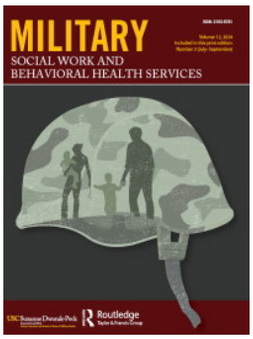

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REVIEW ARTICLE

Education and Support Program Design for Reserve-Connected Children: A Systematic Review

Ratchanok Phonyiam[a], Wenxin Bian[b] and Margaret C. Wilmoth[c]

[a]Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand; [b]School of Nursing, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA; [c]US Army (ret), Chapel Hill, North Carolina, USA

ABSTRACT

Introduction: Military Reserve Component (RC) children have less access to Department of Defense child and youth programs due to policy-related restrictions and geographic distance. Yet, they experience the same, and oftentimes, more stresses when a parent is deployed. Since schools are known to provide stability for children at times of stress, having school-based support programs designed for these children is important. This systematic review identified and analyzed education and support programs available through schools designed for RC connected children in the United States between 2001 and 2024.

Methods: We followed the PRISMA guideline to screen the related publications that were identified from six databases, including PubMed, Scopus, CINAHL, PsycInfo, ERIC, and Education. 1,118 publications were screened for eligibility, and 72 full-text publications were assessed. Four publications that met all the criteria were extracted and synthesized for this systematic review.

Results: Findings revealed only two programs designed specifically for RC children were found in the literature. These included: 1) After Deployment, Adaptative Parenting Tools and 2) Staying Strong With Schools. This review further categorized the identified measures into three outcomes included child adjustment and behavior, child social support, and parenting practice.

Conclusions: Findings underscore a need for school systems to collaborate with experts to develop education and support programs specifically designed to support RC connected children.

KEYWORDS
Education; support; program; reserve-component; children

Introduction

The Armed Forces of the United States is a highly valued workforce in the country because of its role in our national security. Approximately half of the force serves on Active Duty (AD) status and the other half serves in one of the Reserve Components (RC) (Dipietro et al., 2019) (Office of the Deputy Assistant Secretary of Defense for Military Community & Family Policy, 2021). Title 10 and Title 32 of the U.S. Code distinguish between the federal AD force, the federal reserve components, and the National Guard. Title 10 governs the federal AD force, which is on duty 365 days a year and their reserve counterparts, while Title 32 outlines the National Guard as a state force, controlled by each state's governor. RC members are allowed up to 36 days of Inactive Duty Training (IDT) annually, typically about 24 days of IDT and 12 days of annual training. In contrast, AD members deploy more frequently, for longer periods, and face additional stressors due to deployments and frequent relocations, typically every 1-3 years (Veri et al., 2021).

There are numerous educational and support programs available to AD families that assist in helping families cope with the demands of military service. For example, the Army's Morale, Welfare and Recreation (MWR) program (United States Army, 2022) and the Department of Defense Schools located on some active duty bases (Department of Defense Education Activity, 2022). While active duty families receive these programs as part of a 'paid benefit,' RC families lack access to many of these programs (Department of Defense, 2021) due to the geographic disbursement of RC families, funding differences, and regulatory limitations as restrictions imposed by

CONTACT Ratchanok Phonyiam Ratchanok.pha@mahidol.ac.th Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, 270 Bangkok, Thailand 10400.

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federal regulations that limit access to certain federally funded activities or services (e.g., eligibility for children to attend Department of Defense Education Activity (DODEA) schools) for reserve component members in a part-time duty status (Mogil et al., 2015). RC-connected children attend schools in civilian communities that are distant and disconnected from the military culture. This denies RC-connected children from receiving tangible and intangible benefits from these programs.

Serving in the military increases the risk of psychosocial burden for not only the service member, but also for their children (Cunitz et al., 2019; Hajal et al., 2020). A meta-analytical review reported that the impact of parental military deployments on children's mental health increased significantly after the 9/11 terrorist attacks in 2001 (Cunitz et al., 2019). Children face a variety of challenges at all stages of deployment, as they prepare for the absence of their parents and re-adjust to the return of their parents' months or years later (Trautmann et al., 2015; Williamson et al., 2023). A report suggests that developmental delays may occur in children younger than 6 years old due to parental deployment (Nguyen et al., 2014). This study (Nguyen et al., 2014), along with many others (Creech et al., 2014; Williamson et al., 2018), only included children whose parents serve on active duty.

