>Control</td>
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<td>7.2</td>
<td>5.5</td>
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<td></td>
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<td>6.8</td>
<td>5.4</td>
<td>4.9</td>
<td>.040</td>
<td>0.20</td>
</tr>
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<td>6.9</td>
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<td></td>
</tr>
<tr>
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<td>6.6</td>
<td>7.5</td>
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<td>0.28</td>
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<td>4.3</td>
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</tr>
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<tr>
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<td>7.0</td>
<td>7.5</td>
<td>.013</td>
<td>0.28</td>
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<td>7.0</td>
<td>6.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
Using a similar analytic design, analyses were performed using the CYRM resilience scale. In this analysis, covariates included CUTH group and age of the child and nonmilitary parent. There was no change in CYRM scores across time ($F = 0.0, \ p = .856, \ \eta^2_p = 0.00$) but there was a significant time by intervention group interaction ($F = 5.1, \ p = .035, \ \eta^2_p = 0.21$; see Table 19 and Figure 8). The intervention group increased
CYRM score over time while the control group decreased. While not significant at the typical convention $\alpha = 0.05$, there was a marginally significant with medium effect size HLE group by time change ($F = 3.3, p = .083, \eta^2_p = 0.15$). Children with high HLE scores prior to the intervention had higher CRYM scores after the intervention. While children with low HLE scores decreased CRYM scores after the intervention (see Table 19 and Figure 16). This means that children who have high home literacy have protective factors for resiliency not seen for those with low home literacy. Finally, there was no intervention group by HLE group by time interaction ($F = 2.6, p = .121, \eta^2_p = 0.12$; See Table 19).

Table 19: Analysis of CYRM pre-post differences moderated by HLE group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
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<td>CYRM</td>
<td>26</td>
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<td>21.9</td>
<td>0.0</td>
<td>.856</td>
<td>0.00</td>
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<td>.083</td>
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<td>23.0</td>
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<tr>
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<td>22.5</td>
<td>23.1</td>
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<td>.121</td>
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<tr>
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<td>3</td>
<td>23.0</td>
<td>23.1</td>
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</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
DESSA was analyzed using the same methods as ER11 and CYRM. Covariates in this analysis were CUTH group and nonmilitary parent’s age and employment status. There was no significant change across time in DESSA resiliency scores, nor were there any significant interactions (see Table 20).

Table 20: Analysis of DESSA pre-post differences moderated by HLE group

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<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>ηp²</th>
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<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>22</td>
<td>56.3</td>
<td>57.3</td>
<td>0.3</td>
<td>.588</td>
<td>0.02</td>
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<td>Control</td>
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<td>52.1</td>
<td>50.5</td>
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<tr>
<td>Low</td>
<td>13</td>
<td>54.2</td>
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<td>.292</td>
<td>0.06</td>
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<td>56.4</td>
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<td></td>
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<td>DESSA * Low HLE * Cohort</td>
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</tr>
<tr>
<td>Intervention</td>
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<td>57.3</td>
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<td>55.5</td>
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<td>57.4</td>
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<td>.953</td>
<td>0.00</td>
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<td>45.4</td>
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</tbody>
</table>

Note: values are marginal means adjusted for covariates
4.4.5 Aim 5: Understand the impact of home literacy environment on the relationship between intervention group and behavior in school-aged military children.

Aim 5 examined problem behavior change over time between groups as moderated by pre-test home literacy environment (HLE). CBCL internalizing and externalizing behavior subscales were used to evaluate problem behavior changes. Internalizing and externalizing behavior were analyzed separately. Analysis of covariance was used to examine pre- and post-test differences. Intervention group and HLE group were between group factors. For more information on HLE group, see sections 3.6.2.1 and 3.8.1. Covariates included were CUTH group and ages of the child and the nonmilitary parent.

The first CBCL problem behavior subscale examined was internalizing behavior. Results yielded an overall change in internalizing scores across time ($F = 5.3, p = .033, \eta_p^2 = 0.23$). However, there was no difference in change across time between intervention groups ($F = 0.3, p = .569, \eta_p^2 = 0.02$). The HLE group by time interaction ($F = 1.0, p = .330, \eta_p^2 = 0.05$) or the HLE group by intervention group by time interaction terms ($F = 2.9, p = .105, \eta_p^2 = 0.14$; see Table 21) were also not significant. The impact of the intervention was the same across the two HLE groups.
Table 21: Analysis of internalizing pre-post differences moderated by HLE group

| Intern * Cohort | N   | Pre | Post | F   | p    | η² 
|-----------------|-----|-----|------|-----|------|------
| Intern          | 25  | 3.5 | 4.1  | 5.3 | .033 | 0.23 |
| Intervention    | 21  | 6.4 | 6.5  | 0.3 | .569 | 0.02 |
| Control         | 4   | 0.5 | 1.7  |     |      |      |

| Intern * HLE    | N   | Pre | Post | F   | p    | η² 
|-----------------|-----|-----|------|-----|------|------
| Intern * Low HLE | 13  | 4.0 | 5.5  | 1.0 | .330 | 0.05 |
| High            | 12  | 3.0 | 2.6  |     |      |      |

| Intern * High HLE | N   | Pre | Post | F   | p    | η² 
|------------------|-----|-----|------|-----|------|------
| Intervention     | 12  | 7.8 | 7.1  |     |      |      |
| Control          | 1   | 0.1 | 4.0  | 2.9 | .105 | 0.14 |

| Intern * Low HLE | N   | Pre | Post | F   | p    | η² 
|------------------|-----|-----|------|-----|------|------
| Intervention     | 9   | 5.1 | 5.8  |     |      |      |
| Control          | 3   | 0.9 | -0.6 |    |      |      |

Note: values are marginal means adjusted for covariates

In the analyses for externalizing behavior covariates included CUTH group and ages of the child and the nonmilitary parent. Results show that there was not an overall significant change in externalizing scores across time (F = 0.6, p = .462, η² = 0.03) or either a time by cohort (F = 0.2, p = .640, η² = 0.01) or HLE group by time interaction (F = 2.9, p = .103, η² = 0.14). Although not significant at the typical convention α = 0.05, there was a marginally significant HLE group by intervention group by time (F = 3.8, p = .066, η² = 0.18; see Table 22 and Figure 17). The children with low initial HLE scores increased externalizing behavior over time when in either the intervention or control group. Children with high initial HLE scores increased externalizing behavior in the intervention group and decreased in the control group. This indicates that high home literacy along with attending TMAS, may be a protective factor for preventing externalizing behavior to become worse.
Table 22: Analysis of externalizing pre-post differences moderated by HLE group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Extern * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
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<td>4.2</td>
<td>4.8</td>
<td>0.2</td>
<td>.642</td>
<td>0.01</td>
</tr>
<tr>
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<td>2.0</td>
<td>3.6</td>
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<td></td>
</tr>
<tr>
<td>Low</td>
<td>13</td>
<td>2.7</td>
<td>5.6</td>
<td>2.9</td>
<td>.103</td>
<td>0.14</td>
</tr>
<tr>
<td>High</td>
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<td>3.4</td>
<td>2.9</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Extern * Low HLE * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>12</td>
<td>4.1</td>
<td>4.5</td>
<td></td>
<td></td>
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<td>Control</td>
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<td>1.4</td>
<td>6.6</td>
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<td></td>
</tr>
<tr>
<td>Extern * High HLE * Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>9</td>
<td>4.2</td>
<td>5.1</td>
<td>3.8</td>
<td>.066</td>
<td>0.18</td>
</tr>
<tr>
<td>Control</td>
<td>3</td>
<td>2.6</td>
<td>0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Figure 17: Externalizing score change over time by HLE group and intervention group

4.4.6 Aim 6: Understand the impact of resiliency on the relationship between intervention group and behavior outcomes in school-aged military children.

Aim 6 examined the impact of resilience, operationalized as a two-group (low vs low resiliency) on the relationship between intervention group and behavior. For each of the three resiliency instruments, a high vs low resiliency group variable was created. Analysis of covariance was used to examine pre- and post-test differences. Resiliency group (ER11, CYRM, or DESSA) and intervention group were both between group
factors. Covariates included were CUTH group, nonmilitary parent’s age and employment status. A total of six analyses were conducted for this aim, comparing CBCL internalizing and externalizing behavior subscales separately with each of the three resiliency grouped variables.

The first analysis examined the impact of the ER11 grouped variable on the relationship between intervention group and internalizing behavior. Analysis identified no evidence of moderation. When resilience was operationalized as a two group variable, there was no significant change in internalizing behavior across time \( (F = 4.1, p = .058, \eta^2 = 0.18) \), there was not a significant time by cohort \( (F = 0.9, p = .351, \eta^2 = 0.05) \) or time by resilience group interaction \( (F = 0.0, p = .980, \eta^2 = 0.00) \). In addition, there was not a significant time by intervention group by resilience group interaction \( (F = 0.0, p = .892, \eta^2 = 0.00; \text{ see Table 23}) \). This means that there is no change in the relationship between TMAS and internalizing behavior based on ego-resiliency.

<table>
<thead>
<tr>
<th>Table 23: Analysis of internalizing pre-post differences moderated by ER11 group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intern * Cohort</td>
</tr>
<tr>
<td>Intern</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Low ER11</td>
</tr>
<tr>
<td>High ER11</td>
</tr>
<tr>
<td>Intern * Low ER11 * Cohort</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Intern * High ER11 * Cohort</td>
</tr>
<tr>
<td>Intervention</td>
</tr>
<tr>
<td>Control</td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Using a similar analytic design, the second analysis examined the impact of the ER11 grouped variable on the relationship between intervention group and externalizing behavior. Analysis identified no evidence of moderation. When resilience was
operationalized as a two group variable, there was no significant change in externalizing behavior across time \((F = 1.8, p = .195, \eta^2 = 0.09)\), there was not a significant time by cohort \((F = 0.4, p = .548, \eta^2 = 0.02)\). Although not significant at the \(\alpha = 0.05\) convention, there was a marginally significant impact of ER11 grouped variable on externalizing behavior change across time interaction \((F = 4.2, p = .053, \eta^2 = 0.18)\). Children in the low ER11 group increased externalizing behavior across time while the high ER11 group decreased (see Table 24 and Figure 18). This means that there is a difference in the relationship between ego-resiliency group and externalizing behavior outcomes. In addition, there was not a significant time by intervention group by resilience group interaction \((F = 1.7, p = .211, \eta^2 = 0.08; \text{ see Table 24})\).

| Table 24: Analysis of externalizing pre-post differences moderated by ER11 group |
|---------------------|--------|-------|---|-------|--------|-------|
| Extern              | N     | Pre   | Post | F    | p      | \(\eta^2\) |
| Extern * Cohort     | Intervention | 22 | 3.9 | 4.4 | 0.4 | .548 | 0.02 |
|                     | Control | 4   | 2.5 | 1.8 |     |       |       |
| Extern * ER11       | Low    | 15  | 3.3 | 4.9 | 4.2 | .053 | 0.18 |
|                     | High   | 11  | 3.1 | 1.3 |     |       |       |
| Extern * Low ER11 * Cohort | Intervention | 13 | 5.6 | 6.7 | 1.7 | .211 | 0.08 |
|                     | Control | 2   | 1.1 | 3.1 |     |       |       |
| Extern * High ER11 * Cohort | Intervention | 9  | 2.3 | 2.2 |     |       |       |
|                     | Control | 2   | 3.8 | 0.5 |     |       |       |

Note: values are marginal means adjusted for covariates
The third analysis examined the impact of the CYRM grouped variable on the relationship between intervention group and internalizing behavior. Analyses identified no evidence of moderation. When resilience was operationalized as a two group variable, there was a significant change in internalizing scores across time ($F = 6.0, p = .024, \eta^2_p = 0.24$), but there was not a significant time by cohort interaction ($F = 1.3, p = .264, \eta^2_p = 0.07$). Unlike ER11 grouped variable analyses, there was a significant time by resilience group interaction ($F = 8.8, p = 0.08, \eta^2_p = 0.32$). Children in the low CYRM group increased internalizing behavior across time, while the high CYRM group decreased (see Table 25 and Figure 19). In addition, while not significant at the $\alpha = 0.05$ convention, there was a marginally significant time by intervention group by resilience group interaction ($F = 3.7, p = .070, \eta^2_p = 0.16$; see Table 25). Children in the low CYRM group increased internalizing behavior across time in both the intervention and control groups, while high CYRM group decreased internalizing behavior in both intervention
and control groups. This means that there may be a difference in the relationship between intervention group and internalizing behavior based on resiliency.

Table 25: Analysis of internalizing pre-post differences moderated by CYRM group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>ηp²</th>
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</thead>
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<td>1.3</td>
<td>.264</td>
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<tr>
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<td>Intervention</td>
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<td>4.4</td>
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<td>0.32</td>
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<td>Control</td>
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<td>4.9</td>
<td>-0.5</td>
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<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Figure 19: Internalizing score change over time by CYRM group

The fourth analysis examined the impact of the CYRM grouped variable on the relationship between the intervention group and externalizing behavior. Analysis identified no evidence of moderation. When resilience was operationalized as a two group variable, there was no significant change in externalizing behavior across time (F = 1.6, p = .221, ηp² = 0.08), there was not a significant time by cohort interaction(F = 0.3, p
= .585, \( \eta^2_p = 0.02 \)). Although not significant at the \( \alpha = 0.05 \) convention, there was a marginally significant time by resilience group interaction (F = 3.1, p = .096, \( \eta^2_p = 0.14 \)). Children in the low CYRM group increased externalizing behavior across time, while the high CYRM group decreased. This indicates that resiliency may be a protective factor for externalizing behavior (see Table 26 and Figure 20). In addition, there was not a significant time by intervention group by resilience group interaction (F = 0.1, p = .725, \( \eta^2_p = 0.01 \); see Table 26).

Table 26: Analyses of externalizing pre-post differences moderated by CYRM group

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>( \eta^2_p )</th>
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<td>3.4</td>
<td>3.1</td>
<td>1.6</td>
<td>.221</td>
<td>0.08</td>
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<td></td>
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<tr>
<td>Intervention Control</td>
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<td>4.4</td>
<td>0.3</td>
<td>.585</td>
<td>0.02</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
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<td>16</td>
<td>3.9</td>
<td>5.0</td>
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<td>3.1</td>
<td>.096</td>
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<td>5.0</td>
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<tr>
<td>Extern * Low CYRM * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Intervention Control</td>
<td>14</td>
<td>4.5</td>
<td>5.9</td>
<td>0.1</td>
<td>.725</td>
<td>0.01</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
<td>3.2</td>
<td>4.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>2</td>
<td>2.0</td>
<td>-0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extern * High CYRM * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention Control</td>
<td>8</td>
<td>3.7</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>2</td>
<td>2.0</td>
<td>-0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

Figure 20: Externalizing score change by CYRM group
The fifth analysis examined the impact of the DESSA grouped variable on the relationship between the intervention group and internalizing behavior. When resilience was operationalized as a two group variable, although not significant at the $\alpha=0.05$ convention, there was a marginally significant change in internalizing behavior across time ($F = 3.9$, $p = .063$, $\eta^2_p = 0.17$), but there was not a significant time by cohort ($F = 2.6$, $p = .127$, $\eta^2_p = 0.12$). While not significant at the $\alpha = 0.05$ convention, there was a marginally significant time by resilience group interaction ($F = 3.4$, $p = .081$, $\eta^2_p = 0.15$). Children in the low DESSA group increased internalizing behavior across time, while the high DESSA group decreased. This indicates that strengths may be a protective factor for internalizing behavior (see Table 27 and Figure 21). In addition, there was not a significant time by intervention group by resilience group interaction ($F = 2.4$, $p = .142$, $\eta^2_p = 0.11$; see Table 27).

| Table 27: Analyses of internalizing pre-post differences moderated by DESSA group |
|---------------------------------|---|---|---|---|---|---|
| Intern                         | N | Pre | Post | $F$ | $p$ | $\eta^2_p$ |
| Intern * Cohort                |   |     |      |    |     |            |
| Intervention                   | 22 | 6.0 | 6.2  | 2.6 | .127 | 0.12       |
| Control                        | 4  | 3.9 | 0.8  |    |     |            |
| Intern * DESSA                 |   |     |      |    |     |            |
| Low                            | 15 | 4.0 | 4.4  | 3.4 | .081 | 0.15       |
| High                           | 11 | 5.8 | 2.7  |    |     |            |
| Intern * Low DESSA * Cohort    |   |     |      |    |     |            |
| Intervention                   | 12 | 7.0 | 7.5  | 2.4 | .142 | 0.11       |
| Control                        | 3  | 1.1 | 1.3  |    |     |            |
| Intern * High DESSA * Cohort   |   |     |      |    |     |            |
| Intervention                   | 10 | 4.9 | 5.0  |    |     |            |
| Control                        | 1  | 6.7 | 0.4  |    |     |            |

Note: values are marginal means adjusted for covariates
The sixth and final analysis examined the impact of the DESSA grouped variable on the relationship between intervention group and externalizing behavior. Analysis identified no evidence of moderation. When resilience was operationalized as a two group variable, there was no significant change in externalizing behavior across time ($F = 1.9$, $p = .187$, $\eta^2 = 0.09$), there was not a significant time by cohort ($F = 0.1$, $p = .756$, $\eta^2 = 0.01$), or time by resilience group interaction ($F = 0.3$, $p = .591$, $\eta^2 = 0.02$). In addition, there was not a significant time by intervention group by resilience group interaction ($F = 0.5$, $p = .507$, $\eta^2 = 0.02$; see Table 28).

