Indicators of Family Readiness Meta-Analysis: Military Life Experiences

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13. ABSTRACT (maximum 200 words)
The Research Facilitation Laboratory (RFL) investigated the strength of association between PCS moves and military spouse employment, and the relationships between satisfaction with the military and spouse employment and commitment to the military. Starting with a pool of 616 articles, 9 met the eligibility criteria with usable information. We found that greater number of PCS moves did not impact the likelihood of spouses being employed or unemployed, but a recent PCS move did decrease the likelihood of currently being employed, and great amounts of time spent looking for work was related to greater likelihood of being unemployed. Spouses reported greater satisfaction with the military if they were employed or had experienced a positive career impact, and military families with greater satisfaction reported greater commitment to the military. Increased spouse employment support services may indirectly benefit military commitment and retention.

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation (Acronym)	Definition
AAG	Army Analytics Group
CI	Confidence Interval
DMDC	Defense Manpower Data Center
DoD	Department of Defense
DTIC	Defense Technical Information Center
ES	Executive Summary
IVMF	Institute for Veterans and Military Families
MLE	Military Life Experience
OACSIM	Office of the Assistant Chief of Staff of Installation Management
PCS	Permanent Change of Station
RFL	Research Facilitation Laboratory

Executive Summary

Background

The Office of the Assistant Chief of Staff of Installation Management (OACSIM) recognizes the importance of family readiness in tackling the challenges of a military lifestyle, and acknowledges that scientific inquiry is critical to finding optimal solutions. In earlier work, the Research Facilitation Laboratory (RFL) performed a qualitative analysis as a successive effort to the work of Booth et al. (2007) examining contemporary scientific literature pertaining to military life and family health. In this past effort, our team identified 16 indicators of family readiness. Within the broader framework of family readiness displayed below, military life experiences (MLE) was one indicator.

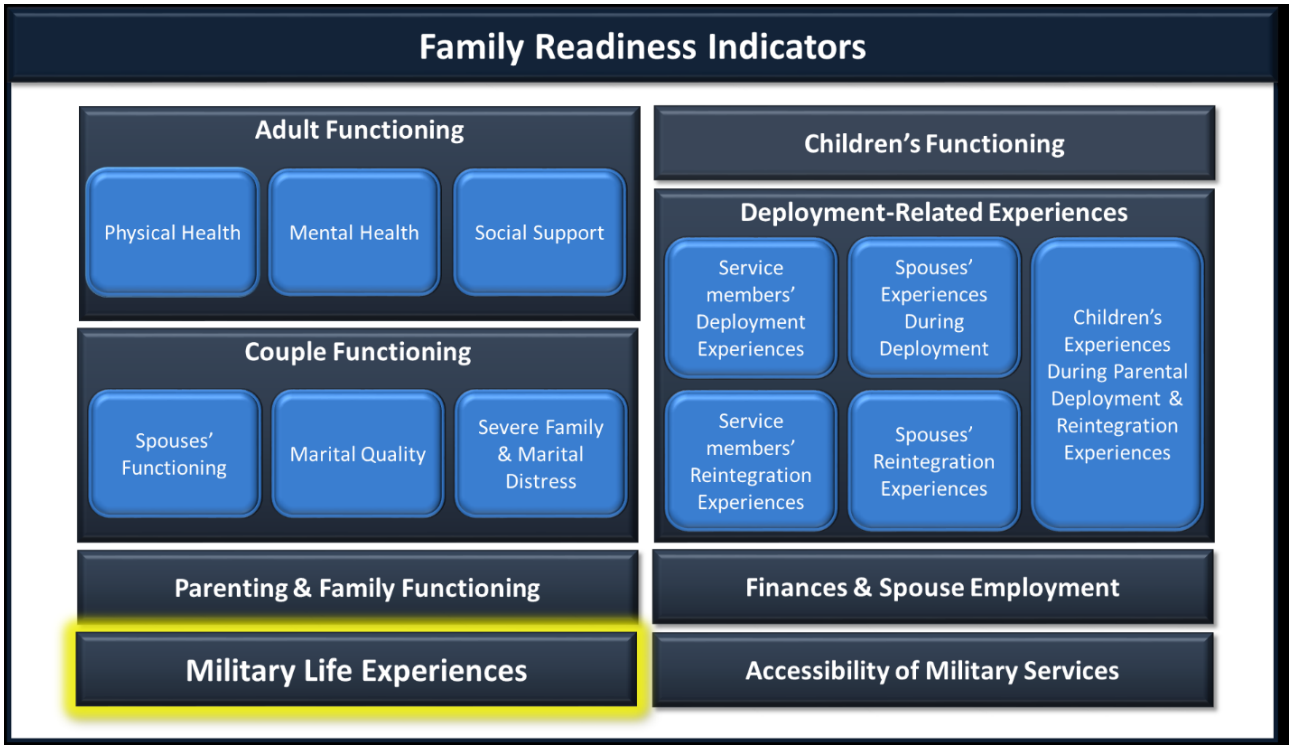

Figure ES-1. Indicators of Family Readiness

Military life experiences as an indicator of family readiness concerns the specific circumstances and requirements that come along with military service, as well as the impact those circumstances have on family members. For the purposes of this work, we focus specifically on Permanent Change of Station (PCS) moves and satisfaction with the military.