Much less is known about the effects of deployment on RC-connected children, yet there are many who are impacted from parental military service, particularly in the past 20 years. In 2021, nearly two-thirds (64.9%) of RC family members were children followed by spouses (34.9%) and other dependents under age 21 years (0.2%) (Office of the Deputy Assistant Secretary of Defense for Military Community & Family Policy, 2021). Of those RC children, approximately two-thirds of them are of school age –between the age of five (Kindergarten) through to Grade 12 at around the age of 18 (Office of the Deputy Assistant Secretary of Defense for Military Community & Family Policy, 2021).

What little that is known suggests that RC-connected children are at risk for some of the same concerns as those from active-duty families. Military-connected children who are dependents of either active duty or reserve personnel are at greater risks of substance use and experience physical violence (Sullivan et al., 2015). Compared with nonmilitary-connected peers, military-connected children had a significantly higher odds of bringing a gun to school (Odds Ratio [OR] 1.73, 95%% Confident Interval [CI] 1.66-1.80) and being in a fight threatened with a weapon (OR 2.20, 95% CI 2.10-2.30) (Sullivan et al., 2015). A recent review found that RC connected children demonstrated behavioral changes in the classroom and at home as they experienced episodes of anxiety and fear from their parental deployments (Veri et al., 2021). These data imply that RC-connected children would benefit from targeted and tailored education and support programs.

A small but growing body of literature has highlighted the need for evidence-based interventions to support military children. For example, a 2019 report, *Strengthening the Military Family Readiness System for a Changing American Society* from the National Academies of Sciences, Engineering, and Medicine, highlighted several gaps as it relates to the military family and military readiness, including, among others, a lack of longitudinal data on stress and resilience in military children, lack of neurobiological research on development in military children as it relates to stress, and the lack of evaluation of any program offered to either active component or reserve component families (National Academies of Sciences et al., 2019). A gap in this report was the failure to draw attention to the lack of knowledge about and lack of availability of services specifically targeted to support RC-connected children and their unique family needs. While there has been some effort at scaling up of preventive health services, such as the "Families Overcoming Under Stress (FOCUS)" project (Lester et al., 2012; Lester et al., 2016), this program just as many others, is solely located on/near active duty military bases. In 2014, a previous systematic review found only one school-based intervention with military-connected children who were dependents of U.S. service members or reserve component members (Brendel et al., 2014). This reviewed study was a dissertation aimed at examining the effectiveness of group counseling intervention, Children of Deployed Parents-Group, on 65 third through fifth-grade children's anxiety, self-esteem, and internalizing and externalizing behaviors (Mitchum, 1999). This alone highlights a lack of evidence available to inform supports for reserve-connected children. The purpose of this systematic review was to identify and analyze education and support programs designed specifically for RC connected children in the United States in the 20 years following the attacks on September 11, 2001.

Methods

This review was designed to identify, map the key findings, and highlight gaps in peer-reviewed, empirical studies of education and support program design

for RC-connected children. Our search protocol was developed using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2020 statement (Page et al., 2021).

Searches and data sources

One reviewer, in collaboration with the librarian, searched PubMed, Scopus, CINAHL, PsycInfo, ERIC, and Education Full Text databases for quantitative studies published in English (Supplement 1). The Medical Subject Headings (MeSH) search was conducted using the following search strategy (Military Personnel OR Military Family OR Military Health OR military OR Armed Forces OR Air Force OR Army OR Submariner OR Submariners OR Marines OR Navy OR Sailor OR Sailors OR Soldier OR Soldiers OR Coast Guard OR National Guard OR veteran OR veterans OR National guard OR Reserve Force OR Reserve Component) AND (Reserve OR Reserves OR reservist OR Reservists) AND (Child OR child OR children OR childhood OR kid OR kids preadolescent OR preadolescents OR prepubescent OR Adolescent OR adolescent OR adolescents OR adolescence OR youth OR youths OR teenager OR teenagers OR teenaged OR teen OR teens OR juvenile OR juveniles OR Pediatrics OR pediatric OR pediatrics OR pediatric OR pediatrics OR family OR family OR families). Reference lists were also searched to identify additional studies.

Study selection

All duplicate citations were removed. The publications were imported into Covidence, a software program that involves a three-step process: screening, full article review, and data charting process (Veritas Health Innovation, 2022). All titles and abstracts were screened to identify studies that met the inclusion criteria: 1) peer-reviewed publications reporting outcomes of programs for RC connected children using quantitative methods in the U.S.; 2) publications that were published in English; and 3) publications that were published between January 1, 2001, to January 7, 2024. Dissertations, reviews, and consensus statements were excluded because they did not meet the eligibility criteria.

Data collection process and data items

Two researchers jointly developed a data charting form to extract data and organize the study characteristics, sample characteristics, findings, and implications of each included publication. One researcher abstracted the data on each study's characteristics and findings; another researcher then checked the abstracted data. The conclusions and implications of each study were entered into a data charting form.