Figure 21: Internalizing score change over time by DESSA group
Table 28: Analyses of externalizing pre-post differences moderated by DESSA group

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta^2_p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extern</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extern * Cohort</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>22</td>
<td>4.1</td>
<td>4.5</td>
<td>1.9</td>
<td>.187</td>
<td>0.09</td>
</tr>
<tr>
<td>Control</td>
<td>4</td>
<td>1.9</td>
<td>1.7</td>
<td></td>
<td>.756</td>
<td>0.01</td>
</tr>
<tr>
<td>Extern * DESSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>15</td>
<td>4.3</td>
<td>4.9</td>
<td></td>
<td>.3</td>
<td>0.02</td>
</tr>
<tr>
<td>High</td>
<td>11</td>
<td>1.7</td>
<td>1.3</td>
<td></td>
<td>.591</td>
<td>0.02</td>
</tr>
<tr>
<td>Extern * Low DESSA * Cohort</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>12</td>
<td>4.7</td>
<td>6.3</td>
<td></td>
<td>.5</td>
<td>0.02</td>
</tr>
<tr>
<td>Control</td>
<td>3</td>
<td>3.9</td>
<td>3.5</td>
<td></td>
<td>.507</td>
<td>0.02</td>
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<tr>
<td>Extern * High DESSA * Cohort</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention</td>
<td>10</td>
<td>3.5</td>
<td>2.8</td>
<td></td>
<td>.5</td>
<td>0.02</td>
</tr>
<tr>
<td>Control</td>
<td>1</td>
<td>0.0</td>
<td>-0.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates

4.4.7 Aim 7: Understand the impact of repeated attendance of TMAS on resiliency outcomes in school aged military children.

Aim 7 examined the impact of prior TMAS attendance (prior attendance vs no prior attendance) on the relationship resiliency change across time. Only those that attended TMAS were included in this analyses. Analysis of covariance was used to examine pre- and post-test differences. Attendance group was the between group factor. Covariates included were CUTH group, nonmilitary parent’s age and employment status.

In this analysis, all three resilience measures were examined in separate analyses. Analysis using ER11 scores identified no significant change across time ($F = 0.3, p = .614, \eta^2_p = 0.01$). Although not significant at the $\alpha = 0.05$ convention, there was a marginally significant impact of prior intervention attendance on resilience change across time ($F = 4.1, p = .055, \eta^2_p = 0.16$). Those that had previously attended TMAS decreased ego-resiliency while those who were first time attendees increased over time (see Table 29 and Figure 22). This result was not confirmed when using the CYRM resilience measure. In the analysis of CYRM, covariates included CUTH group, nonmilitary parent’s age and employment status. Analysis of CYRM yielded a non-significant
impact of prior attendance on resilience change across time ($F = 1.2$, $p = .276$, $\eta_p^2 = 0.05$) and a non-significant attendance group by time interaction ($F = 0.0$, $p = .872$, $\eta_p^2 = 0.00$). When using the DESSA measure of resiliency, the ER11 results were supported.

Covariates in the analysis of resilience using DESSA were CUTH group, nonmilitary parent’s age and employment status. In this analysis, there was a significant change of resilience across time ($F = 5.2$, $p = .032$, $\eta_p^2 = 0.18$) and there was a marginally significant attendance group by time interaction ($F = 3.2$, $p = .089$, $\eta_p^2 = 0.12$). Similarly to ego-resiliency, DESSA scores increased for first time attendees after the intervention, and decreased for repeat attendees. This may indicate that repeated attendance of TMAS doesn’t have greater impacts on short term strengths outcomes (see Table 29 and Figure 23).

Table 29: Analyses of ER11, CYRM, and DESSA pre-post differences

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ER11</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Attend</td>
<td>27</td>
<td>6.6</td>
<td>6.2</td>
<td>.3</td>
<td>.614</td>
<td>0.01</td>
</tr>
<tr>
<td>Never</td>
<td>4</td>
<td>6.5</td>
<td>5.5</td>
<td>4.1</td>
<td>.055</td>
<td>0.16</td>
</tr>
<tr>
<td><strong>CYRM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Attend</td>
<td>27</td>
<td>22.5</td>
<td>22.9</td>
<td>1.2</td>
<td>.276</td>
<td>0.05</td>
</tr>
<tr>
<td>Never</td>
<td>23</td>
<td>22.6</td>
<td>23.1</td>
<td>0.0</td>
<td>.872</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>DESSA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Attend</td>
<td>28</td>
<td>56.6</td>
<td>54.5</td>
<td>5.2</td>
<td>.032</td>
<td>0.18</td>
</tr>
<tr>
<td>Never</td>
<td>5</td>
<td>57.2</td>
<td>51.6</td>
<td>3.2</td>
<td>.089</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Note: values are marginal means adjusted for covariates
4.4.8 Aim 8: Understand the impact of repeated attendance of TMAS in increasing home literacy environment.

Aim 8 examined the impact of prior TMAS attendance (prior attendance vs no prior attendance) on the relationship home literacy environment (HLE) change across time. Only those that attended TMAS (intervention group) were included in this analysis.
Analysis of covariance was used to examine pre- and post-test differences. Attendance group was the between group factor. Covariates included was CUTH group.

Analysis using HLE scores identified no significant change across time ($F = 0.6, p = .442, \eta^2 = 0.03$) and a non-significant attendance group by time interaction ($F = 0.5, p = .492, \eta^2 = 0.02$; see Table 30).

**Table 30: Analysis of HLE pre-post differences**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Pre</th>
<th>Post</th>
<th>F</th>
<th>p</th>
<th>\eta^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLE</td>
<td>26</td>
<td>8.2</td>
<td>7.7</td>
<td>0.6</td>
<td>.442</td>
<td>0.03</td>
</tr>
<tr>
<td>HLE * Prior Attend</td>
<td>4</td>
<td>8.0</td>
<td>7.0</td>
<td>0.5</td>
<td>.492</td>
<td>0.02</td>
</tr>
<tr>
<td>Never Attend</td>
<td>22</td>
<td>8.5</td>
<td>8.4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.5 Intervention Fidelity

4.5.1 Analysis of Quantitative

These analyses examined the impact of the intervention fidelity (how the TMAS intervention scored as implemented) grouped variable on the relationship resiliency, problem behavior, or home literacy environment (HLE) change across time. Analysis included all available data for prior to TMAS and 6 week follow up, including the waitlist control group. All children in the analyses had attended TMAS. For more information about intervention fidelity methods, see sections 3.6.5 and 3.8.1. Analysis of covariance was used to examine pre- and post-test differences. Gender was the between group factor. Covariates included were CUTH group, intervention fidelity group, and nonmilitary parent’s age and employment status.

The first analysis examined the impact of the intervention fidelity grouped variable on the change in ER11 scores across time. In this analysis, covariates included were CUTH group, intervention fidelity group, and nonmilitary parents age and
employment status. Analysis identified no evidence of moderation. When intervention fidelity was operationalized as a two group variable, there was no significant change in ER11 scores across time \((F = 0.0, p = 0.879, \eta_p^2 = 0.00)\), and there was not a significant time by gender interaction \((F = 0.0, p = 0.931, \eta_p^2 = 0.00; \text{see Table 31})\).

The second analysis examined the impact of the intervention fidelity grouped variable on the change in CYRM scores across time. In this analysis, covariates included were nonmilitary parent age, intervention fidelity group, and CUTH group. When intervention fidelity was operationalized as a two group variable, although not significant at the 0.05 convention, there was a marginally significant impact of intervention fidelity implementation on resilience change across time \((F = 3.0, p = 0.098, \eta_p^2 = 0.12)\), but there was not a significant time by gender interaction \((F = 1.5, p = 0.235, \eta_p^2 = 0.06; \text{see Table 31})\). This result was not confirmed when using the ER11 or DESSA resilience measures.

The third analysis examined the impact of the intervention fidelity grouped variable on the change in DESSA scores across time. Covariates in this analysis were CUTH group, intervention fidelity group, and nonmilitary parent employment status. Analysis identified no evidence of moderation. When intervention fidelity was operationalized as a two group variable, there was no significant change in DESSA scores across time \((F = 0.0, p = 0.921, \eta_p^2 = 0.00)\), and there was not a significant time by gender interaction \((F = 1.4, p = 0.256, \eta_p^2 = 0.06; \text{see Table 31})\).

The fourth analysis examined the impact of the intervention fidelity grouped variable on the change in internalizing behavior scores across time. In this analysis, covariates included were CUTH group, intervention fidelity group, and nonmilitary parent age. Analysis identified no evidence of moderation. When intervention fidelity
was operationalizing as a two group variable, there was no significant change in
internalizing behavior across time (F = 0.8, p = .392, ηp² = 0.04), and there was not a
significant time by gender interaction (F = 0.8, p = .368, ηp² = 0.04, see Table 31).

The fifth analysis examined the impact of the intervention fidelity grouped
variable on the change in externalizing behavior across time. In this analysis, covariates
included were CUTH group, intervention fidelity group, and nonmilitary parent age.
Analysis identified no evidence of moderation. When intervention fidelity was
operationalized as a two group variable, there was no significant change in externalizing
behavior across time (F = 1.4, p = .254, ηp² = 0.06), and there was not a significant time
by gender interaction (F = 0.0, p = .839, ηp² = 0.00; see Table 31).

The sixth and final analysis examined the impact of the intervention fidelity
grouped variable on the change in home literacy environment across time. Covariates in
this analysis was CUTH group and intervention fidelity group. When intervention
fidelity was operationalized as a two group variable, although not significant at the 0.05
convention, there was a marginally significant impact of intervention fidelity
implementation in HLE score change across time (F = 4.1, p = .055, ηp² = 0.16), but there
was not a significant time by gender interaction (F = 0.2, p = .698, ηp² = 0.01; see Table
31).

| Table 31: Outcome variables and gender by intervention fidelity |
|-----------------|-----|-----|-----|-----|-----|-----|
| ER11            | N   | Pre | Post| F   | p   | ηp² |
| Female          | 18  | 6.6 | 6.9 | 0.0 | .931| 0.00|
| Male            | 9   | 6.2 | 6.5 | 0.0 | .931| 0.00|
| CYRM            | N   | Pre | Post| F   | p   | ηp² |
| Female          | 18  | 22.4| 23.2| 1.5 | .235| 0.06|
| Male            | 9   | 22.2| 22.3| 1.5 | .235| 0.06|

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DESSA
27 55.4 56.6 0.0 .921 0.00
DESSA * Gender
Female 18 56.2 55.6 1.4 .256 0.06
Male 9 54.6 57.6
HLE
26 8.0 8.5 4.1 .055 0.16
HLE * Gender
Female 17 8.2 8.9 0.2 .698 0.01
Male 9 7.7 8.0
Intern
26 5.4 7.4 0.8 .392 0.04
Intern * Gender
Female 17 4.9 5.8 0.8 .368 0.04
Male 9 5.8 8.9
Extern
26 3.9 4.7 1.4 .254 0.06
Extern * Gender
Female 17 3.8 4.7 0.0 .839 0.00
Male 9 4.0 4.6

Note: values are marginal means adjusted for covariates

To confirm this analysis, a regression was run using pre-test scores as the dependent, post-test scores as independent, and intervention fidelity scores as the 2nd entered independent variable. As with the ANCOVA, regressions including intervention fidelity were not statistically significant (all p values > 0.05; see Table 32).

Table 32: Regression of all outcome variables with intervention fidelity

<table>
<thead>
<tr>
<th>Model</th>
<th>β</th>
<th>p</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ER11 Pre</td>
<td>0.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* ER11 Post</td>
<td>0.70</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>2 ER11 Pre</td>
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<td>0.54</td>
</tr>
<tr>
<td>* ER11 Post</td>
<td>0.66</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>* InterFidel</td>
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<td>0.294</td>
<td></td>
</tr>
<tr>
<td>1 CYRM Pre</td>
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</tr>
<tr>
<td>* CYRM Post</td>
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</tr>
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<td>0.50</td>
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<tr>
<td>* CYRM Post</td>
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<td></td>
</tr>
<tr>
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<td>0.22</td>
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<tr>
<td>* DESSA Post</td>
<td>0.38</td>
<td>0.013</td>
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<td>0.23</td>
</tr>
<tr>
<td>* DESSA Post</td>
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<td>0.58</td>
</tr>
<tr>
<td>* HLE Post</td>
<td>0.76</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>
### 2 HLE Pre

| * HLE Post | 0.85 | 0.000 |
| * InterFidel | 0.09 | 0.435 |

### 1 Intern Pre

| * Intern Post | 0.38 | 0.034 |
| * Intern Post | 0.35 | 0.054 |

### 1 Extern Pre

| * Extern Post | 0.62 | 0.000 |

### 2 Intern Pre

| * Intern Post | 0.35 | 0.054 |

### 2 Extern Pre

| * Extern Post | 0.62 | 0.000 |

### * InterFidel

| 0.12 | 0.462 |

### 1 Extern Pre

| * Extern Post | 0.62 | 0.000 |

### * InterFidel

| 0.07 | 0.358 |

### 4.5.2 Field Observation

Description and summation of the field observation of the ten TMAS interventions follows. The TMAS intervention is described as a program for children aged 4-12, however, many children younger than 4 years of age were present, and for children 10 years of age and older, they appeared to be uninterested in the program. The height of engagement appeared to be those children aged 4-8 years.

A main tenant of the TMAS intervention is the large group reading, important aspects of such including that families sit together on the floor, there is a guest VIP reader, and the pages are projected while the book is read, but that the text is removed. Analysis of families sitting together on floor found that the majority of families did this at most interventions, but some parents or families chose not to, rather, they sat on available chairs. More fathers and young mothers sat on chairs than other groups. The guest reader VIP as an aspect of the intervention, where who the reader was gathered people to some of the TMAS events, and did not seem to have as much as an influence on other TMAS events. The projection of the book’s pages with text removed during reading was
mostly consistent across events. However, when there were not technical difficulties, sometimes the slides moved too fast, sometimes too slow. Often it had to do with the person and computer placement in the room in context to the reader. The situation was not perfect, but did allow for the children and families to see the book as it is being read.