The Current Meta-Analysis

The construct of “military life experiences” is a heterogeneous construct, representing a diversity of experiences. Although there are a multitude of ways to operationalize military life experiences, in the current work, we define it as the benefits and challenges unique to military service, focusing on PCS moves and satisfaction with the military. Much of the work in this area serves as a means for policy decision making, and as a result, findings may not be reported using conventional effect sizes measures (e.g., Pearson correlation coefficients) typically observed in meta-analyses.

This project focuses on two aspects of military life experiences (i.e., PCS moves and satisfaction with the military) and examines associations with spouse employment, finances/financial stress and commitment to the military. Although many studies in the past ten years have examined indicators of military family readiness, few have assessed the strength of associations with antecedents (e.g., risk or protective factors) or outcomes of these indicators. In this project, we first reviewed the research literature for quantitative associations between military life experiences and relevant antecedents and outcomes. Second, we identified which of the antecedents and outcomes related to military life experiences include the associations of greatest interest to the stakeholder and have sufficient published findings for analysis. Third, we meta-analyzed (i.e., calculated the average strength of association) between each aspect of military lifestyle and the selected antecedents and outcomes.

Technical Approach

This meta-analysis identified 616 studies through a broad literature search, compiled into a collaborative spreadsheet used to manage article information and selection. Accuracy was ensured by having up to 4 project team members performing each phase of coding.

Phase 1 Review

Phase 1 involved identifying eligible studies that met the initial requirements for inclusion. Abstracts were first reviewed to determine whether a study was relevant to our MLE efforts. If so, reviewers captured the following information: study sample information (i.e., population, nationality, and timeframe), the aspect(s) of MLE identified, and the predictors and outcomes examined. This effort left 66 articles and reports for further analysis. Two of the most researched MLE aspects of these 66 studies were PCS moves and satisfaction with the military, primarily examined in relation to finances/financial stress, spouse employment, commitment to the military/retention, and demographic characteristics (e.g., age, paygrade/rank).

Phases 2 and 3 Review

In phases 2 and 3 of the review process our team extracted detailed information about each study and analysis, excluding studies when appropriate, and cataloguing these details (e.g., paper type, author affiliation, study sponsor, sample size, employment status, officer vs enlisted, data sources). Studies were reviewed by at least 2 project team members working simultaneously, resolving discrepancies through discussion as needed. Studies were retained if they reported one or more bivariate associations between any of the key sets of constructs (i.e., PCS moves and employment status, satisfaction with the military and employment status, satisfaction with the military and commitment to the military).

During the 3rd phase, the project team collected statistical information from each study, including information on the analytic sample size, the type of analysis conducted,

the effect size (or other statistical values), and the reliability of the measures. Our team retained studies that had univariate associations between MLE aspects, outcomes, and demographic characteristics, and excluded all other studies. This left 9 studies meeting all of our eligibility criteria, having relevant analyses for our work, and providing sufficient statistical information for our analytic efforts.

Key Findings, Implications, and Recommendations

The impact of PCS moves on spouse employment

Across studies, we found that ***there was essentially no impact of cumulative PCS moves on whether a spouse was employed or unemployed***. In contrast, the amount of time since a spouse's last PCS *was* related to their employment status, such that ***a more recent PCS move was related to a higher likelihood of spouses being unemployed***. In other words, long-term instability may not be related to being employed or unemployed, but a recent uprooting can have a negative impact on spouse employment, and this negative impact was growing stronger over time. This is not to say that a pattern of relocation has no impact on spouses' careers in other regards. As a recent PCS increases the likelihood of current unemployment, so too are spouses probably encountering the detrimental effects of unemployment and job transition: loss of seniority, vested retirement, accrued time off benefits, and other issues.