Data synthesis

The findings from four publications were synthesized through configuration, which entails a set of conclusions aggregated from each publication and captures the ideas of patterns and designs across publications (Sandelowski et al., 2012). In this review, synthesis by configuration followed the bottom-up approach as the data were derived from various sets of findings without a priori conceptual framework (Sandelowski et al., 2012). Two researchers met bi-weekly over six months from October 1, 2021, to January 15, 2024, to discuss the included publications, resolve disagreements, and generate synthesis of education and support program designs.

Results

A total of 1118 publications were screened for eligibility (Figure 1). Of these, 289 duplicates were removed, and 829 publications were retrieved for abstract screening. A review of the abstracts resulted in the exclusion of 757 publications as they did not meet eligibility criteria. A total of 72 full-text publications were assessed, and 68 of these were excluded due to wrong study design such as qualitative method, dissertation, or review article ($n = 42$), wrong population ($n = 17$), wrong publication years ($n = 5$), or not related to either an educational or support program ($n = 4$). A total of four publications were selected into this systematic review (See Table 1).

In this review, the included studies were conducted in the United States. The publication years ranged from 2014 to 2020. Four publications used quantitative design (Gewirtz et al., 2014; Gewirtz et al., 2018; Ohye et al., 2016; Ohye et al., 2020). Across four publications, participants are as either military families comprising parents (Gewirtz et al., 2014), military families comprising parents and children (Gewirtz et al., 2018), military parents, children, and teachers (Ohye et al., 2020), or school professionals comprising teachers, guidance counselors, nurses, psychologists, subject specialists, and classroom aides (Ohye et al., 2016).

Synthesis of results

This review summarizes the current literature on education and support programs as well as identifies