The next important phase of the TMAS intervention is the discussion groups. Discussion groups are meant to have up to 8 groups at each event, each group of 8 to 12 children, with a guided discussion to bring out important points of the story, the children encouraged to independently reach a conclusion about the story, and volunteer scribes documenting the children’s responses. Regarding the group numbers, often there were only one or two groups, the most groups at any event were six. While the intention was to have groups sized of 8 to 12 children, many times the groups varied in size, but often there were 4 to 6 families in each group, with 4 to 10 children in the group. Often the groups were assigned at check in by asking the child what their favorite color, resulting in uneven distributions at some events. The success of the guided discussion to bring out salient points widely varied with the skill of the facilitator, the age of the children, and the talkativeness of the children. How successfully the children were encouraged to independently reach a conclusion about the story also varied with the environment. The volunteer scribes were meant to recording every child’s response, and some events used scribes, and they wrote every word each child said, some scribes wrote summaries, and some scribes wrote nothing. A few events didn’t use scribes, a Parent to Parent(P2P) team leader at Fort Bliss indicated that in her experience as a teacher, writing down everything a child says doesn’t help further the discussion, nor does it reinforce what needs to be reinforced for the children. The Fort Bliss P2P team leader instead lead small
group discussion where she sat on the floor with the children, and engaged them in a conversation about the book, using the Socratic method. All other discussion facilitators and scribes stood while the children and parents sat. The difference between Fort Bliss and the other discussion facilitators was more active engagement from the Fort Bliss group.

The activity phase of the TMAS intervention is meant to be related to the story, completed at the event or supplies provided for completion at home, and an easy activity to reproduce at home. Analysis of activities relating to story showed that all activities were related to the stories in some way, such as making something from the book (i.e. chocolate parachute from *Mercedes and the Chocolate Pilot*, or a paper pie from *How to Bake an American Pie*). Some were more tangentially related, such as creating a picture frame with animals, as paired with *Giraffe’s Can’t Dance*. The activity being completed at the TMAS event or having supplies provided for at home found that all events, except the one at the HUGs play group, completed an activity after the TMAS. The Montgomery, AL TMAS even sent participants home with a second craft. The activity being easy to reproduce at home showed that all supplies would be attainable by parents, however, some of the prep work was already done (i.e. cutting paper into strips or shapes), which would make replicating the craft at home more labor intensive. However, for a large event with many children, this prep work had to be done for the sake of time.

The final aspect of TMAS is the take home, where families leave with a copy of the book, educational handouts, and supplemental books. All TMAS’ sent participants home with a copy of the book read, one per family read, however, some individuals left Lackland AFB TMAS early, and did not receive their copy as copies were distributed
after the discussion groups. Providing families with educational handouts varied. Some of the TMAS’ pre packed bags with MCEC logos with the book and educational handouts (6 out of 10), while the rest provided the book, and then had handouts available on the sign-in table for parents to take as they would like. Providing families with supplemental books occurred at two TMAS’s where they provided a supplemental book produced by MCEC, targeting children who are moving, filled with activities, school related lists, and packing related lists. It is unclear how the non-book take homes influenced the intervention as they were not directly measured by Checking the Use of TMAS at Home (CUTH) measures.

How facilitators are trained is important for intervention fidelity. Training is meant to be a mandatory one-hour training prior to first facilitation and volunteer training. Mandatory one-hour training prior to first facilitation did occur for all P2P team members. It is important to note here that the term “facilitator” indicates those that are planning and executing the TMAS, not the discussion facilitators. P2P team members have been trained in TMAS at the National Training Seminar or at the annual MCEC training in Texas. Volunteer training is the training of the discussion facilitators and scribes and were variable across all TMAS’. Some TMAS had provided the discussion facilitators with the book and a list of questions, so that they could familiarize themselves and think of additional questions. Other TMAS’ discussion facilitators and scribes arrived and were provided just in time training for what they were expected to do. Discussion facilitators were often parents who had previously attended TMAS or other P2P events. Scribes were often teenaged children (6/10) of the P2P team or other
volunteer groups (2/10) on base. Scribes often received either no training or just in time training.

The appropriate selection of books for the TMAS is considered important for intervention success. There are 16 books in the TMAS curriculum with different positive psychology aspects. Books being chosen appropriately for the needs of the base was difficult to analyze. A few times the P2P teams indicated why the books were selected, such as *While You Were Away* for a base that was about to have battalions deploy, or *Odd Velvet* at a base that had had a bullying problem. Other TMAS’ didn’t seem to indicate why books were selected, other than the fact that they were popular books.

General observations from all TMAS’s were that the best readers were those that were parents themselves. Scribes often either wrote too much or not enough. Young children are unable to sit still for long enough for the intervention and are distracting to other children. Some parents choose to sit in chairs when they are there, even when asked not to by the P2P teams. Discussion facilitators often lacked skills for large group discussions.
CHAPTER 5

DISCUSSION

5.1 Introduction

In this chapter the results of this study are reviewed in the context of existing literature and strengths and weaknesses of the study design and implementation. The results regarding resiliency, home literacy environment, Child Behavior Checklist (CBCL) internalizing and externalizing behavior, and intervention fidelity analyses are presented and interpreted. Future research directions are presented, as are the findings and implications for nursing practice.

A major limitation must be noted regarding the interpretation of the results. Despite months of recruitment and seven military installations visited, the researcher failed to reach the control group sample size required for power. As such, there are times where only one parent-child dyad are in analysis comparisons. Despite this limitation, statistically significant and large effect size results were found.

5.2 Resiliency

Resiliency was measured using three instruments. The ego-resiliency Q-sort (ER11) asked how true descriptions were of the child, the Child and Youth Resilience Measure (CYRM) collected information about how the child perceives themselves, their caregivers, and their world, and the Deveraux Student Strengths Assessment (DESSA) assesses resiliency skills the child possesses. Using these different resiliency instruments provides a more complete picture of the effect the TMAS intervention has on children.

Regarding the main question of this study, how effective is the Tell Me A Story (TMAS) intervention at improving resiliency in school-aged military children, this
study’s results show that participants of TMAS increased ego-resiliency (ER11) scores over time, while the control group decreased. This finding had a very large effect size. This means the TMAS intervention had a positive impact on the resiliency scores of children in the intervention group. Similar to ego-resiliency results, the intervention group increased resiliency (CRYM) scores over time, while the control group decreased, this result had a medium effect size. This confirms the results earlier reported regarding ego-resiliency, that the TMAS intervention had a positive impact on the resiliency scores of children in the intervention group. Strengths (DESSA) results were not clinically or statistically significant for intervention participation.

Several other resiliency interventions described in the literature also found that their intervention groups had increases in resiliency compared to the control group, indicating that their resiliency intervention was effective at increasing resiliency (Goodman, et al., 2015; Greenbaum & Javadani, 2017; Sim, 2015). A resiliency intervention study showed improvements in resiliency for the intervention group compared to the control group (Kummabutr, Buaboon, & Sinsiri, 2017). Researchers found there are greater short term resiliency outcomes with a more intensive intervention, but with a decrease over time for long term effects. However, the long term effects that did occur were stronger for the intervention group than the control group (Kummabutr, Buaboon, & Sinsiri, 2017). This indicates that for the TMAS intervention, it may be possible for long term resiliency outcomes to be maintained for the intervention group.

This nurse researcher found there may be a gender effect with resiliency outcomes. Boys decreased ego-resiliency scores while girls remained steady over time. However, with resiliency scores, girls increased over time, while boys decreased. Both
these finding have large effect sizes. This may indicate that girls are overall more resilient than boys. These findings are in agreement with non-experimental study, where researchers found that male gender was significantly associated with low ego-resiliency (Oshri, Rogosch, Burnette, & Cicchetti, 2011). Strengths results were not significant for gender effects.

This study showed a statistically significant and large effect size for the interaction between gender, intervention group, and resiliency. These findings show that intervention group girls have a slight increase in ego-resiliency scores, while control group girls have a slight decrease over time. Intervention group boys also had a slight increase in ego-resiliency scores, while control group boys decreased scores over time. The differences seen in gender effects indicate that boys may benefit in resiliency from the TMAS intervention more than girls. This finding further explains the previously discussed finding that males decrease ego-resiliency scores while female scores remain steady. While resiliency results were only moderately significant (p value less than 0.10) and there was a medium effect size, the results were similar to ego-resiliency. Intervention group girls increased over time, at a greater rate of increasing mean scores than the increase in scores for control group girls. Intervention group boys’ resiliency scores remained steady, while the control group boys had large drops in scores over time. This agreement between ego-resiliency and resiliency results is helpful for validation of results. Other resiliency research findings indicate that boys demonstrate higher resiliency when parents spend more time with their children and support their school work (Fayyad, et al., 2017). Although the TMAS intervention is similar to some school’s curriculum for homework, and does encourage more parent-child time, there may be
more covariates, such as schoolwork related information, to explain this finding that were not explored in this study. Another resiliency intervention research study found a delayed positive effect for girl’s ego-resiliency seven years after the intervention (Stams, et al., 2001). This indicates that it is possible that effects of this intervention may not be noticeable for girls in the short-term, but may have long-term effects. Strengths results were not significant for intervention participation, gender, and time.

Interaction between resiliency and home literacy environment (HLE) results shows several statistically significant and large effect sizes. Children in the low HLE group decreased ego-resiliency scores, while the high HLE group remained steady. To explain the phenomena further, the study results show that low HLE intervention group children experienced an increase in ego-resiliency over time. Children in the high HLE intervention group only had a slight increase. In both the low HLE control group and high HLE control group children decreased ego-resiliency over time. Children in the high initial HLE group improve ego-resiliency score when exposed to TMAS. This improvement was not seen for children in the low HLE group. This indicates that low initial home literacy environment scorers experience improvement of ego-resiliency when exposed to TMAS that they would not have experienced if they did not attend. The overall ego-resiliency score as modified by baseline HLE scores, when not examining the direct effect of intervention group, does not accurately portray the positive influence of the TMAS intervention on ego-resiliency scores. This indicates that exposure to TMAS is a stronger indicator of ego-resiliency outcomes than initial HLE score. Similar to ego-resiliency results, resiliency results were moderately significant (p values less than 0.10) with medium effect size, showing that children in the low HLE group decreased
resiliency scores over time, while the high HLE group increased. This shows that resiliency is in agreement with ego-resiliency. Strengths was not statistically significant when examining this relationship.

Prior TMAS attendance and resiliency have a marginally significant (p values less than 0.10) and medium effect size. Children that had previously attended the TMAS intervention decreased ego-resiliency scores over time. First time attendees increased ego-resiliency. No significant results were found for resiliency. Strengths scale outcomes had opposite effect as ego-resiliency, with a marginally significant and medium effect side. Children who had previously attended decreased strengths scores over time, and new attendees increased strengths scores. This indicated that repeated exposure to the TMAS intervention is not significantly influential for most resiliency outcomes.

The three resiliency instruments have different defining contexts, and understanding the differences in the underlying principles of each of the three instruments may help explain the differences found in these results. ER11 is based on the principle of ego-resiliency. Ego-resiliency is defined as resourceful adaptation to changes to an individual’s environment, and the ability to use problem solving to fit situational demands and behavioral possibility (Block & Block, 1980). CYRM is based on Ungar’s ecological definition of resilience as a multi-dimensional process which enables positive growth from the emotional and physical ability of the individual and the social and cultural resources available (Ungar, 2012). Finally, the resiliency perspective which underscores the DESSA instrument is that of social-emotional competencies (Naglieri, Goldstein, & LeBuffe, 2010). While these definitions are very similar, Ungar’s focus is on the internal and external processes to enable growth, while Block and Block focus on
the actual adaptations that occur, and Naglieri and colleagues focus on skills that a child currently possesses. These variations of definition for resilience mirror the variation in results from ER11, CYRM, and DESSA. The intention for these three instruments was to triangulate resiliency; however, the DESSA did not agree with either of the two instruments in any of the results. By examining these underlying principles it can be assumed that the TMAS intervention promotes resiliency through resourceful adaptations and some internal and external processes of a child’s growth through cultural and social resources. These results indicate that the TMAS intervention does not promote skills in the child as an aspect of resiliency.

5.3 Home Literacy Environment

Although not significant at the typical convention \( \alpha = 0.05 \), there was a marginally significant interaction was identified between exposure to the TMAS intervention and home literacy environment. Children in the intervention group experienced a slight increase in HLE score over time, while the control group decreased. This is in agreement with literacy intervention study, indicating that the more the families used their program, the greater the change in home literacy environment (Weitzman, Roy, Walls, & Tomlin, 2004). Other studies found that more parent-child interaction and reduced media use lead to improved child language outcomes (Liebeskind, Piotrowski, Lapierre, & Linebarger, 2013; Sénéchal & LeFevre, 2014).

The non-significant findings in this study regarding home literacy environment could be explained by another study, where finding show that the effect of home literacy environment is stronger at age 3 than at age 7 for measuring child outcomes (Hart, et al., 2009). Since most participants of this study were 7 years of age, it is reasonable that less
of an impact in home literacy environment would occur for those participants. Hart and colleagues argued that home literacy environment is a proxy for the overall home environment and parental investment in their child’s learning (2009). The results of this study could be further explained by the work of Torppa and colleagues, who found that when fathers read less with their children, the child is more likely to have decreased skills in reading, spelling, or both (2017). Due to the majority of military members being male, and number of deployments which occurred during the study, it is possible that father absences had a larger impact on child outcomes and home literacy environment than seen in the scope of this study. This study did not ascertain which parent was the military member (mother, father, or same gender parents), nor did it collect data on who was reading with the child each week, simply how much reading was occurring. It is possible that due to the lack of those measurements, the sensitivity required regarding home literacy environment changes were unable to be determined.

Interestingly, there are studies which utilized a single question to assess home literacy environment, that of the number of children’s books in the home (Driessnack, Chung, Perkhounkova, & Hein, 2014). While the pretest HLE does ask the number of books in the home for this study, it does not differentiate between children’s and adult books; like the work of Liebeskind, Piotrowski, Lapierre, and Linebarger (2013) where researchers asked for both the number of children and adult books in the home, as well as other measures of home literacy environment which were also measured in the HLE pre-test.
Home literacy environment scores were not significant when considering prior attendance. This indicates that repeated exposure to the TMAS intervention is not influential for short-term home literacy environment outcomes.

5.4 Child Behavior Checklist Internalizing Behavior

Child Behavior Checklist (CBCL) internalizing behavior is defined as somaticizing, anxious, and withdrawn behavior. A marginally significant (p value less than 0.10) and medium effect size result show that girls decreased internalizing scores over time, while boys increased. A decrease in score indicates a reduction in behavior. This finding is consistent with current studies in the literature (Rita, et al., 2017). Statistically significant and medium effect size show that intervention group girls increase internalizing behavior while control group girls decrease, contrary to expected outcomes. Boys followed the expected pattern, with the intervention group boys decreasing over time and the control group boys increasing. This indicates that for internalizing behavior, boys benefit more from exposure to the TMAS intervention than girls. This finding is partially in agreement with the work of Sim, who found that overall behavior problems decreased in their intervention group compared to their control group (2015). However, this is in contrast to the results of another study where there was a positive effect on internalizing behavior for both girls and boys when exposed to an attachment-based family intervention (Stams, et al., 2001). It is possible that due to the small sample size that all the girls in the sample had other factors influencing their internalizing behavior that are not measured here.

There also may be more unexplained factors affecting the TMAS intervention outcomes, as another study indicated that a mother’s postpartum depression at birth can
affect a child’s internalizing behavior when they are eight years old (Closa-Monasterolo, et al., 2017). Other studies have found that a child’s early problems with sensory processing, sleeping problems, authoritarian parenting, and single parenthood were associated with higher internalizing behavior scores (Fuentes, Salas, Bernedo, & Garcia-Martin, 2015; Rita, et al. 2017). Because these variables were not examined in the scope of this study, it is impossible to know how such variables impacted the outcomes.