When examining the amount of time spouses needed to find employment after a PCS move, we found spouses who had spent relatively less time seeking employment were also those who were employed at the time of the survey. ***Those spouses who are able to quickly find a new job after PCS are also those are more likely to be employed later***. This effect was also growing stronger over time. This can be considered in conjunction with findings related to the negative impact of a recent PCS move; essentially, a recent move can negatively impact spouse employment, and that negative impact can be compounded for spouses who are not able to quickly find a new job after a PCS move.

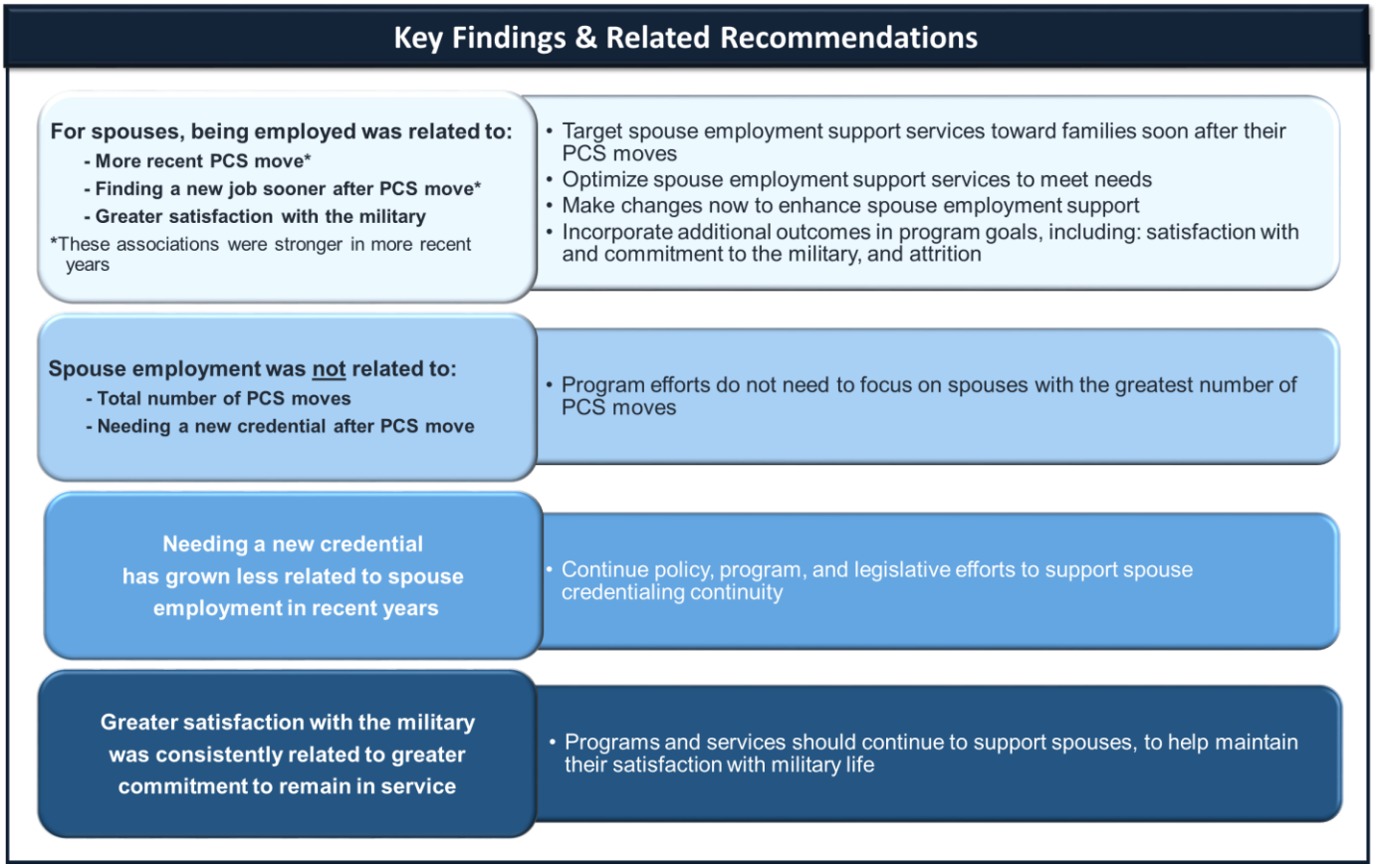

Figure ES-2. Key Findings & Related Recommendations

The need to acquire a new professional license or credential was generally unrelated to a spouse being employed or unemployed, although spouses who *did* need to acquire a new license became slightly more likely to be employed than they had been in previous years. This finding is encouraging, and may suggest the success of recent national efforts to reduce the barriers for spouse employment in career fields that require state credentialing, such as education and medical careers. These ***policy, program, and legislative efforts should continue to ensure spouses can easily navigate their career continuation after a PCS move***. Although great strides have been made in this domain, continued efforts will additionally facilitate the employment desires of military spouses.