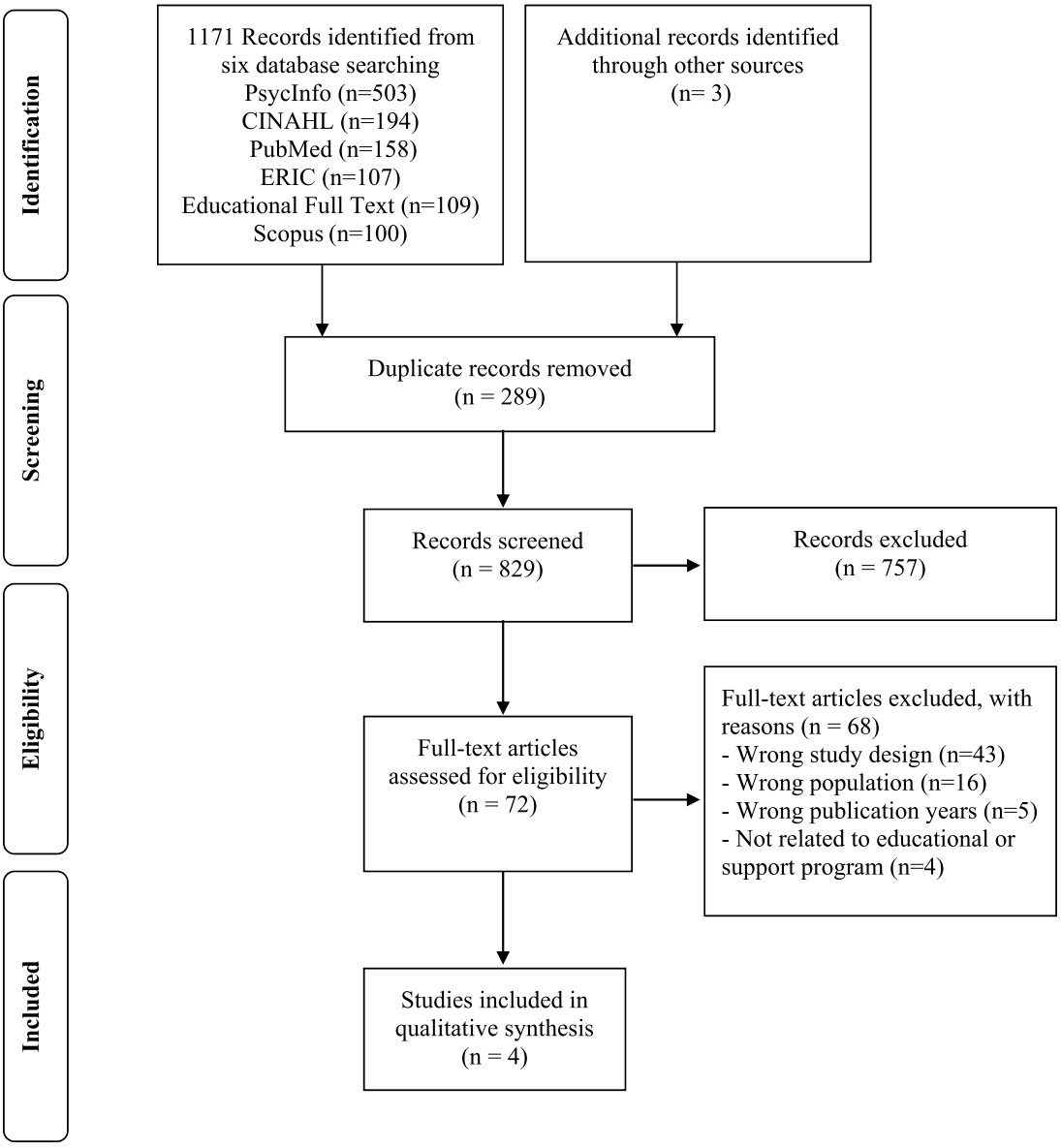

Figure 1. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) flowchart.

outcome measures used for children, families, and school personnel. Across four publications, we abstracted information using several categorizations including education and support programs, contents, and key findings (see Table 2). We also abstracted psychometric properties of measures across publications and illustrated them in Table 3.

Education and support programs

Four publications described two educational and support programs (Gewirtz et al., 2014; Gewirtz et al., 2018; Ohye et al., 2016; Ohye et al., 2020). These programs were the 14 wk of After Deployment, Adaptative Parenting Tools (ADAPT), the 12 months of ADAPT, a pilot testing of the Staying Strong with Schools (SSWS), and the 12 months of the SSWS.

After Deployment, Adaptive Parenting Tools (ADAPT) was based upon the Parent Management Training—Oregon (PMTO) model and adapted to the military culture for National Guard and Reserve families with at least one child between the ages of 4–12-years old. ADAPT was determined to be feasible and acceptable in 42 families having at least one parent who had deployed to the current conflicts in Iraq or Afghanistan (Gewirtz et al., 2014). The ADAPT was composed of five positive parenting practices of skill encouragement, positive involvement, family problem-solving, monitoring, and effective discipline. The results showed that families preferred a community-based parent education program with a source of peer support groups (Gewirtz et al., 2014). In 2018, Gewirtz and colleagues tested the ADAPT

Table 1. Description of four study characteristics.

Citation	Setting	Design/ Method	Purpose	Sample Characteristics				
				Service Component	Sample Size	Age (years)	Child Age/ School Grade	Gender
Gewirtz et al., 2014	Community location: church, library, and community college in Minneapolis/St. Paul metropolitan area	Quantitative study/RCT	To report early data from the first two cohorts of 42 parents who were randomly assigned to the ADAPT treatment condition	Reserve	42 military national guard and reserve families comprising 75 parents	NR	4–12 year-old children	Male 48% Female 52%
Ohye et al., 2016	Civilian elementary schools in Mashpee, Massachusetts	Quantitative study	To test the feasibility and acceptability of the Staying Strong with Schools (SSWS) intervention	Reserve & Active Duty	115 school professionals comprising teachers (61.5%), guidance counselors, nurses, or psychologists (6.4%), and subject specialists and classroom aides (28.4%).	NR	NR	NR
Gewirtz et al., 2018	Midwestern state	Quantitative study/RCT	Hypotheses 1. Parents in the ADAPT intervention group will show greater 1-year pre-post change in the proximal outcome of effective parenting practices relative to the control condition. 2. Pre-post change in effective parenting will be associated with improvements in child adjustment at 1 year.	Reserve	336 military national guard and reserve families comprising 314 mothers, 294 fathers, 336 children	Mothers' ages ranged from 23 to 51 Mean (SD) = 35.67 (5.89), Fathers' ages ranged from 23 to 58 Mean (SD) 37.75 (6.54)	4–12 year-old children	Parents Gender, % Female (n) control Group = 52.1% (124) Intervention Group = 51.3% (190)
Ohye et al., 2020	Civilian elementary schools in Northeastern United States	Quantitative study	Hypotheses Over the school year, compared to their counterparts assigned to the control condition, 3. Parents of students assigned to Staying Strong with Schools (SSWS) would report decreases in emotional and behavioral distress in their children 4. Military-Connected Children (MCC) in intervention schools would report increases in perceived social support.	Reserve & Active Duty	56 military-connected parents and their child and 40 teachers (data not shown)	Parents Control group: Age Mean (SD) = 36.95 (6.96) SSWS group = 39.4 (7.00) Children in control group= 8.7 (2.25) and SSWS = 7.4 (1.94)	Grade 1-6	Parents Gender, % Female (n) control group = 58.2 (20) SSWS group = 66.7 (14)

Note: RC = Reserve Component, NR = Not reported, RCT = Randomized Controlled Trial, ADAPT = After Deployment, Adaptive Parenting Tools, SD = Standard Deviation.