Internalizing behavior score change as moderated by initial home literacy environment scores were not significant. However, a result with that was not significant (p = 0.105) and had a medium effect size, found that the intervention group low HLE group decreased internalizing scores and the high HLE group had a slight increase. The control low HLE group increased internalizing scores, while the high HLE group decreased. This indicates that better home literacy environment may be protective for internalizing behavior. It also indicates that exposure to TMAS for those with high HLE scores may be less beneficial for internalizing behavior.

Internalizing behavior score changes by intervention group and ego-resiliency group was not significant. However, internalizing behavior scores moderated by resiliency group had a very large effect size. Overall, children in the low resiliency group increased internalizing behavior over time and the high resiliency group decreased. This means that children with more resiliency have lower levels of internalizing behavior across time. Regarding strengths, there was a marginally significant (p value less than 0.10) and medium effect size. For children in the high strengths group, there was a decrease over time in internalizing behavior, while the low strengths group increased. This is in agreement with the resiliency moderation results. These findings indicate that
the greater a child’s resilience, the less internalizing behavior demonstrated. These results also show the relationship between resiliency and problem behavior is inverse. Also, this shows that strengths and resiliency scores are related to problem behavior outcomes. A decrease in internalizing behavior is a positive finding, as is a high resiliency score. The relationship between strengths, resiliency, and internalizing behavior, but not ego-resiliency scores, indicates that social-competencies, and the processes of personal growth are more related to internalizing behavior than adaptation and problem solving.

This is further illustrated in the results of internalizing behavior score moderated by ending resiliency scores. For internalizing behavior by intervention group by resiliency score there as a marginally significant (p values less than 0.10) and medium effect size. Children in the low resiliency intervention group increased internalizing behavior compared the high resiliency intervention group who decreased. Children in the low resiliency control group increased internalizing behavior over time, while the high resiliency control group decreased. Again, this reinforces the inverse relationship of resilience and behavior, made stronger by the exposure to the TMAS intervention. These results show that resiliency may predict problem behavior outcomes better than exposure to the TMAS intervention. Children with more resiliency may decrease internalizing behavior whether or not they attended the TMAS intervention. The opposite is true of those with less resiliency, they may increase internalizing behavior in both intervention and control groups.

The results of another study could help explain this study’s finding, as their results indicated that there was a high level of children’s internalizing and externalizing
behavior problems when parents have low levels of health-related quality of life scores (Choo, et al., 2017). Further, an additional study’s results indicate that children with lower economic status were more likely to have higher internalizing behaviors, despite their finding that high resilience scores were related to low behavior scores (Kim & Im, 2013). This indicates that there may be factors contributing to the resiliency - internalizing behavior relationship that is not seen due to the lack of measurement of potentially influential variables.

5.5 Child Behavior Checklist Externalizing Behavior

Externalizing behavior is defined as rule breaking and aggressive behaviors. This study’s results indicate a gender effect with externalizing behaviors with a medium effect size. Overall, girls decreased externalizing behavior scores, while boys increased scores over time. This finding is consistent with the findings of prior studies (Enoch, et al., 2016; Lee & Ludington, 2016; Rita, et al., 2017; Stams, et al., 2001), that boys have higher levels of externalizing behavior than girls.

When modeling by exposure to the TMAS interaction and gender, the interaction found was significant with a large effect size. Externalizing behavior scores of both girls and boys in the intervention group increased slightly over time. This is contrary to the expected results. However, the control group shows that externalizing behavior scores increase for boys, while decreasing for girls. This finding further clarifies the gender effect earlier discussed. This indicates that the TMAS intervention may not have an effect on externalizing behavior for boys.

Externalizing behavior scores may be influenced by exposure to the TMAS intervention and initial home literacy environment score. In with a marginally significant
finding (p value less than 0.10) and a medium effect size, children in the low HLE intervention group increased externalizing behavior score. This indicates that families with less reading at home may have more externalizing behaviors, even when exposed to the TMAS intervention. Children in the low HLE control group increased externalizing behavior scores over time at a greater rate than those in the low HLE intervention group, with a medium effect size. Children with high HLE intervention group increased externalizing behavior and the high HLE control group decreased. This is contrary to expected outcomes. This finding indicates that the TMAS intervention did not influence externalizing behavior, especially when considering home literacy environment. This finding may be presenting this way due to the small sample size.

A bibliotherapy study, structured similarly to this study, found that there was a significant time by intervention group effect for CBCL externalizing, where those in the intervention group reported improvements in contrast to the control group (Hahlweg, Heinrichs, Kuschel, & Feldmann, 2008). In the literature, another resiliency intervention study found that positive parenting by grandparents influenced positive child behavior in grandchildren (Joen & Neppl, 2015). Skills learned at the TMAS intervention are aspects of positive parenting, and therefore have the potential to have long term and multigenerational effects. In contrast, other studies have results indicating that increases in externalizing behavior is in relation to criticism/ rejection by parents, authoritarian parenting, and permissive parenting (Fuentes, et al. 2015). Examples of other such influencing variables are from another study that showed externalizing behaviors are related to unemployed single parents with lower education levels, living in rented or assisted housing (Alvi, Roberts, & DeGrace, 2017). This indicates that, like home
literature environment, when other aspects of the home life are changed for the child, there are changes in child problem behavior outcomes. The TMAS intervention is one possible intervention to affect methods of parenting, to engage parents and children to come together over a book, and bring the story into their lives.

There were marginally significant (p value less than 0.10) and medium effect size interactions between externalizing behavior and initial resiliency score. Overall, children in the low ego-resiliency group increased externalizing behavior over time. The high ego-resiliency group decreased externalizing behavior. The interaction between externalizing behavior change over time and ending resiliency score results were the same as ego-resiliency findings. This finding is suggestive of agreement with the findings of a resiliency research study, showing that internalizing and externalizing behavior and resiliency outcomes are inverse (Deblinger, Runyon, & Steer, 2014), as well as findings other studies show that ego-resiliency was a significant co-variable for both internalizing and externalizing behaviors (Kim & Im, 2013; Stams, et al., 2001). Kim and Im also found that economic status, school achievement, and resilience were negatively correlated externalizing behavior scores (2013). This indicates that there are many variables not examined in this study that could account for results in this analysis. Externalizing behavior by strengths group was not statistically or clinically significant.

### 5.6 Intervention Fidelity

In this section, intervention fidelity analyses are discussed. The ten TMAS interventions observed, which determined the intervention fidelity score, are discussed in the context of the TMAS field manual. Each aspect of the TMAS intervention as observed (i.e. reading group, discussion, activity, take homes) will be discussed.
Resiliency and HLE were found to be marginally significant (p value less than 0.10) when controlling for intervention fidelity. These findings differed from the findings for Aims 1 and 2, indicating that intervention fidelity does have an effect. There were additional differences from the aims analyses, included that the intervention fidelity results did not find ego-resiliency by gender or resiliency by gender interactions to be significant. Regarding differences from aim 3 were that internalizing across time, internalizing by gender interaction, and externalizing by gender interaction were not significant. Intervention fidelity may have played a role in influencing how well the participants used the TMAS intervention in their own home. Specifically regarding to reading behaviors and positive growth.

Implementation of fidelity difficulties were varied. One challenge was engagement of children younger than the target audience, and children older than 10 years of age lacking interest in the program. Another challenge was parent engagement, made more difficult by parents sitting separately from their children and using mobile devices. A third challenge was the skill of the discussion volunteer and scribe. If not already trained in small group facilitation, a just-in-time training is rarely enough to get difficult groups of parents and children talking, or talking on the right topic. VIP readers often were skilled only if they were parents, non-parent readers were less likely to read slowly, and engage the audience in the story.

5.7 Possible TMAS Implementation Changes

After attending ten TMAS interventions by eight Parent to Parent groups, there are a few suggestions for improvement. These suggestions are intended to increase participant understanding of underlying principles of TMAS, leading to possible better
use of TMAS at home. There are three main suggestions: remove all chairs from reading area, remove the role of the scribe and reduce the role of the discussion facilitator, and to provide alternate activity for those children too young to participate in TMAS.

The first suggestion is the removal of all chairs from the reading room, but having them available for those who are unable to sit on the floor for medical reasons (pregnancy, age, infirmity). This suggestion is due to the distance and distraction seen by parents who choose to sit in available chairs, often looking at mobile devices, during the reading, rather than engaging in the activity with their children.

The next suggestion regarding how the discussion section is handled, to remove the role of scribe and reduce the role of facilitator. This is due to the inconsistency of the scribes use and training, and the inconsistency of the skill of the facilitator to guide discussions. Instead, it is suggested that book discussion questions are pre-printed on index cards, to be passed out to parents in each discussion group. During the discussion, parents ask the questions of their children and other children. The discussion facilitator keeps things moving, but doesn’t ask questions themselves. This is intended to give parents the opportunity to practice how to ask these questions. This change would help parents to be more actively engaged in the discussion, and would not rely as much on a facilitator’s skills at getting a group to participate. Parents, knowing their children, would be able to engage their children in the discussion rather than an adult who may or may not know the child.

The final suggestion is to organize groups by age. One of the most profound observations from all the TMAS events was that those children that were too young for the intervention (infant and toddlers) would become restless and cause distractions,
possibly lessening the impact of the intervention for the target audience. Some parents would bring their children that were too young because they also had children that were older, but often parents only brought their toddlers. While a literacy intervention is important for these parents as well, TMAS is not it at this time. MCEC has another intervention for toddlers, called Early Literacy. This suggestion requires more change to the intervention than the previous two. Either more marketing needs to be done indicating how the TMAS is not appropriate for very young children, or a separate area needs to be set up for these children. Given MCEC’s policy to never turn a family away, the second choice is more in line with MCEC’s mission and vision. For families that arrive to TMAS with children that are younger than 4, a younger group could be set up in a different space in the building with a different activity, such as Early Literacy. Parents with children in both age brackets can choose to split up or keep kids in one area or another. Another option is to provide child care for children too young to participate but whose parents still want to learn TMAS skills. That is something those P2P teens who have been volunteering as scribes could still volunteer to do and provide an important support role.

5.8 Future Research Directions

Future research into the TMAS intervention should be conducted. Now that limitations of ER11, CYRM, and DESSA are known, the next research study can better use ER11 and CYRM as complementary tools.

A possible aspect to be added to future research is to provide parents a reading log as they leave TMAS. Parents would complete the log with each reading episode, indicating the day and date, time spent reading, type of book, who read aloud (mother,
father, or child), and what topics were discussed. This log could be used as a participant
diary, and used to measure intervention fidelity, as well as an aspect of the intervention to
prompt parents to use all the TMAS tools.

Another aspect regarding intervention fidelity could be having P2P teams that
facilitate TMAS fill out fidelity questionnaires.

More rigorous recruitment of the control group must be conducted in future
studies, to better examine those with no attention. Possibly, using an intervention
prospective cohort method, where all participants are recruited as waitlist control
members, and are their own controls.

5.9 Implications for Nursing Practice

Resiliency interventions are a tool for nurses to use in a community setting. In the
quest for a healthy population, interventions with families and children are paramount.
Wellness and illness prevention is something that is best started early in life, for life long
healthy habits. Resiliency interventions are at the core of that community wellness
initiative.

Nurses who foster TMAS, and programs like it, can collaborate with families to
develop stronger, more resilient children. This in turn creates an environment that
children can learn and grow to use the resilience process and the ecology around them to
the best of their abilities. Through resilience interventions like TMAS, children become
more resilient. Resilient children become resilient adults.

It is this nurse researcher’s firmly held belief that resilience is a protective shield
in the world of chronic illness and injury. Resilience has the potential to prevent
diabetes, heart disease, cancer, and preventative traumas. By using resiliency interventions with children, nurses can help children stay healthy throughout their lives.

5.10 Limitations

5.10.1 Study Validity Concerns

Internal validity relates to the likelihood that the findings are due to the intervention and no other causes. One way the internal validity of this study was sought was through the use of the waitlist control group. A traditional control group would not be ethically appropriate due to the needs of this population. The population, military children, are under increasing stress — as described in chapter 2 — and withholding an intervention believed to be beneficial would be unethical. Due to the apparent needs of this population as described in the literature in chapter 2, a waitlist control group assisted with protection of the results from historical and maturational biases. Historical bias, for example, could be an unforeseen event that occurs during the proposed project’s timeline. By designing this study with a waitlist control group, there was an increased chance that changes not due to the intervention would occur in both groups. However, it was possible that an event may occur on one base, or local supporting community without occurring on another base, therefore affecting historical bias.

Maturational bias, for example, could be the child or parents developing more resilient behavior over time as part of normal psychologic development, not caused by the intervention. With the waitlist control group composed of a similar population as the intervention group, any maturational improvement in resiliency behavior would be accounted for. The waitlist control group provided data regarding what outcomes occur
without exposure to the TMAS intervention. This means that in the waitlist control group, military children either will or will not change similarly to the intervention group.

Instrumentation bias was avoided via the use of psychometrically tested instruments. All instruments (ER11, DESSA, CYRM, CBCL, CHIP, and HLE-P) used to measure subject responses have prior reported Cronbach alphas ranging .76 to .96. Instruments with reported Cronbach alpha of below .7 are of concern regarding internal consistency. The instruments in this study have been used with similar populations and to measure similar outcomes for other resiliency promotion or bibliotherapy programs. Parents completed the same instruments on the same website and therefore it is assumed they will have the same level of observer skills for recording data.

Selection bias between the comparison groups was avoided through recruitment of a waitlist control group that is similar to the intervention group in their desire for the intervention.

Resentful demoralization of the no-treatment group bias was avoided due to the waitlist control nature of the design, as the control group will receive the TMAS intervention, and the bases are geographically separate, so it is unlikely that a member of the waitlist control group will witness the TMAS intervention and become disappointed that they have not received it yet. However, with the addition of the comparison group, there is possibility of resentful demoralization of the comparison group. Demographic information was collected to identify confounders and control for them in analysis.

External validity was sought through the pre-post quasi-experimental design. The reactive effects of testing mean that since a pre-test occurred, findings may not be generalizable to those who do not have baseline data collected. However, without a pre-
test, internal validity of the design would not be maintained, and the findings would not be able to determine if there was a change from baseline. Interaction effects between selection and the TMAS intervention means that findings are not generalizable to those who have different characteristics than the military children and their parents who were recruited. Similarly, interaction effects of setting and the TMAS intervention means that findings may not be generalizable to those who are not associated with a military installation. The interaction of history and the TMAS intervention mean that as factors such as technology and deployment pace changes, the findings may not be generalizable in the future. The reactive effects of experimental arrangements mean that since participants know they were study subjects the findings may not be generalizable to persons not in a study. With all the above external validity concerns under consideration, the results of this study is generalizable to active duty military members, military spouses, and military children aged 6 to 10 who live on or near military installations in the United States.

5.10.2 Study Strengths

The use of multiple indicators of resiliency behaviors (DESSA, CYRM, and ER11) provides robustness to potential findings. Through not relying on a single measure of resiliency, the rigor of this study was strengthened. The DESSA measures resilient strengths of the child, the CYRM measures the way the child sees themselves, their caregivers, and the world around them, and the ER11 asks how true descriptions of behavior are for each child. These measures collected data on resiliency behaviors in slightly different ways, and therefore were more likely to elicit true picture of the child’s behaviors than a single measure alone. Despite the fact that only two measures (ER11,
CYRM) proved useful in the final analysis, that could not have been known in the planning of this study and the design of using three measures to triangulate resiliency is a valid plan.

The pre-post and waitlist control design provided data to demonstrate that a change occurred between and between-groups. This is a strength of this study because the main research aim was to determine if the TMAS intervention improves children’s resiliency behavior. With pretest (viz., baseline) data, it was possible to achieve that research goal. This was important because collecting baseline data and comparing it to post-test data allowed for determination if there was a change between the two times. Intervention studies that do not gather baseline data have no way to determine if there has been a change from before the intervention. A comparison group helped explain the changes that are observed are due to the intervention, and not due to other causes.