Taken together, these PCS related findings indicate family support services should focus efforts on assisting spouses in the immediate aftermath of a PCS move. ***Decision-makers and leaders should identify ways to optimize the employment support provided to spouses around the time of their PCS move to help reduce the negative impact of that move on employment, and also minimize the likelihood of compounding the impact of delays in finding employment***. Further, given that the negative impact of PCS moves on spouse employment has increased in recent years, PCS moves may become increasingly more challenging for spouses. As such, ***it is critical for programs and services to take action to address these issues right away***.

Satisfaction with Military Life

We examined the associations between satisfaction with military life and two important variables: spouse employment status, and commitment to the military. Satisfaction with the military was weakly related to spouse employment status, such that those spouses who had experienced a positive career impact/were employed were more likely to report greater satisfaction with military life. It may be that ***when spouses can easily see the benefits of military life (e.g., they are employed), they are more satisfied with the military***.

Military families' satisfaction with military life also showed a strong association with commitment to the military with more satisfaction associated with greater commitment to staying in the military. The strength of this effect was notably large, which indicates a strong and robust association between these two variables. These findings indicate that when families are more satisfied, there is greater commitment to military service. Thus, the benefits, programs, and services that help to boost spouse satisfaction with the military may foster a sense of commitment to the military within these families, and by extension, help to reduce attrition among Service members.

Findings clearly demonstrated spouses who were employed reported greater satisfaction with the military, and more satisfaction with the military related to higher commitment to the military. Taken with the findings related to PCS moves, ***these results***

provide evidence of the importance of spouse employment support and programs, particularly in the wake of a PCS move. Given this, ***spouse employment programs and services can expand their measured outcomes or goals to incorporate spouse satisfaction with the military, military families' commitment to the military, and Service member attrition***.

Finally, we found limited research that could be included in this meta-analysis. Although our initial review revealed a large number of research reports, briefings, and articles relevant to the military life experiences domain, there was limited quantitative evidence sufficient for incorporating into a meta-analysis that assessed these variables in relation to one another, or were outside of our time window, used a qualitative approach, included only in multivariate analyses, or did not report sufficient information to include in our meta-analysis. As such, we strongly recommend that ***future research should quantitatively explore the relationship between PCS moves and spouse employment, finances, and commitment to the military***.

Introduction

Military families often face substantial challenges, so it is essential they are properly equipped to navigate these challenges. The Office of the Assistant Chief of Staff of Installation Management (OACSIM) recognizes the importance of family readiness across the military and acknowledges that scientific inquiry is critical to finding optimal solutions. For the purposes of this work, family readiness is defined as the state of being prepared to effectively navigate the challenges of daily living experienced in the unique context of military service (Hawkins et al., 2018). Military families that are prepared for the challenges of military life typically are "[1] knowledgeable about the potential challenges they may face; [2] equipped with the skills to competently function in the face of such challenges; [3] aware of the supportive resources available to them; and [4] make use of the skills and supports in managing such challenges" (numbers added for clarity; p.31, Department of Defense [DoD], 2017).

In previous work, our team performed a qualitative analysis as a successive effort to the work conducted by Booth et al. (2007) examining the contemporary scientific literature pertaining to military life and family health. In this analysis, we reviewed 380 scientific articles and identified 16 indicators of family readiness. Eleven of these indicators fell under the domains of adult functioning, couple functioning, and deployment-related experiences. The remaining 5 indicators consisted of children's functioning, parenting & family functioning, finances and spouse employment, accessibility of military services, and military life experiences. The present work takes a closer look at the specific indicator of military life experiences (see Figure 1).