Table 2. Findings on education and support program.

Citation	Program	Program description	Frequency and Duration	Mode of Delivery	Findings
Gewirtz et al., 2014	After Deployment, Adaptive Parenting Tools (ADAPT)	Five positive parenting practices 1. skill encouragement 2. positive involvement 3. family problem-solving 4. monitoring 5. effective discipline	Weekly 2-h groups for 14 wk	Active teaching methods such as role play, practice, and discussion	• The program is both feasible and acceptable. 78% of families invited to participate in at least one session. • Families preferred a community-based parent education program with a source of peer support group rather than only a mental health resource.
Ohye et al., 2016	Staying Strong with Schools (SSWS)	Five components for all school professionals: 1. an introduction to military culture including active duty versus reserve components, differing effects on families, and deployment stress. 2. a 20-minute documentary of life experience from two MCC 3. an overview of content from the "Educator Tool Kit to Increase Awareness and Support to Military Children in School" 4. an overview of the "Classroom Activities Guide to Support Student Resilience" 5. An explanation of the two steps involved in developing the individual resilience support plans (IRSPs) for MCC. The guidance counselor is also trained to take on the RSL role and to develop specific intervention to be applied for MCC.	A 60-minute training at the beginning of the academic year for all school professionals A year-long training for the school guidance counselor	The training Liaison Trainer provides phone support and guidance to the counselor.	• Compared to pre-training, after a training participates reported a higher confident level for was reported for understanding family stresses associated with a parental deployment ($p < 0.001$), knowledge of how a MCC might express deployment stress reactions ($p < 0.001$), preparedness to implement specific resilience supports to MCC in their classroom ($p < 0.001$), ability to guide MCC to appropriate resources to support them during parental deployment ($p < 0.001$), and ability to initiate a conversation with a parent regarding concerns a parent might have about their child while the other parent is deployed ($p < 0.001$). • 81.8% indicated they would discuss parental deployment with an MCC.
Gewirtz et al., 2018	After Deployment, Adaptive Parenting Tools (ADAPT)	Six parenting skills 1. teaching through encouragement 2. discipline 3. problem solving 4. monitoring 5. positive involvement with children 6. emotion socialization	Weekly 2-h groups for 14 wk	Active teaching techniques and according to the PMTO guidelines	• The ADAPT families significantly increased effective parenting practices compared to control group ($p < .01$). • Changes in parenting practices significantly predicted the child adjustment ($p < .01$). • Change in parenting accounted for 2% of explained variance in child adjustment's change as a moderate effect.
Ohye et al., 2020	Staying Strong with Schools (SSWS)	Three components 1. deployment cycle and typical behavioral and emotional responses during and post deployment 2. facilitating information exchange and connection between the classroom teacher and parent 3. raise awareness of the school's military connected students, families, and service.	A 60-minute training at the beginning of academic year for all school professionals A year-long training for the school guidance counselor	The training Outreach of school counselor to MCC parents	• SSWS had a significant effect on perceived social support ($p = .007$) and in decreasing internalizing symptoms ($p = .005$).

Notes: PMTO = Parent Management Training—Oregon; NR = Not report; N/A = Not applicable; RSL = Resilience Support Liaisons;. MCC = Military-Connected Children; PMTO = Parent Management Training-Oregon Model.

Table 3. Psychometric properties of measures.

Outcomes	Measures: Scale	Measures: Subscale	Administration	Reliability	Validity
Child Adjustment and Behavior	**Self-Report of Child Adjustment** The child report scales included the school problems composite	**1) The Behavioral Assessment Scale for Children (BASC-2)**	Self-report	Good internal consistency and test-retest reliability (Not reported α)	Construct validity and convergent validity with the Child Behavior Checklist
	T score from the Behavioral Assessment Scale for Children and the Loneliness and Social Dissatisfaction Scale	**2) The Loneliness and Social Dissatisfaction Scale**	Self-report	α range = .72–.87	NR
	Adult Report of Child Adjustment Parent and teacher reports of the adaptive skills composite T score from the Behavioral Assessment Scale for Children	**1) The Behavioral Assessment Scale for Children (BASC-2)**	Self-report	α range = .78–.94	Construct validity and convergent validity with the Child Behavior Checklist
	Behavioral Assessment System for Children, Second Edition Parent Rating Scale (BASC-2 PRS) was used to measure both adaptive and problem behaviors in the home and community settings	NR	Self-report	α = 0.97	Validity well-established for nonclinical and clinical populations of children and adolescents
Child Social Support	**Child and Adolescent Social Support Scale** was used to measure perceived social support from four of the originally included sources: classmates, teachers, people in school, and close friends	NR	Self-report	α = 0.96	NR
Parenting Practice	**Effective Parenting Practices** measured with five previously validated social interaction learning (SIL) indicators	**1) Problem-solving outcome** evaluating the quality of the parent and child solution, extent of resolution, apparent satisfaction at the outcome of the discussion, and likelihood the family would put this solution to use.	Direct observation of parent-child interactions during structured family interaction tasks (FITs)	α = .87–.89 ICC = .88–.94	FIT codes demonstrated ecological validity, construct validity, and sensitivity to change with at-risk families
		2) Harsh discipline assessing overly strict, authoritarian, erratic, inconsistent, or haphazard parenting practices.		α = .75 ICC = .58–.78	
		3) Positive involvement evaluating parent's warmth, empathy, encouragement, and affection.		α = .75–.76 ICC = .76–.84	
		4) Skill encouragement reflecting parent's ability to promote children's skill development through encouragement and scaffolding strategies.		α = .76–.83 ICC = .72–.76	
		5) Monitoring assessing parents' supervision and knowledge of their child's daily activities.		α = .60–.71 ICC = .74–.64	