5.10.3 Study Weaknesses

Three groups were recruited, intervention group, waitlist control group, and comparison group. The list of bases to receive TMAS intervention in the fall of 2016 were chosen for the intervention group. Three of the bases attended in the fall of 2016 were revisited for their spring 2017 TMAS for the waitlist control group, as well as a fourth, new base in the spring of 2017. A mass email was sent out in the spring of 2017 for the comparison group recruitment. As explained previously, historical bias was a potential risk if different significant events occur at one study location but not at the other.

Of the intervention group, those recruited at the TMAS intervention may respond to the data collection instruments differently than those who were recruited via email and
completed the data collection a week prior to the TMAS intervention. This was an anticipated problem, and was undertaken to reach a powerful enough sample to determine effect size. It was also assumed that most of the impact of the intervention occurs at home with the family implementing the skills learned at the TMAS intervention, rather than the TMAS intervention itself.

A weakness that affects internal validity was lack of randomization in the design. Due to practical considerations randomization was not plausible (recruitment from participants of the intervention). This means that cause and effect cannot be established from this study. Another internal validity concern was testing bias. Parents were asked to complete the CBCL, DESSA, CYRM, ER11, and HLE-P up to three times. Testing bias may have affected findings through the repeated performance of the same series of instruments (i.e. repeated measures design). The repeated measures design was used in this study via the pre-test post-test collection of data. Testing bias cannot be avoided since repeated measures of the same instruments is important to determine if changes have occurred from the TMAS intervention.

A third internal validity concern is statistical regression bias. Statistical regression bias is when outlying scores move toward the mean due to the pre-post design. This also could not have been avoided due to the nature of the analysis.

An observational bias may have occurred, due to the collection of CUTH data at the mid-point and again at the post-test. This may have reminded the participants that they are supposed to be reading with their children, and result in more significant outcomes than TMAS intervention participants not participating in a study. However, because it is essential for determining effectiveness of the TMAS intervention, data
regarding CUTH of the intervention must be collected, and the researchers will assess bias after data collection is complete.

Attrition may result in bias. A simulation study found that considerable bias was associated with a loss to follow up as low as 20% for those missing not at random. Missing not at random is defined as loss dependent on exposure and outcome (Kristman, Manno, & Côté, 2003). In this study, there was a loss to follow up of eight of 42 parent-child dyads (19%) in the intervention group, one of nine parent-child dyads (11%) in the first phase of the waitlist control group, three of seven parent-child dyads (43%) in the second phase of the waitlist control group, and four of nine parent-child dyads (44%) in the control group. Due to high rates of attrition in the control group, second phase of the waitlist control group, and the intervention group, it is possible that there is an effect that is unable to be seen due to the risk of loss due to non-random factors.

There may be a limitation due to the nested-ness of the sample, where eight pairs of two siblings were included in the analysis sample of 27. Out of the full sample of 41, there were 11 pairs of two siblings. However, it was determined that to exclude one of each of the siblings would result in an even smaller sample size with a lower power, and it was determined that sibling nesting was less of a risk to validity than low power.

This study does have low power due to the small sample size, especially for the control group, and it is possible that effects were not seen as part of a type II error.

For much of the recruiting period (November 2016 to April 2017) those that had previously attended TMAS were excluded, therefore the prior attendance group is small and lacks power.
5.11 Discussion Summary

This study contributed new information to the field in the way of evaluating the efficacy of the TMAS intervention. Overall, results indicate that the TMAS intervention increases resiliency and decreases problem behavior for school aged military children. The TMAS intervention, like other resiliency interventions, has increased resiliency and decreased internalizing behavior in the intervention group compared to the control group. There may be an observed gender effect, where girls respond better overall in regards to resiliency, internalizing behavior, and externalizing behavior. However, intervention group boys had greater improvements in scores for resiliency, internalizing behavior, and externalizing behavior. Overall, TMAS is effective at creating positive change in military families and their children who participate, and maybe especially for boys.

Home literacy environment plays a role in moderating resiliency outcomes for TMAS participants; where children who responded with the most improvement to ego-resiliency scores when exposed to TMAS were the ones that started out with the lowest home literacy environment scores. Regarding externalizing behavior as moderated by home literacy environment, families with less home reading and more TV time have more problem behaviors, even when exposed to the TMAS intervention. Home literacy environment increased after exposure to TMAS, but there are many variables that are unexplained surrounding the home environment, and there is no single gold standard measurement of home literacy environment in the literature.

Resiliency plays a role in moderating externalizing behavior, where high resiliency scorers have lower externalizing behaviors overall. For resiliency moderating internalizing behavior, children with initial high resiliency scores reduced their
internalizing behaviors when they participated in the TMAS intervention. Children with low resiliency scores experienced an increase in internalizing scores whether or not they participated in the TMAS intervention. This result offers evidence to suggest that to assume that problem behaviors are directly inverse with – and can be used to represent – resiliency is erroneous. Behavior and resiliency are related, but they are not the same concept. As a resilience researcher, based on the literature, the results of this study, and experience as a registered nurse, it is likely that the inherent properties of resiliency are an internal process, while behavior is an inherent external trait. The process of resiliency ongoing in a child’s development results in externalizing and internalizing behavior that vary as the child goes through the process. Since resiliency is a process centered around growth and response to the environment, some of those responses during the process will be maladaptive, or internalizing and externalizing behavior. However, these could be part of the process, the maladaptive behaviors are part of the child learning how to respond in ways that are positive for themselves and their environment. Resiliency and problem behaviors are linked together, like two parts of an iceberg. The resiliency process is unseen, beneath the surface, while problem behaviors are the easily recognizable aspects.

Statistical analysis of intervention fidelity did not yield any statistically significant results, nor did repeat attendance, indicating that the concepts of TMAS are adequately portrayed once, even when not perfectly “by the book.” Nevertheless, too much variance from the TMAS manual will undoubtedly reduce the impact of the TMAS intervention.

Tell Me A Story is a family centered literacy intervention focused on communication and the parent-child relationship. This study examined the efficacy of
the TMAS intervention and found that it improves outcomes for children who participate regarding resiliency and internalizing behavior. The results are limited by the small control group. Future studies hope to have larger sample sizes, with a more diverse population. Nurses can use these findings in a community setting to organize the TMAS intervention with MCEC or resiliency interventions like it to improve the lives of their patients at the community level.
APPENDIX A

EGO-RESILIENCY Q-SORT INSTRUMENT

Ego-resiliency (adapted by Eisenberg from Block Q sort)

11 item version

1. Is resourceful in initiating activities (finds ways to make things happen and get things done). – Likert [0 – 9]

2. Freezes up when things are stressful, or else keeps doing the same thing over and over again. – Likert [0 – 9]

3. Is curious and exploring; he/she likes to learn and experience new things. – Likert [0 – 9]

4. Can bounce back or recover after a stressful or bad experience. – Likert [0 – 9]

5. When under stress, he/she gives up and backs off. – Likert [0 – 9]

6. Shows specific mannerisms or behavioral rituals (e.g., has specific habits or patterns of behavior--taps fingers, bites fingernails, or stutters or bites lips). – Likert [0 – 9]

7. Tends to get sick when things go wrong or when there is a lot of stress (for example, gets headaches, stomach aches, throws up). – Likert [0 – 9]

8. Tends to go to pieces under stress; becomes rattled and disorganized when things are tough. – Likert [0 – 9]

9. Can talk about unpleasant things that have happened to him/her. – Likert [0 – 9]

10. Is creative in the way he/she looks at things; the way he/she thinks, works or plays is very creative. – Likert [0 – 9]

11. Uses and responds to reason (thinks things out and you can explain things to him/her like you can an adult). – Likert [0 – 9]
APPENDIX B

DEVEREUX STUDENT STRENGTHS ASSESSMENT

During the past 4 weeks, how often did the child…

1. accept responsibility for what she/he did? – Likert [ never / rarely / occasionally / frequently / very frequently ]

2. do something nice for somebody? – Likert [ never / rarely / occasionally / frequently / very frequently ]

3. speak about positive things? – Likert [ never / rarely / occasionally / frequently / very frequently ]

4. pay attention? – Likert [ never / rarely / occasionally / frequently / very frequently ]

5. contribute to group efforts? – Likert [ never / rarely / occasionally / frequently / very frequently ]

6. perform the steps of a task in order? – Likert [ never / rarely / occasionally / frequently / very frequently ]

7. show care when doing a project or school work? – Likert [ never / rarely / occasionally / frequently / very frequently ]

8. follow the advice of a trusted adult? – Likert [ never / rarely / occasionally / frequently / very frequently ]
APPENDIX C

HOME LITERACY ENVIRONMENT - PARENT QUESTIONNAIRE

Tell us about yourself

Do you have a subscription to a daily (electronic) newspaper? □ yes □ no

Does anybody in your family own a library card? □ yes □ no

How often do you read (e.g. a book or a newspaper)?
□ daily □ several times a week □ once a week □ rarely □ never

How often does your partner read (e.g. a book or a newspaper)?
□ daily □ several times a week □ once a week □ rarely □ never

How many books do you have in your household?
□ none □ 1-10 books □ 11-50 books □ 51-100 books □ more than 100 books

How many hours a day do you watch TV?
□ more than 3 hours □ 2-3 hours □ 1-2 hours □ less than 1 hour □ rarely/never

How many hours a day does your partner watch TV?
□ more than 3 hours □ 2-3 hours □ 1-2 hours □ less than 1 hour □ rarely/never

Tell us about your child’s experiences

How often does your child look at picture books?
□ daily □ several times a week □ once a week □ rarely □ never

How often does your child listen to audio books?
□ daily □ several times a week □ once a week □ rarely □ never

How often do you visit a library with your child?
□ several times a week □ once a week □ ca. once a month □ rarely □ never

How often do you read to your child?
□ several times a week □ once a week □ ca. once a month □ rarely □ never

How old was your child when you first read to him or her? (If you do not know exactly, please give your best guess) _____ years _____ months or □ the child was not read to

How many hours a day does your child watch TV?
□ more than 3 hours □ 2-3 hours □ 1-2 hours □ less than 1 hour □ rarely/never
Tell us to what extent the following statements are true for your family

<table>
<thead>
<tr>
<th>Tick the appropriate box</th>
<th>not true</th>
<th>less true</th>
<th>somewhat true</th>
<th>true</th>
<th>very true</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Reading is regarded as an important activity at home</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b) Mathematics or being able to calculate is regarded as an important at home</td>
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<tr>
<td>c) My child shows a lot of interest in and loves to being read to</td>
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<tr>
<td>d) My child shows a lot of interest in and loves to learn how to count and calculate</td>
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<tr>
<td>e) The education and schooling of my child is very important for me/us</td>
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<tr>
<td>f) It is important for me that my child completes Year 12</td>
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<tr>
<td>g) It is important for me that my child studies further after finishing school</td>
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<tr>
<td>b) My child and I often write shopping lists or short notes together</td>
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<tr>
<td>i) My child and I often play word games at home such as rhyming</td>
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</tr>
<tr>
<td>j) We often play memory or thinking games at home (such as Concentration or Snap)</td>
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<tr>
<td>k) My child understands the contents of books that are read to him or her</td>
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<tr>
<td>l) At home, we often talk about things we have read</td>
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</tr>
<tr>
<td>m) At home, we like to read</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>n) At home, I often explain my child that reading is done from left to right, what is a word or a sentence or where a sentence starts and ends</td>
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</table>
Reduced Home Literacy Environment (HLE-R)

1. How often do you read (e.g. a book or a newspaper)? – Likert [ Daily / several times a week / once a week / rarely / never ]

2. How many hours a day do you watch TV? – Likert [more than 3 hours / 2-3 hours / 1-2 hours / less than 1 hour / rarely or never ]

3. How often does your partner read (e.g. a book or a newspaper)? – Likert [ Daily / several times a week / once a week / rarely / never ]

4. How many hours a day does your partner watch TV? – Likert [more than 3 hours / 2-3 hours / 1-2 hours / less than 1 hour / rarely or never ]

5. How often does your child look at picture books or read? – Likert [ Daily / several times a week / once a week / rarely / never ]

6. How often do you read to your child? – Likert [ several times a week / once a week / ca. once a month / rarely / never ]

7. How many hours a day does your child watch TV? – Likert [more than 3 hours / 2-3 hours / 1-2 hours / less than 1 hour / rarely or never ]
APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

1. Have you attended a Tell Me A Story Event in the past? – Radio button [Yes, I can’t Remember, No]

2. If yes, How many times have you come to TMAS? – Fill in box [number]

3. If yes, How old was your child when you first attended TMAS? – Fill in box [number]

4. Which base are you associated with? - Fill in box [text]

5. Do you live on or off base? - Radio button [On Base Housing / Off Base Housing]

6. Age of non-military member parent - Fill in box [number]

7. Does the non-military member parent work outside the home? - Radio button [Yes / No]

8. If so, how many hours per week? - Fill in box [number]

9. Age of military member parent - Fill in box [number]

10. Military rank - Fill in box [text]

11. Military branch - Drop down menu [Air Force / Army / Coast Guard / Navy / Marines]

12. Are they currently deployed? - Radio button [Yes / No]

13. If so, for how many months? - Fill in box [number]

14. Have they been deployed before? - Radio button [Yes / No]

15. If so, how many deployments? - Fill in box [number]

16. Have you or your partner ever been told by a health care provider that you or your partner have post-traumatic stress disorder (PTSD)? - Radio button [Yes / No]

17. Age of child - Fill in box [number]

18. Gender of Child - Fill in Box [text]

19. Number of siblings – fill in box

20. If greater than 0: Birth order of child – drop down [oldest child / middle child / youngest child]
21. Number of moves in the child’s life - Fill in box [number]

22. Number of months in current home - Fill in box [number]

23. [If “have they been deployed before” is selected “yes” : How old (year and month) was your child at the beginning of their parent’s first deployment? – Fill in box

24. How long was the deployment (months)? – Fill in box

25. For how many months were the original deployment orders? – fill in box

26. Was the deployment extended? – radio button [Yes / no]

27. If so, for how many months? – fill in box

28. What stage of the deployment cycle are you in at this moment? - click on graphic
DEMOGRAPHIC QUESTIONS IN PRE2, CUTH, AND POST-TEST

1. During the last three weeks, has the military member parent been deployed or notified of deployment? – radio button [yes / no]

2. If yes: What month did the military member deploy? – fill in

3. What stage of the deployment cycle are you in at this moment? - click on graphic
APPENDIX E
RECRUITMENT MATERIAL

Tell Me A Story® Study

This is a FREE event held by the Military Child Education Coalition and your local Parent to Parent team at your local base. We need your help!

If you:
- have a family where one parent is active duty military
- have a child between the ages of 6 and 10 years old
- have not have attended Tell Me A Story before

Then you might qualify to participate. We are conducting research to find out the benefits of Tell Me A Story events

The study consists of (up to four) online surveys about the children participating in TMAS. The short survey takes about 5 minutes and the long ones take between 20 and 40 minutes. After each long survey, participants are given the option to claim a $10 amazon.com gift card. Surveys must be filled out by parents.

Interested in participating?
Contact Katherine-Marie “Dove” Conover, PhD(c) RN
kconover@umass.edu
413-341-6695

FREE
We need your help

Then you might qualify to participate. We are conducting research to find out the benefits of Tell Me A Story events

The study consists of (up to four) online surveys about the children participating in TMAS. The short survey takes about 5 minutes and the long ones take between 20 and 40 minutes. After each long survey, participants are given the option to claim a $10 amazon.com gift card. Surveys must be filled out by parents.

Interested in participating?
Contact Katherine-Marie “Dove” Conover, PhD(c) RN
kconover@umass.edu
413-341-6695
Tell Me A Story
Mending Connections and Finding Support through Literature

Tell me a Story® (TMAS®) program brings parents and children together to listen to a featured book built around a theme. Engaging discussion, activities, supplemental materials, and peer-to-peer interaction encouraging early literacy follow each story.

MCEC is working with a doctoral researcher to study the effectiveness of the MCEC Tell Me A Story® program.

We are looking for participants who have never attended TMAS before, to be part of a comparison group for those who have attended TMAS.

You are eligible to participate if you:
- have a family where one parent is active duty military
- have a child between the ages of 6 and 10 years old
- have not have attended Tell Me A Story before

The study consists of two online surveys taken 6 weeks apart (each lasting 20 to 40 minutes) about your children. Only parents may fill out surveys. After each survey, participants are able to claim a $10 amazon.com gift card.

If you are interested in participating, please email Dove Conover, Doctoral Nursing Researcher, at kconover@umass.edu, or call/text at 413-341-6695.

For any information on MCEC, contact Judy Glennon at Judy.Glennon@MilitaryChild.org.
Hello,

My name is Dove Conover and I am a doctoral nursing researcher working with the Military Child Education Coalition (MCEC) to study Tell Me A Story (TMAS) to understand how effective it is at increasing resiliency in children between the ages of 6 and 10 years.

Please know that participation in my study is **not required** for attending TMAS, and your choice to participate or not in my study will not affect the TMAS event.

The study consists of online surveys about the children participating at TMAS. The shortest survey takes about 5 minutes and the longest ones take between 20 to 40 minutes. We ask parents to complete the surveys, not their children. After each longer survey, participants are given the option to receive a $10 amazon.com gift card.

Attached to this email is the letter of introduction from MCEC about my study, and the informed consent document, which tells you more about what to expect from participating in this study. My liaison at MCEC is Judy Glennon, and her email is judy.glennon@militarychild.org if you have any questions about me and my partnership with MCEC.

Participants need to:
- have one parent be active duty military
- be parents of a child between the ages of 6 and 10 years old (if you have 2 children in this range, I can send you two links)
- have not have attended Tell Me A Story before

If you are interested in participating, please click on the link to the survey at the end of this email.
I will be at Fort Rucker on January 17th during TMAS, and can answer any questions you have then.

Thank you for your time,

Katherine-Marie "Dove" Conover, PhD(c) RN
kconover@umass.edu
413-341-6695

[LetterOfIntro](LetterOfIntro-1)

You may print out this form before clicking “I agree.”

[TMAS Pre-Test Survey](TMAS Pre-Test Survey)
In Person Recruitment Script

My name is Dove Conover, I am a nurse and a doctoral student at the University of Massachusetts. I am working with the Military Child Education Coalition who provide the Tell Me A Story program for children of military families. It is very important that we understand how this program helps or does not help children so that we can either improve current programs or develop new ones. To do this, I am asking parents who are military members or military spouses that are at Tell Me A Story program with their children.

Are you a military member or a military spouse?  No  Yes

No – Thank you for your time.
Yes – Are your children between 6 and 10 years of age?  No  Yes

No – Thank you for your time, it is important that we evaluate this program on children between the ages of 6 and 10 years.
Yes – Have you attended TMAS before?

Yes – Thank you for your time, it is important that we evaluate this program with families that have never attended before.
No- Are you interested in hearing more about this study?

No – Thank you

Yes – As I mentioned, this study is examining the impact of the Tell Me A Story Program on children. If you participated, you would complete online questionnaires before and after you and your children participate in the program. The shortest survey takes about 5 minutes, the longest takes about 20 to 40 minutes. We will only ask you to complete a survey, we will not ask your children. You will receive a $10 Amazon gift card each time you take a long survey.

When speaking with potential Intervention Group participants:
You will be asked to complete two long surveys and one short survey.

When speaking with potential WLC Group participants:
You will be asked to complete three long surveys and one short survey.

If they are interested, get their email address so that they can be sent the letter of introduction, informed consent, and link to the first survey.

Email Participants are sent after in person recruitment
Hello,

Thank you for joining in this study! This survey is the first of three that you will be invited to complete. People who have taken it have said it took them between 20 to 40 minutes to finish. At the end of this survey, you will be given the opportunity to enter the email you would like your $10 Amazon.com digital gift card sent to.

This survey is for research purposes, to help us (MCEC and myself) to determine the effectiveness of the TMAS program in building resilience and fostering parent-child connections through literacy. Your answers will stay confidential, and you can skip any questions you feel uncomfortable answering. Thank you so much for your participation. This study couldn’t happen without your help.

As a reminder, participants need to:
- have one parent be active duty military
- be parents of a child between the ages of 6 and 10 years old (if you have 2 children in this range, I can send you two links)
- have not have attended Tell Me A Story before

Please follow your individual link to the survey site:

${l://SurveyLink?d=Click%20Here%20to%20Take%20the%20Survey}

If the link is not “clickable” please copy and paste it into your browser window.

Attached for your reference is the informed consent and parental permission document. You will see it again at the start of the survey, and that’s where you electronically “sign” it by clicking that you agree.

My liaison at MCEC is Judy Glennon, and her email is judy.glennon@militarychild.org if you have any questions about me and my partnership with MCEC.

Please do not hesitate to contact me with any questions or concerns,
Katherine-Marie "Dove" Conover, PhD(c) RN
kconover@umass.edu
413-341-6695

LetterOfIntro-I

You may print out this form before clicking “I agree.”

Follow the link to opt out of future emails:
${l://OptOutLink?d=Click%20here%20to%20unsubscribe}

Email for “cold calling” email list for Waitlist Control Group
Subject: Tell Me A Story® Study

Hello,

My name is Dove Conover and I am a doctoral nursing researcher working with the Military Child Education Coalition (MCEC) to study the effectiveness of the Tell Me A Story® (TMAS) program.

You are receiving this email because a TMAS event will be happening near your base in the next few weeks and I am inviting you to be part of the study. If interested, you will be asked to fill out a survey at least 6 weeks before attending, so I can gather information to see if there is a change between those that have attended TMAS and those that haven't. This information is vital to determine if Tell Me A Story does what we think it does, increase the resiliency of children. Please note that participation in my study is not required in order to attend TMAS.

You are eligible to participate if you:
- have a family where one parent is active duty military
- have a child between the ages of 6 and 10 years’ old
- have not have attended Tell Me A Story before

The study consists of (up to four) online surveys about the children participating in TMAS. The short survey takes about 5 minutes and the long ones take between 20 and 40 minutes. After each long survey, participants are given the option to claim a $10 amazon.com gift card. Surveys must be filled out by parents.

Attached to this email is the letter of introduction from MCEC about my study, and an informed consent document, which tells you more about what to expect from participating in this study. My liaison at MCEC is Judy Glennon, and her email is judy.glennon@militarychild.org if you have any questions about me and my partnership with MCEC.

If you are interested in participating, please click on the link to the survey at the end of this email.

I will be at your base during TMAS, and can answer any questions you have then.

Thank you for your time,

Katherine-Marie "Dove" Conover, PhD(c) RN
kconover@umass.edu
413-341-6695
https://www.facebook.com/Parent-to-Parent-Abilene-TX-177295519357362/

LetterOfIntro-1
Reminder Email for Wait List Control Group

Hello,

A week ago I invited you to participate in my Waitlist Control Group of the Tell Me A Story Study. You are receiving this email because you haven't yet taken the survey. You receive a $10 amazon.com gift card for each 20 to 40 minute long survey you take (up to 3).

You are eligible to participate if you:
- have a family where one parent is active duty military
- have a child between the ages of 6 and 10 years old
- have not have attended Tell Me A Story before

If you would like to participate, please click the survey link below. If you don't meet the criteria or don't want to receive another email, please click the "Opt Out" link below.

Thank you for your time and attention,

Katherine-Marie "Dove" Conover PhD(c) RN
kconover@umass.edu

Follow this link to the Survey:
${l://SurveyLink?d=Take the survey}

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}

Follow the link to opt out of future emails:
${l://OptOutLink?d=Click here to unsubscribe}

Control group recruitment via MCEC Mass Email

Hello,
My name is Dove Conover and I am a doctoral nursing researcher working with the Military Child Education Coalition (MCEC) to study the effectiveness of the Tell Me A Story® (TMAS) program.

We are looking for participants who have never attended TMAS before, to be part of a comparison group for those who have attended TMAS.

You are eligible to participate if you:
- have a family where one parent is active duty military
- have a child between the ages of 6 and 10 years’ old
- have not have attended Tell Me A Story before

The study consists of two online surveys about your children. Surveys must be filled out by parents. The surveys take between 20 and 40 minutes. The surveys are taken 6 weeks apart. After each survey, participants are given the option to claim a $10 amazon.com gift card.

If you are interested in participating, please email me at kconover@umass.edu, or call/text at 413-341-6695

Attached to this email is an informed consent document, which tells you more about what to expect from participating in this study. My liaison at MCEC is Judy Glennon, and her email is judy.glennon@militarychild.org if you have any questions about me and my partnership with MCEC.

Thank you for your time,

Katherine-Marie "Dove" Conover, PhD(c) RN
kconover@umass.edu
413-341-6695

Attachments:
Informed Consent Document
### APPENDIX F

**CHILD AND YOUTH RESILIENCE MEASURE**

**CYRM-PMK-12 for children 5-9**

<table>
<thead>
<tr>
<th>Question</th>
<th>No</th>
<th>Sometimes</th>
<th>Yes</th>
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</thead>
<tbody>
<tr>
<td>1. Do you think the youth has people he/she wants to be like?</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>2. Do you think getting an education or doing well in school is</td>
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<td>important to the youth?</td>
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<td>3. Do you or the youth's caregiver(s) know a lot about him/her (for</td>
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<td>example what makes him/her happy, scared, sad)?</td>
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<td>4. Does the youth try to finish what he/she starts?</td>
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<td>5. When things don't go the youth's way, can he/she fix it without</td>
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<td>hurting him/herself or other people (for example hitting others or</td>
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<tr>
<td>saying nasty things)?</td>
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<tr>
<td>6. Does the youth know where to go to get help?</td>
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<td>7. Do you think the youth feels/felt that he/she belongs/ belonged at</td>
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<td>his/her school?</td>
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<td>8. Do you and the youth's family care about him/her when times are</td>
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<td>hard (for example if the youth is sick or has done something wrong)?</td>
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<tr>
<td>9. Do you think the youth's friends care about him/her when times are</td>
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<tr>
<td>hard (for example if the youth is sick or has done something wrong)?</td>
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<tr>
<td>10. Do you feel the youth is treated fairly in his/her community?</td>
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<td>11. Does the youth have chances to learn things that will be useful</td>
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<td>when he/she is older (like cooking, working, and helping others)?</td>
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<tr>
<td>12. Does the youth like the way his/her community celebrates things</td>
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<td>(like holidays, festivals)?</td>
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</table>

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Youth CYRM-PMK-12 for children 9 to 23 years’ old

**OPTION 4: SECTION C**

To what extent do the sentences below describe the youth? Circle one answer for each statement.

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<tr>
<th>Statement</th>
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<td>1. The youth has people he/she wants to be like</td>
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<td>3. The youth’s caregiver(s) know a lot about him/her (for example what</td>
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<td>makes him/her happy, scared, sad)</td>
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<td>4. The youth tries to finish what he/she starts</td>
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<td>6. The youth knows where to go to get help</td>
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<td>7. The youth feels/feel that he/she belongs/ belonged at his/her school</td>
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<td>8. The youth’s family cares about him/her when times are hard (for</td>
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<td>example if the youth is sick or has done something wrong)</td>
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<td>holidays, festivals)</td>
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APPENDIX G

TIMELINE OF TMAS INTERVENTION

Registration/Sign-In – 15 minutes
Welcome/Introductions – 5 Minutes
Reading – 15 minutes or less, depending on the book
Facilitated Discussion – 15-30 minutes
Activities – 15-30 minutes
TOTAL – 65 to 95 minutes
APPENDIX H

16 BOOKS FOR TMAS INTERVENTION

Positive Psychology Character Traits (MCEC, 2010)

**Making Connections and Finding Support through Literature**

*Mercedes and the Chocolate Pilot* by Margot Theis Raven
*How to Bake an American Pie* by Karma Wilson
*Crow Call* by Lois Lowry
*Zen Shorts* by Jon J Muth

**Courage and Resilience**

*More Than Anything Else* by Marie Bradby
*While You Are Away* by Eileen Spinelli
*Click, Clack, Moo; Cows That Type* by Doreen Cronin
*Courage* by Bernard Waber

**Personal Growth**

*Verdi* by Jacell Cannon
*The Remarkable Farkle McBride* by John Lithgow
*Three Questions* by Jon Muth
*Listen to the Wind* by Greg Mortensen
*Giraffe’s Can’t Dance* by Giles Andrede
*Odd Velvet* by Mary E. Whitcomb
*The Brand New Kid* by Katie Couric
Matrix of Books and Themes

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<th>Valor</th>
<th>Perseverance</th>
<th>Integrity/Honesty</th>
<th>Kindness/Generosity</th>
<th>Lovingness</th>
<th>Citizenship</th>
<th>Fairness/Equity</th>
<th>Leadership</th>
<th>Self-Control</th>
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<th>Humility</th>
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*Primary Theme*

*Secondary Theme*

(MCEC, 2010)

**Book Synopses**

**Mercedes and the Chocolate Pilot**

This is “the true story of a young German girl living in Berlin during the Berlin Blockade. The story tells how an American pilot brought hope to this one child through a simple act of kindness. This act of kindness became the connecting thread that brought the two people together 20 years later and has kept them connected throughout their lives. This story is one that demonstrates how an act of **generosity** and **kindness** can affect a single life. Not only does Mercedes benefit from Lt. Halverson’s kindness, but Lt. Halverson himself surely found great pleasure and gained **perspective** on the work he was doing as an Air Force pilot during the Berlin Airlift.
“The parallel story (a story about the soldiers from your installation units) also reinforces to the children that their parents who are deployed are working hard to bring hope for a better life to children in Iraq and Afghanistan” (MCEC, 2010, p 10).

Night Catch
“A story about how a father and son plan to stay connected by using one of the family traditions (playing catch in the park) and turning it into a game of catch with the North Star when the father is deployed. The story reminds us that even when we are separated by many miles, the things we do as families become our family story and keep us connected” (MCEC, 2010, p 10).

How to Bake an American Pie
“A story that takes us on an adventure across America to learn about the founding principles of our nation. The story (poem) features lines from ‘America the Beautiful’ as it describes the geographical diversity of our nation as well as the melting pot that makes up the United States. This book was selected because it addresses patriotism and diversity. The story highlights the themes of Open-Mindedness, Citizenship, Fairness and Equity, and Hope and Optimism. The accompanying book, Our 50 States, will give families an opportunity to celebrate the military child’s geographic diversity and knowledge” (MCEC, 2010, p 10).

More Than Anything Else
This is “the true story of Booker T. Washington’s young childhood. Nine-year-old Booker works with his father and brother in the salt works, but dreams of the day when he will be able to read. Few people around him in Malden, West Virginia are able to read; but seeing an opportunity, Booker takes a chance and chases his dream. This story is one that demonstrates the power of Love of Learning! Booker T. Washington’s hope and optimism drive him forward in search of his dream. Booker’s curiosity with the written word and his perseverance to learn how to read carry him on in achieving his goal” (MCEC, 2010, p 10).

While You Were Away
“A book that reflects on what children think about and do while a loved one is away. Although the children miss their loved ones, the focus is positive and talks about finding comfort in sharing thoughts, memories, photographs, and staying connected to that person. One of the primary missions of Tell Me A Story is to help children build skills for resilience. This story demonstrates perspective, self-control, curiosity, caring and ways to approach a deployment or long separate by using these skills” (MCEC, 2010, p 10).

Click, Clack, Moo Cows That Type
“The humorous story of Farmer Brown’s cows and what happens when they get their hooves on a typewriter. The cows use the typewriter to communicate the changes they want made in the barn. Duck serves as the neutral party to mediate the demands of the cows and the farmer. Humor is an important characteristic in a resilient child. This story uses humor to show problem solving and what can happen when different groups
cooperate and compromise. The cows in the story not only look after their own needs, they consider the needs of their fellow farm animals, a great example of the caring community” (MCEC, 2010, pp 10-11).