Note: NR = Not reported; α = Cronbach's alpha as a measure of internal consistency; ICC = Intraclass Correlation Coefficient.

of six parenting skills by adding one skill which was emotion socialization (Gewirtz et al., 2018). The results showed that the ADAPT families significantly increased effective parenting practices compared to the control group ($p < .01$). Changes in parenting practices significantly predicted the child adjustment on a parent deployment ($p < .01$) (Gewirtz et al., 2018).

The Staying Strong with Schools (SSWS) program was developed with the intent of preparing school staff to better support military-connected children (MCC) of active duty and reserve component who live in civilian communities (Ohye et al., 2016). The SSWS was pilot tested over one academic year. The SSWS comprised five components: military culture, the documentary of MCC life experience, the "Educator Tool Kit to Increase Awareness and Support to Military Children in School", the "Classroom Activities Guide to Support Student Resilience," and individual resilience support plans. After program implementation, educators reported significantly higher confidence levels such as understanding of family stress associated with a parental deployment and preparedness to implement specific resilience supports to children in their classroom, ability to guide children to appropriate support resources, and ability to initiate a conversation with a parent about their child. Later, the researcher implemented the SSWS of three components including 1) deployment cycle and typical behavioral and emotional responses, 2) facilitating information exchange and connection between the classroom teacher and parent, and 3) raising awareness of the school's military connected students, families, and service. The results showed that the SSWS had a significant effect on perceived social support by children in decreasing internalizing symptoms ($p = .007$; $p = .005$, respectively) (Ohye et al., 2020).

Psychometric properties of measures

Use of reliable and valid measures is important when discussing effectiveness of the impact of any program. Therefore, it was vital to assess the psychometric properties used in each described program. Table 3 provides an overview of all measures used in the studies cited above, reliability, and validity.

Reliability is defined as the extent to which the measurement error was minimized (DeVellis, 2012). In interpreting the internal reliability coefficient (Cronbach's alpha, α), the guidelines suggested by DeVellis in 2012 were used: .65 to .70 is minimally acceptable; .70 to .80 is respectable; .80 to .90 is very good, and more than .90 is excellent but indicates possible redundancy (DeVellis, 2012). Inter-rater reliability was assessed by using intraclass correlation coefficient (McKeough et al., 2022). According to Koo and Li (2016) suggestions, ICC less than .5 is poor; between .5 and .75 is moderate; 0.75 to 0.9 is good, and greater than 0.90 is excellent reliability (Koo & Li, 2016).

Validity is the extent to which an instrument measures what it was intended to measure (Lynn, 1986). This review focuses on three types of validity. First, content validity is defined as the degree to which the instrument's items represent the content. Second, criterion-related validity, either concurrent or predictive, is defined as the degree to which scores on the instrument are correlated with some external criteria. Third, construct validity is defined as the degree to which the instrument measures the construct under investigation (Knapp, 1985).

Child adjustment and behavior. The Self-Report of Child Adjustment, used in the ADAPT program by Gewirtz and colleagues in 2018 (Gewirtz et al., 2018), is a child self-report scale compiled from two previously developed measures: the school problems composite total score from 1) the Behavioral Assessment Scale for Children (BASC-2) developed by Reynolds and Kamphaus in 2004 (Reynolds & Kamphaus, 2004); and 2) Loneliness and Social Dissatisfaction Scale developed by Asher and Wheeler in 1985 (Asher & Wheeler, 1985). The BASC-2 indicated good internal consistency and test-retest reliability. This scale also established construct validity and convergent validity; the degree to which two measures of constructs that theoretically should be related, such as the Child Behavior Checklist, are correlated (Gewirtz et al., 2018). The Loneliness and Social Dissatisfaction Scale indicated good internal consistency (α range .72–.87); however, no validity information has been reported. However, since no reliability or validity was provided for this new measure, the Self-Report of Child Adjustment study findings need to be interpreted cautiously (Gewirtz et al., 2018).