Verdi
This is “a classic Peter Pan story. Verdi does not want to become green (grow up). He thinks greens are dull, boring, and rude. Through his misadventures Verdi learns that growing up is not such a bad thing and you can still be yourself on the inside even when things change on the outside. Change is a part of every military child’s life. Whether change is due to a move or change because of a loved one’s absence, the uncertainty of change affects children. Through this story we can see that even though there are challenges with change, there is also support and help from our family and community. Most importantly children will see that even though Verdi turns green, he still remains true to himself. The story highlights the themes of Zest for Life, Discretion, Self-Control, and Humility” (MCEC, 2010, p 11)

The Remarkable Farkle McBride
“Farkle McBride is a gifted child who struggles with his musical genius. He can play several instruments but is not satisfied until he learns that his real talent lies in making them all work together. This story is about a child who won’t give up. His frustration with only being a small part of the orchestra is the driving force behind his willingness to learn more, try more, and finally find the thing he loves. Parents want their children to try their best and not give up. We frequently say things like ‘if at first you don’t succeed, try, try again.’ This story illustrates not only trying again and again, but how perseverance pays off in the end” (MCEC, 2010, p 11).

The Three Questions
“A young boy named Nikolai searches for the answers to three questions in his quest to become a better person.
“1. What is the best time to do each thing?
“2. Who are the most important people to work with?
“3. What is the most important thing to do at all times?
“He consults his friends – a heron named Sonya, a monkey named Gogol, a dog named Pushkin and a wise old turtle named Leo. Nikolai is sure Leo will know the answers to his three questions. However, it is Nikolai’s response to a stranger’s cry for help that leads him to find the answers within himself. This is a story of compassion and living in the moment. The book is a starting point to help us recognize and realize that we can be generous and charitable in simple ways by looking at the people right next to us and the environment immediately around us. A person is never too young to be introduced to these themes. The Three Questions succeeds in helping children think of being of service to others and to realize that life isn’t about getting, it’s about doing” (MCEC, 2010, p 11).

Giraffes Can’t Dance
“It’s the annual jungle dance, and all the animals are getting down and dancing tonight. All, that is, except poor Gerald the Giraffe. With knees that are “awfully
crooked’ and legs that are ‘rather thin,’ Gerald can’t seem to figure out how to make his body parts work together in order to dance. Until a fortuitous meeting with a friendly cricket who shares these words of wisdom, ‘sometimes when you’re different, you just need a different song.’ Before you can say ‘crooked knees and long neck’, Gerald is swaying and swishing round in his own special way to the music of a moonlit evening.

“The theme for this book includes – open-mindedness, persistence, social/emotional intelligence, kindness/generosity, fairness, equity, and hope/optimism. This is a story of celebrating the differences in children! It is great for those children who may feel different or left out, and who hasn’t? This is an inspirational story that creates a positive message to children showing that all people are different and special in their own way. It celebrates and embraces the fact that we are all different, and sends a message that nothing is impossible” (MCEC, 2010, p 11).

Listen to the Wind
“In 1993, Greg Mortensen started to climb K2 in honor of his younger sister, but when another member of his group got sick, they turned around, and Greg became lost in the mountains of Pakistan. He wandered into a poor village where the village chief and his people took him in. Moved by their kindness, he promised to return and build a school for the children. Over the next decade, Mortensen build more than seventy-eight schools in Pakistan and Afghanistan. He has dedicated his life to building literacy and peace, one child at a time. This remarkable story is perfect for reading aloud. Told in the voice of Korphe’s children, Listen to the Wind is the story of Greg Mortensen’s first building project in Pakistan. This lush picture book illustrates the humanity and culture of a relevant and distant part of the world in gorgeous collage, while sharing a riveting example of how one person can change thousands of lives – all in language appropriate for even the youngest of readers (MCEC, 2010, p 12).

Odd Velvet
“Velvet is odd. Instead of dolls that talk and cry, Velvet brings a milkweed pod for show and tell. She wins the class art contest using only an eight-pack of crayons. She likes to collect rocks. Even her name is strange – Velvet! And so, no one chooses Velvet for partner play. No one walks home with her after school. No one wants to be different the way Velvet is different. But as the school year unfolds, the things that Velvet does and the things she says slowly begin to make sense. And, in the end, Velvet’s classmates discover that maybe Velvet isn’t really so different after all. This heartwarming story about a special little girl reminds readers that friendship can sometimes be found in the oddest places. In encourages even the youngest not to be too quick to dismiss others because they are different and it embraces the joy in the simple things life has to offer” (MCEC, 2010, p 12).

Courage
“Brenda Waber’s book shows young readers the many faces of courage. Some are obvious - firefighters entering a burning building, mountain climbers scaling the heights - involving people and actions which youngsters find heroic, larger than life. However, with this book, children will relax that ordinary, everyday actions also require courage.
Whether it’s telling the hard truth regardless of the consequences, holding onto your dreams, or being the first to apologize after an argument, there are opportunities for courage in a child’s everyday life. Even acts of common courtesy may display courage in action. Maya Angelou has said ‘One isn’t necessarily born with courage, but one is born with potential… Without courage, we cannot practice any other virtue with consistency. We can’t be kind, true, merciful, generous, or honest.’ If you agree with this philosophy, then you realize that courage, as character, must be fostered and developed. Youngsters are sure to see both the truth and a little of themselves on each page. Perfect for kids 4-8, Courage is a heartwarming and utterly charming book, sometimes poignant, often uplifting, but always stated in a positive way, that should get little ones thinking and prompt open interesting discussions. ‘Courage is what we give each other.’” (MCEC, 2010, p 12)

_Zen Shorts_

“In Jon J Muth’s profound and winning picture book, Michael and Karl discover a ‘really big bear in the backyard.’ This is how three children meet Stillwater, a giant panda who moves into the neighborhood and tells the kids amazing tales. To Addy he tells a story about the value of material goods. To Michael he pushes the boundaries of good and bad. And, to Karl he demonstrates what it means to hold on to frustration. With graceful art and simple stories that are filled with love and enlightenment, Jon Muth – and Stillwater the bear – present three ancient Zen tales that are sure to strike a chord in everyone they touch. This unique and beautiful book offers real-life lessons in a gentle way - and will foster thoughtful discussions about how we should treat ourselves and others’” (MCEC, 2010, pp 12-13).
APPENDIX I

CHECKING USE OF TMAS AT HOME INSTRUMENT

First Check for Use of TMAS at Home

1. What book did you take home from Tell Me A Story? - Dropdown [The Brand New Kid / Click, Clack, Moo Cows That Type / Courage / Crow Call / Giraffes Can’t Dance / How to Bake an American Pie / Listen to the Wind / Mercedes and the Chocolate Pilot / More Than Anything Else / Night Catch / Odd Velvet / The Remarkable Farkle McBride / The Three Questions / Verdi / While You Were Away / Zen Shorts]

2. After you attended Tell Me A Story, on AVERAGE how many times per week did you read the book with your child? – Fill in number [Number]

3. In the book you read, who was your child’s favorite character? - Fill in box [Text]

4. In the book you read, what did your child say is the main idea of the story? - Fill in box [Text]

5. In the book you read, what did your child say they liked best about the story? - Fill in box [Text]

6. In the book you read, was there anything about the story they did not like? - Fill in box [Text]

7. Do you think your child understood the story you read? - Radio button [Yes / No]

   7 a. Why do you think yes or no? - Fill in box [Text]

8. What was the activity you were asked to complete with the book? - Fill in box [Text]

9. Did you complete that activity? - Radio button [Yes / No]
Second Check for Use of TMAS at Home

1. Do you think the book and activity influenced your family’s level of optimism? - Likert [not at all / a little / somewhat / much / a great deal]

2. Do you think the book and activity helped your child deal with a tough problem? - Likert [not at all / a little / somewhat / much / a great deal]

3. Do you think the book and activity has helped your child while at school? - Likert [not at all / a little / somewhat / much / a great deal]

4. Overall, do you think reading the book was helpful? - Likert [not at all / a little / somewhat / much / a great deal]

5. Overall, do you think the activity was helpful? - Likert [not at all / a little / somewhat / much / a great deal]

6. Did you find yourself reading other books more often to your child after attending Tell Me A Story? - Likert [not at all / a little / somewhat / much / a great deal]

7. Would you say that this book and activities has helped: - Likert [Not at all / Very Little / Some / A lot / Extremely helpful]
   A. increase parent-child connections through discussions?
   B. increased sense of optimism among families?
   C. increased opportunities for creativity?
   D. increased opportunities for academic development?
# APPENDIX J

## CHILD BEHAVIOR CHECKLIST

**Child Behavior Checklist for Ages 6-18**

**Parents’ Usual Type of Work**, even if not working now. (Please be specific — for example, auto mechanic, high school teacher, homemaker, laborer, lathe operator, shoe salesman, army sergeant.)

**Father’s Type of Work**

**Mother’s Type of Work**

This form filled out by: (print your full name)

- Your gender: [ ] Male  [ ] Female
- Your relation to the child: [ ] Biological Parent  [ ] Step Parent  [ ] Grandparent
  [ ] Adoptive Parent  [ ] Foster Parent  [ ] Other (specify)  

### I. Please list the sports your child most likes to take part in. For example: swimming, baseball, skating, skate boarding, bike riding, fishing, etc.

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<tr>
<th>Sports</th>
<th>Compared to others of the same age, about how much time does he/she spend in each?</th>
<th>Compared to others of the same age, how well does he/she do each one?</th>
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### II. Please list your child’s favorite hobbies, activities, and games, other than sports. For example: stamps, dolls, books, piano, crafts, cars, computers, singing, etc. (Do not include listening to radio or TV.)

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<th>Hobbies/Activities</th>
<th>Compared to others of the same age, about how much time does he/she spend in each?</th>
<th>Compared to others of the same age, how well does he/she do each one?</th>
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### III. Please list any organizations, clubs, teams, or groups your child belongs to.

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<th>Organizations/Clubs</th>
<th>Compared to others of the same age, how active is he/she in each?</th>
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### IV. Please list any jobs or chores your child has. For example: paper route, babysitting, making bed, working in store, etc. (Include both paid and unpaid jobs and chores.)

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<th>Jobs/Chores</th>
<th>Compared to others of the same age, how well does he/she carry them out?</th>
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*Be sure you answered all items. Then see other side.*
Please print. Be sure to answer all items.

V. 1. About how many close friends does your child have? (Do not include brothers & sisters)
   □ None □ 1 □ 2 or 3 □ 4 or more

2. About how many times a week does your child do things with any friends outside of regular school hours?
   (Do not include brothers & sisters) □ Less than 1 □ 1 or 2 □ 3 or more

VI. Compared to others of his/her age, how well does your child:
   □ Worse □ Average □ Better □ Has no brothers or sisters
   a. Get along with his/her brothers & sisters?
   b. Get along with other kids?
   c. Behave with his/her parents?
   d. Play and work alone?

VII. 1. Performance in academic subjects.

   Check a box for each subject that child takes
   a. Reading, English, or Language Arts
   b. History or Social Studies
   c. Arithmetic or Math
   d. Science
   e. ____________________________
   f. ____________________________
   g. ____________________________

   Does not attend school because ____________________________

   Other academic subjects—for example: computer courses, foreign language, business. Do not include gym, shop, driver's ed., or other nonacademic subjects.

2. Does your child receive special education or remedial services or attend a special class or special school?
   □ No □ Yes—kind of services, class, or school:

3. Has your child repeated any grades?
   □ No □ Yes—grades and reasons:

4. Has your child had any academic or other problems in school?
   □ No □ Yes—please describe:
   When did these problems start?
   Have these problems ended?
   □ Yes—when?

   Does your child have any illness or disability (either physical or mental)?
   □ No □ Yes—please describe:

What concerns you most about your child?

Please describe the best things about your child.
Please print. Be sure to answer all items.

0 = Not True (as far as you know)  
1 = Somewhat or Sometimes True  
2 = Very True or Often True

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APPENDIX K

OBSERVATIONS OF TEN TMAS EVENTS

1. Montgomery, AL  11/5/16

The TMAS was off base (Maxwell Gunter AFB), in the Prattville Parks and Recreation community center. The signage wasn’t clear, and there was also an event across the street in a park. The community center had one large room with a stage. Chairs were arranged at a 45-degree angle towards the stage, with an area in front for the sitting on the ground. Craft tables were on the sides of the room. Snacks were on a table in the opposite corner of the stage. The check-in table was in the center, opposite the stage. There were a number of volunteers. A computer sat to the side of the stage that was connected with the projector. A microphone and chair was set up in front of the stage at floor level.

Families entered down ten stairs or the ramp and checked in. Those that had RSVP’d had pre-made name tags. There were two sign-ins on paper, one for those that RSVP’d and one for those that did not. As parents signed in, children were asked to sign the book, Giraffes Can’t Dance. Families then sat on the chairs, and some took snacks. It was unclear if snacks were intended for before or after the reading or craft.

The TMAS began with the P2P team leader thanking the local community for providing support to the military community as it transitions often, staying only for a year or two. Mayor Gillespie of Prattville was the reader. Mayor Gillespie is a parent. He read slowly, asking many questions of the kids, pausing for their responses. During the reading, he asked the kids to come close to him, and ended up with a child on his lap. Most of the parents sat in the chairs, eight parents sat with their children. There were
about 75 people in the room. Most of the children were younger than 6 years old. The volunteers stood in the back of the room as the reading occurred, talking - some quietly, some loud enough to be heard over the sound system. The P2P member flipping the slides with the pictured book pages often went faster than the reader.

After reading, the mayor was presented the copy of the book that the children had signed. He then took many photos with the kids. He brought his own photographer and his wife. The P2P team member asked questions about the book to the room at large. Break out groups were not used. The P2P team member wrote children’s responses on the paper board. Most of the children had dispersed to the craft tables during the photos with the mayor and did not participate in the discussion section. Questions asked were: How do you think Gerald felt? Has anyone helped you learn something new? What did you enjoy most about the story? Which animals danced which style? What happened when Gerald started dancing to violin music? What kind of animal was Gerald?

The craft was to create a picture frame with an animal theme. Parents worked with their children quickly, and then headed for the door, grabbing snacks on the way out. As families left, they were given bag with a copy of the book Giraffes Can’t Dance, a booklet with more questions about the story to go over at home, support reading material, and an additional craft to complete at home.

2. Fort Bliss 11/16/16

The TMAS was scheduled during the day on a school day, the only time they could reserve the Family Resilience Center, which is the only space available to them on base for large events. The room came with tables and chairs in rows, with a walkway down the middle. The front two rows were moved aside on the right half of the room,
and chairs were set up in a semicircle around the reader’s chair. Sign in was on the back table closest to the door, and snacks were adjacent to that. Crafts were set up on the remaining tables. The computer for the projector was connected at the rear of the room.

Two families attended, a homeschooled boy and girl with their non-English speaking grandfather, and a mother whose children were in school. The young boy was very talkative. His sister less so. The mother didn’t know about MCEC or P2P. We all sat on the chairs in the semi-circle, except for the grandfather, who sat at the tables behind and didn’t engage with the group.

The reader was Mark Cauthers, the director of Fort Bliss MWR, who read without embellishment or rushing, but did not ask questions as he read. He left as soon as the reading was complete. The slides were in sync with the reading. Tara, P2P team member and teacher led the discussion session. The questions asked included: What does courage mean to you? Policemen, firemen… Who else do you know that shows courage? Have you ever done something that showed courage? No scribe was used. Most of the questions were answered by the young boy.

The craft was to color and cut out a super hero and attach limbs with brads. The young boy made multiple superheroes and eventually Tara stopped the craft time. The take home bag had a copy of the book *Courage*, a parent guide, and take home questions. The mother was also given supplies to complete the craft at home with her children.