The Adult Report of Child Adjustment, used in the ADAPT program by Gewirtz and colleagues in 2018 (Gewirtz et al., 2018), is a parent and -teacher self-report of the adaptive skills composited total score from the BASC-2 (Reynolds & Kamphaus, 2004). In this report, the BASC-2 indicated acceptable internal consistency (α range .78–.94). The BASC's construct validity and convergent validity were established as mentioned earlier (Gewirtz et al., 2018).

Behavioral Assessment System for Children, Second Edition Parent Rating Scale (BASC-2 PRS), used in the SSWS program by Ohye and colleagues in 2020 (Ohye et al., 2020), is a self-report used to measure

both adaptive and problem behaviors in the home and community settings (Kamphaus & Reynolds, 2007). The BASC-2 PRS indicated acceptable internal reliability and established validity for nonclinical and clinical populations of children and adolescents (Kamphaus & Reynolds, 2007).

Child social support. Child and Adolescent Social Support Scale, used in the SSWS program by Ohye and colleagues in 2020 (Ohye et al., 2020), is a self-report scale used to measure perceived social support from four sources: classmates, teachers, people in school, and close friends (Malecki et al., 2000). This scale's internal consistency reliability was .96 (Ohye et al., 2020).

Parenting practice. Effective Parenting Practices, used in the ADAPT program by Gewirtz and colleagues in 2018 (Gewirtz et al., 2018), is the direct observation of parent-child interactions during structured family interaction tasks (FITs) used to measure five social interaction learning (SIL) indicators. They reported that FIT codes demonstrated ecological validity, construct validity, and sensitivity to change with at-risk families. SIL indicators included problem-solving outcomes, harsh discipline, positive involvement, skill encouragement, and monitoring (Gewirtz et al., 2018). Each subscale's internal reliability and inter-rater reliability between coders have shown in Table 3.

Discussion

This systematic review sought to identify education and support programs specifically designed for children whose parent(s) served as reserve component personnel in the United States Armed Forces. A total of four publications were included for this review which reflected two unique educational or support programs for these children. Findings were classified into two main categories, namely, 1) education and support program focus and structure; and 2) psychometric properties of measures used in each to assess outcomes.

It is clear from the extensive number of publications excluded at the full-text review state of this project that paucity of programs available for RC-connected children is far from optimal despite the operational role of the Reserve Components in support of U.S. national security since 2001 (Lowe, 2019). Given the small number of programs documented in the literature, it is that much more important that the few that are published describe their impact with data grounded on psychometrically sound outcome measures. The importance of having effective programming for RC-connected children is underscored by the awareness that they are more likely to miss out on support resources because they are invisible in the civilian community, including school systems (Veri et al., 2021).

Two programs, the ADAPT and the SSWS, in this review were located within the school environment. The school context is important when addressing children because they spend most of their waking hours in schools. Schools have been found to be a source of stability and predictability during unpredictable times, especially during parental deployment (Chandra et al., 2010). Military-connected students often spend longer hours at school to avoid spending time at home (Chandra et al., 2010), potentially because of the greater stability found in the school environment. This finding is also aligned with a previous review on children with at least one parent working in military services (Cunitz et al., 2019). This review reported that children of deployed parents are at a higher risk of behavioral problems than children of non-deployed parents (Cunitz et al., 2019). The school staff may explore how children feel when they are at home and address these unique issues in collaboration with parents. In addition, children often isolate themselves from social groups. Future interventions may further educate peers, who are nonmilitary-connected children, to be aware of the different experiences of military-connected children and to provide emotional support to them.

In addition to the available programs such as ADAPT and SSWS, we can better help school staff, including the school nurse and counselor, to feel capable that they can provide specific, targeted support to children based on their needs. The first step is to have an awareness of the differences in active duty versus reserve component duty and benefits and then to be able to identify military-connected children in their school. The Military Student Identifier (MSI) was a component of the Every Student Succeeds Act (ESSA) (114thCongress, 2015; 116thCongress, 2019) and is voluntary reporting by military families to schools signifying that their child has a connection to the military. The Military Student Identifier is a tool that can assist school staff in knowing that students are military connected and can lead to appropriate programming and other resources. Programming to prepare and educate school staff about military culture, resources available to active component and reserve component connected children is essential. Reserve Component (Dipietro et al., 2019) connected children and families often are in school districts far

from active duty installations and are not able to access these resources. In other cases, RC connected children and families are not eligible to receive the same services as active component families. School staff need to be prepared to care for these children and can be instrumental in implementing school-based support services for all military connected children.

Our findings showed that only one publication had included school nurses in their program (Ohye et al., 2016). School nurses are instrumental in delivering health services to children in schools, especially military-connected children who experienced episodes of anxiety and fear from their parental deployments. While strides have been made to develop a school nurse toolkit (Ohye et al., 2016), a gap remains on how to tailor this toolkit into schools to help support mental health and multifaceted health problems among military-connected children (Rossiter et al., 2016). There is a need to develop targeted programs to address the gap in school nurse health and school counselor knowledge about RC-connected children and available services, identify evidenced-based practices on how school nurses can best support the children and their families and then prepare school nurses for this expanded role.

Despite the need to address substance use in children from military families (Creech et al., 2014; Williamson et al., 2018), our review found that neither of the reviewed programs integrated substance use prevention. Existing evidence reported of effectiveness school-based programs can prevent substance misuse among children and intervening early is critical (Stockings et al., 2016). This knowledge gap tentatively suggests that additional support, such as substance use screening and violence prevention programs, for some children within military families can be beneficial. Therefore, integrating substance use-related services in schools and identifying students with substance misuse issues is needed.

The literature also indicates that military-related transitions and stressors might increase the risk for academic challenges in children (Ruff & Keim, 2014; Veri et al., 2021). However, there were few outcomes provided in this review about academic challenges and subsequent improvements after program implementation for the RC-connected child. Further interventions may evaluate the children's academic performance after a school transition and have a counseling system to best support children in their critical time. While the programs included in this review (ADAPT and SSWS) documented positive impact on RC-connected children's adjustment and social support, school staff were not included in the analysis regarding their perception of social support from the school system or educational policies targeted toward RC-connected children. For example, the Military Student Identifier was expanded to include RC-connected children, even though providing this information to the school by parents remains optional (Cowen, 2022), how these data are being used to develop RC-targeted programs is not known. An additional gap that needs further exploration revolves around school staff, including school nurses and counselors and their knowledge and skills about the RC and the children of those who serve in one of the reserve components, given the geographic dispersion of these families. Future research should expand to examine school staff preparing for the provision of providing a support network for RC-connected children.

This review also summarized the measures utilized in the ADAPT and SSWS programs. We categorized the identified measures into three outcomes: child adjustment and behavior, child social support, and parenting practice to evaluate the effectiveness of education and support programs. Assessment of reliability was identified in each outcome measure which indicated the accuracy of the program's data collection with each measure (Lynn, 1989).

This review found that validity evidence was not identified on two scales: the Loneliness and Social Dissatisfaction Scale (Asher & Wheeler, 1985) and the Child and Adolescent Social Support Scale (Malecki et al., 2000). From a measurement perspective, no complete evaluation of results should be undertaken without knowing the validity as the extent to which data reflect the conditions being studied (Lynn, 1989). Further interventions should broaden the existing reliability and validity of measures to accurately assess and evaluate the education and support programs for RC-connected children.

Limitations

This review has some limitations. First, the heterogeneity of studies ensured the review is limited by a narrative synthesis as opposed to meta-analysis. Second, our review was limited to English language publications published in peer-reviewed journals and did not include dissertations, book chapters, government-funded research that had not been gone through the peer-review process. Third, studies are limited by a lack of external validity since all studies were conducted in the U.S. and did not consider publications from other countries. The lack of research on the impact of military life and deployment on RC children prevents us from answering this question

raised by the reviewer. Personal communication with older teens, as shared by Dr. Wilmoth, suggests that engaging with peers who can 'talk military' and understand the stress of having a parent in a dangerous situation is helpful.

Conclusion

This systematic review identified only two education or support programs designed specifically for Reserve-Connected children in the U.S. Armed Forces available in the peer reviewed literature, despite the operational role of the RC the past 20 years during the wars in Iraq and Afghanistan. There may be family and child programs that target RC component children internal to the Department of Defense, but data about those programs or their effectiveness was not found in the literature. This review discusses implications and future directions to enhance RC-connected children's support programs in schools and suggests an expanded role for the school nurse in this arena. It is imperative that attention equal to that provided to active component children be provided to RC connected children toward developing tested tailored and targeted programs to support physical and mental health among RC-connected children.

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ORCID

Ratchanok Phonyiam http://orcid.org/0000-0002-2339-8889
Wenxin Bian http://orcid.org/0000-0002-9809-5962
Margaret C. Wilmoth http://orcid.org/0000-0002-8481-1905

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