3. Fort Hood  12/1/16

The TMAS occurred at the Oveta Culp Soldier and Family Readiness Center. Because the event occurred after normal operation hours, the doors were locked and had to be opened from the inside each time someone wanted to come in. There was a small
reception area with couches and chairs, and the check in table was adjacent to them, across from the door into the large room the reading would occur in. The room was three break out rooms with the dividers open. The tables and most of the chairs were pushed to the back of the room, with a few tables remaining for crafts for one of the four groups. The remaining chairs were arranged along the wall and the back of the area for the reading. Across the hall from the large, long room, were four divided break out rooms, three of which were being used for the discussion and activity groups.

The volunteers were the older teen children of the P2P team members. The facilitators for the groups arrived early and were given a tour of the four areas for each of the groups. The facilitators had copies of the book already and had been encouraged to familiarize themselves with the book. The facilitators were given instructions to lead the discussion and craft in their rooms.

The reader was Adhana McCarthy, a pregnant Physician’s Assistant, chosen because in the past some parents had stated they were concerned about how their children behaved in front of higher ranking officers. The choice of reader for the book *Odd Velvet*, a story about a girl who is a lot of things - per the P2P team, was a female officer, who is important in the community because she is a health care provider, is a mom, and is pregnant. The P2P team chose her to provide a positive role model for the children.

During check in, one child from each family was given a necklace with a different colored apple on it, dividing them into the four groups. Many of the children attending were younger than 6 years old. Children were asked to sign the book on the sign in table. There were 29 families in attendance with 45 children.
When it was time to begin, the P2P team called the parents to the reading area, and encouraged parents to sit on the floor with their children. Most parents sat with their children, but some sat on the chairs on the sides and back of the room, while their children were in the middle. More fathers sat in the chairs, while mothers mostly sat with their children.

The P2P team started off talking about Oxytocin, and how important it is, and that reading together helps to create it. There was an explanation about what P2P and MCEC is, then the reading began.

During the reading, there was a toddler in the back, dancing around and stamping his feet. His mother, seated nearby in a side chair with another young mother, was not paying attention to him or the story, and when she did pay attention to him, she seemed amused, and did not realize how disruptive his behavior was to the event. No one said or did anything regarding his behavior during the TMAS event.

The reader read the story slowly, pausing to ask questions of the children. The slides were changed in sync with the story. The reader was presented with the book that the children had signed for her to take home.

After the story finished, signs were held up with each colored apple on it, and the facilitators lead the way to the areas where each group was to have discussion and make their craft. Some facilitators asked yes/no questions, then warmed up and asked more thinking questions. Other facilitators had more active participation from their groups, and could ask more open ended questions. Each facilitator had a teen as a scribe. Questions asked at some of the four groups: What did you like? What about that…? Who would think to make a castle in their room? Can you tell how they perceived Velvet
as different? How would you describe Velvet? What did she have on her nose? What makes you different from your friends? What did they think of Velvet’s apple? What did they think of Velvet’s invitation to her party?

After the discussion, the craft began, decorating crowns. Children and parents glued on gems, which took time to dry. Parents carefully held crowns with wet glue as they left, and some children were able to wear their crowns.

As crafts completed, there was a bottle neck for parents to leave, due to the small hallway and the location of the sign in table, which was where each family received their take home bag. In the take home bag was a copy of Odd Velvet, a hand out about Parent to Parent resources, a hand out about Oxytocin, and a hand out about the importance of reading. Each child also received a bag with an apple and a starburst. Parents were invited to take the P2P survey.

4. Valrico, FL 12/4/16

The RSVPs were managed by the local YMCA, who advertised inside their facility, on their website, and on their marquee by the road. The P2P team had also completed emailed and Facebook advertising. The local base, MacDill AFB, is an hour away near Tampa, but most families live out near Valrico due to cost of living on or near base. There were 14 families that RSVP’d, of which four came to the TMAS event. The majority of the families were nonmilitary.

The TMAS occurred in one of the smaller group exercise rooms at the YMCA. There was a check in table near the door and a table with a projector adjacent to it. Set up was done by the P2P team and their teenage children and their friends from school for volunteer hours. In front of the reader’s chair there were yoga mats for sitting and chairs
set up behind them. There were three stations around the room for facilitation of the discussion and planning of the group activity, a dance. There were a total of six families in attendance with seven children. All but two children were younger than 6 years old. As families came in, they were offered a choice of an animal mask, which determined their groups.

The parents sat in the chairs and the children sat on the yoga mats. One young child, approximately 2 years of age, ran around the room, throwing snacks off the table, turning off the power to the projector, and yelling and running. His mother ran after him, but was unable to contain his energy.

The book read was *Giraffes Can’t Dance*. The reader was Maria Rojas, a young woman who was the Director of Activity and swim instructor at the YMCA. She read rapidly, occasionally pausing to ask questions. Ms. Rojas does not have children.

The group then broke into two groups for discussion, lead by the teens. One teen asked questions while another teen wrote summary answers the children gave on large paper boards. Questions asked of the children were: What did you enjoy most about the story? How did Gerald feel about dancing at the jungle dance? How do you think Gerald felt once he learned to dance? What lesson is for us in this story? What did Herald have to do in order to become a dancer? How does Gerald feel at the end of the story compared to the middle when the animals were laughing at him? Were the animals being nice when they laughed at Gerald? How did you think their laughter made Gerald feel? Is it important that everyone do the same thing well? How do you feel when you can’t do something others can? Has anyone ever helped you learn something? Have you helped someone learn something?
Each group created their signature dance move for the activity. Then both groups
came back together and showed each other the dance moves to music, and then there
were several songs that played, with associated dances.

At the end, parents were given a copy of *Giraffes Can’t Dance*, and an invitation
to complete a P2P survey about the TMAS. On the table were handouts the parents could
take on a variety of topics, including literacy guides and A to Z books.

5. Fort Sam Houston 12/6/17

The TMAS was taking place at an established HUG group, a play group for
parents and children 3 years old and younger. The TMAS took place in a youth center on
base, in a large gymnasium. Near the door there was a check in table with books and
information for parents. There were bikes and blocks and various stations with different
types of toys the children could play with. On the far side of the room, there was a
cordoned off area with baby gates filled with matts, large animal shaped cushions, some
quiet play toys, the projector and computer, and a chair for the reader.

The P2P team gathered everyone to the sitting area, inviting parents to sit with
their children, which almost all did. The P2P team spoke about what MCEC and P2P
does. The base commander spoke for a moment and then she did a somersault, stating
she was tempted by all the matts. She said she usually gets a better response out of the
middle schoolers. The MWR director also spoke for a moment, talking about the
importance of their relationship between themselves and P2P.

The reader was a local TV celebrity, Cleto Rodriguez, who’s TV spot “where’s
Cleto” is popular on base. He has children. He read *Click Clack Moo: Cows That Type.*
He could tell pretty early on that the children were too young to follow along, but still
paused, asked questions, and mostly read to the adults in the room, making it a fun experience. The children were too young for the large group storytelling; they were unable to follow or sit still. Parents were trying to make them sit still and be quiet. There was no discussion break out groups, nor an activity related to the book after the reading.

There were 25 families at the event, all with children under 4 years of age. Parents were given a copy of *Click Clack Moo: Cows That Type*, take home questions, and a snack to go. There was a Chick-Fil-A cow at the event, and many children, adults, and the base leadership took pictures with the costumed cow. Chick-Fil-A was one of the sponsors of the event.

6. Fort Rucker 1/17/17

The TMAS took place at the Army Aviation Museum on base. The museum was large, with two levels, and many different examples of planes from the first flight to modern warfare aviation. Several large open areas were set aside for the TMAS. The craft area was a direct line of sight from the front door, set back about 500 feet. Two different crafts were set out, making a chocolate parachute and assembling a foam cutout airplane. Between the front door and the craft area was the sign in area. There were two copies of the list of those that RSVP’d in alphabetical order and then a paper sign in for those that showed up to register. Each family was given a different color necklace with a paper airplane cutout attached, to place them in each group. There were six groups.

Behind the sign in table, between it and the crafts, was the table to sign the book to be given to the reader. After signing in, families were encouraged to walk around the museum until it was time to gather for the TMAS. The TMAS reading occurred on the carpeted area that usually holds chairs for presentations, but all chairs were removed for
the TMAS. A large screen at the back and several large TVs at the sides showed the pages of the book as they were read.

At the time the TMAS was to begin, first there was an introduction by P2P, explaining what P2P and MCEC does. Then Garrison Commander Miller gave an introduction. The reader, Major General William Gaylor, Commanding General on base, read *Mercedes and the Chocolate Pilot*. The reader read slowly, using voices for different characters. MG Gaylor has children and grandchildren. Families sat together on the carpet.

After the reading, the facilitators and the scribes, volunteers from Voice of the Single Soldier, lead each groups to different areas with balloons matching the color helicopter necklace they received upon entering. Some groups did better than others with engaging their participants. Some scribes wrote little, some wrote summaries, some wrote everything. Questions asked at some of the groups included: What is Mercedes feeling? Why was she scolding? How did the story in the newspaper make her feel? How did the pilot feel when the kids were in front of him? Is there anything you want to share about this story? Where is Berlin? Where is Germany?

After the discussion, families headed to the craft tables. Parents helped children create the craft and there was a volunteer at each table with a working demonstration. When they had it done, parents went to the second story balcony and dropped the chocolate parachute to their waiting children, making for an excellent photo op. During this craft time, parents were also provided their copy of the book, and they could get it signed by MG Gaylor. There was quite a line by the Commanding General, as parents wanted the books signed, as did some of the older children.
Families were given a snack to go, as there is no eating or drinking allowed at the museum.

There were 41 families in attendance with 90 children. Of those, 23 families met 6-10 age range.

7. Lackland AFB 4/1/17

The TMAS took place during a fair for children on base. The fair included games for the children, tables with resources for parents, and snacks. Most of the fair was in the gymnasium, but the TMAS was down a hallway in a learning/childcare area. P2P had the main room and several adjacent rooms for the groups.

There were technical difficulties with the tablets meant to register people, so paper was used. Index cards were used to indicate which group families would go to, marking 1, 2, or 3. The floor was empty of chairs, but there were couches in the edges of the room, and there were a few parents, fathers mostly, who did not sit with their family on the floor, and were also engaged with a mobile device rather than the TMAS event.

The reader was a pilot, in his flight uniform, Lieutenant Colonel McClintock, reading *Mercedes and the Chocolate Pilot*. The Lt. Col.’s wife began the reading session by singing and playing on the guitar a song she wrote, called “Candy Man,” inspired by the book. One of the P2P team members introduced them, and talked about what P2P and MCEC does. Lt. Col. McClintock read rapidly, but paused, asking questions of the kids.

After the reading the groups split up, and some groups did better than others. There were facilitators that had more experience than others, and also some groups that got more younger children than others. There were 25 families that attended the TMAS,
but not all stayed for the discussion groups. Families were given copies of the book read as they left. There was no activity or snack as they were part of the larger fair.

8. Abilene, TX  4/6/17

The TMAS was held in downtown Abilene, next to the public library, at NCCIL, the National Center for Children’s Illustrative Literature. The reading occurred in a large carpeted room with a few cushioned seats. On the walls were featured two or three artist’s original artwork from selected illustrated books. The discussion and craft was set up in a small room next to the exhibit space, in a circle of tables.

There were technical difficulties with opening the PowerPoint on the provided laptop, causing problem solving and a phone call to Jen for support. Eventually the PowerPoint was loaded from the cloud.

Volunteers were from the local high school cheerleading squad, friends of the P2P’s children.

Only three families arrived. One family was of retired military, one family active duty, and one caregiver of older special needs individuals.

The reader was an author. She read *Click Clack Moo, Cows That Type* in 5 minutes, with no pauses or questions. She attempted to get the audience to say “click clack moo!” with her as it came up in the story with mixed results.

After the reading, the group moved to the side room. The discussion was drawn out by the facilitators and the P2P, due to the time that the cow from Chick-Fil-A was to arrive and the unexpected brevity of the reading. The cheerleaders scribed, and they wrote everything the children said, drawing pictures, and filling three large post-it note
sheets. Each child was encouraged to participate, even the special needs individuals, but one family’s children were more verbal than others.

The craft was making the cow masks by gluing different colored papers and eyes on a paper plate and attaching a stick. After the craft, there was still half an hour until the cow arrived. The families were encouraged to look at the exhibit. Then the cow arrived and the families and the cheerleaders took pictures in the gift shop. Several purchases were made in the gift shop. Families were given their own copy of the book read to take home.

9. Fort Bliss 4/13/17

The TMAS took place in the same space as the last time, this time a better timeslot. The set up was to the left of the room as opposed to the right as was set up last time. Check in was the last table closest to the door set perpendicular to the rest of the tables, and the crafts were set up on the rest of the tables, with plastic tablecloths protecting the tables.

After waiting to see if anyone else would show up, the P2P called people to the front. Everyone sat on the floor in front of the craft tables, except for a pregnant mother who was given a chair to sit on in the group. P2P introduced themselves and MCEC, and the reader. The reader, Mrs. Emma White, was a senior command staff spouse, and a friend of the P2P team. The book was While You Were Away. Mrs. White reader read slowly, asking questions and getting the kids involved in the story. The reader was a parent. Tara’s daughter operated the slides from the back of the room. After reading, Mrs. White was presented with a copy of the book that the children had signed when their parent’s had signed in.
Tara, a member of P2P and a teacher, lead the discussion. She didn’t have a scribe, but got meaningful responses from each of the children. The discussion included what they thought was important and what a wish was. The discussion also included helping the children place themselves into the character’s perspectives.

The craft was painting a tree/drawing their hand. Small dollops of green paint, paint brushes, brown crayons, and paper was set up, as well as strips of paper to make a ribbon with their wishes to glue on.

The take home snack was Spanish sugar cookies in the shape of a yellow ribbon. Families were given a bag with the book, a bookmark, and additional resources.

There were six families (two of which were the P2P team member’s) with 11 children. Three families had children too old or too young to participate in the study.

10. Fort Hood 4/23/17

The TMAS took place at the same building and room as last time. The front doors remained locked and needed to be opened whenever people needed to be let in. The projector had been removed from the room since the P2P last use, and no one in P2P had been notified. The check in table was set up inside the long main room to prevent the problems from the previous TMAS during the check-out period.

Four group areas were set up as before, except the center room did not have dividers this time. The main room had some chairs at the edges, which parents chose to sit in rather than sitting with their children. The reading room has tile floors. The center room with the break out groups had four tables with chairs. Two groups were tasked to be in the center room and one group would be in the main room with two sets of tables and chairs, close to the check in table and away from the reading area. Facilitators and
scribes were briefed after the set up but before the families arrived regarding the intention of TMAS and what their role is.

As families entered and checked in, there were necklaces assigned, mostly by asking what color the child would like, one necklace per family. Children were encouraged to sign a copy of the book for the reader.

The P2P called the families to the reading area and asked them to sit together. They explained who and what P2P and MCEC does. The reader was the Garrison Commander Colonel Todd Fox, a family friend of the P2P team. Col. Fox sat in the center while two P2P team members sat to the side and also held books up due to the lack of projector. The book read was *How to Bake an American Pie*. Col. Fox read the entire book upside down. He read slowly, pausing to ask questions of the kids. Col. Fox has several children.

After reading the reader was presented with the book that children signed at the sign in table. Then, using balloons and signs with colors matching the necklaces given out at sign in, the facilitators and scribes lead the way to the group sections. The groups were unevenly split by age, with one group getting most of the pre-k families. That group had the most difficulty with the discussion session.

The groups discussed the book and what it means to be American, and also where they have lived in their lives. The families were given a map and asked to mark with a star where they were born, where their father and mothers were born, and also to color all the places they have lived.
The craft was making a paper pie by gluing blue and red colored pieces onto a paper plate, then making lattice work by gluing brown strips on top, and whipped cream by gluing on cotton balls.

Families were given a bag with the book and take home educational handouts, as well as Little Debbie pies to go.