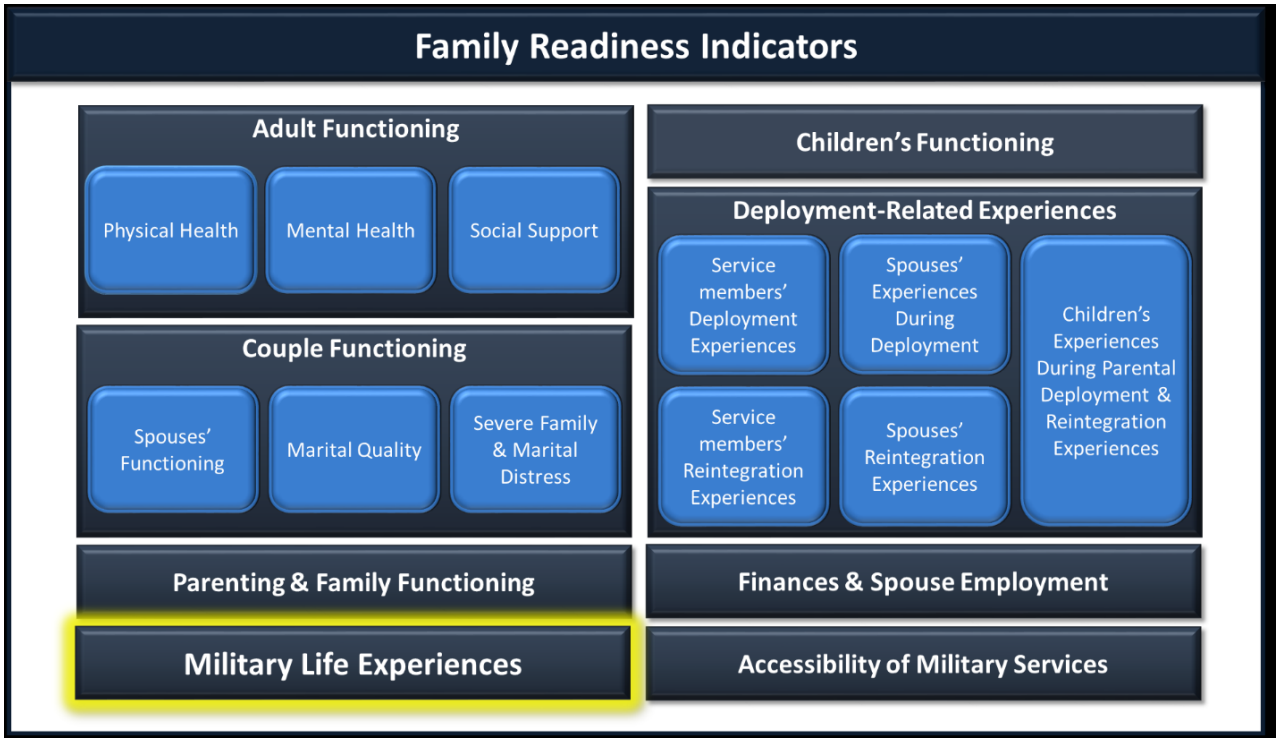

Figure 1. Indicators of Family Readiness

Military Life Experiences

As an indicator of family readiness, military life experiences pertain to the unique circumstances related to the requirements of military service, and the impact of those circumstances on family members. In defining the military life experiences indicator for the present work, we focused on issues unique to the military lifestyle including relocation (i.e., Permanent Change of Station [PCS] moves), satisfaction with the military, perceived support from the military, and occupational rewards from service (e.g., financial security, retirement, benefits). Thus, we excluded measures of physical and mental health, social support, and deployment related experiences.

Military Life Experiences (MLE) are the benefits and challenges unique to military service, such as:

- PCS moves
- Satisfaction with the military
- Support from the military, and
- Rewards or advantages of service

While the Booth et al. (2007) report did not focus specifically on military life experiences, their work did examine Service member and spouse quality of life and life satisfaction. They found spouses and Service members (particularly those of higher-ranks) were typically satisfied with their way of life. Additionally, Booth et al. (2007) found families that were better able to maintain their personal goals reported greater levels of well-being and family readiness than those who struggled to maintain their personal goals. More recently, the Hawkins et al. (2018) report honed in more specifically on aspects that uniquely affect a military family's way of life.

Relocation and PCS Moves

Frequent PCS moves by Service members and their families are a common feature of military life. In 2008, 76% of Active Duty Army spouses reported experiencing at least one PCS move (DMDC, 2009). The demands of PCS relocations can be quite challenging for both Service members and their family members. The scientific literature indicates frequent relocation is a significant challenge for military spouses and children, and a family's lack of control over what is to come can result in increased stress (Davis & Finke, 2015). Military relocations can also have a significant impact on family income and spouse employment, with employment and financial consequences typically resulting in a loss of seniority, vested retirement, and the loss of routine pay increases (Castaneda & Harell, 2008; Cooney, De Angelis, & Segal, 2011). Some research suggests the number of relocations a family experiences is negatively correlated with spousal earnings, while

time between relocations is positively correlated with spousal earnings (Cooney et al., 2011). This effect was stronger for female spouses than for male spouses, indicating this relocation challenge is greatest for military wives (Cooney et al., 2011). In particular, spouses with more education tend to have greater difficulty finding work after a military relocation (Castaneda & Harrell, 2008). However, the challenges of military relocation are not limited strictly to work and financial challenges. Some families also lose access to certain health services and have to find new physicians, therapists, and treatment facilities somewhere unfamiliar, which can be particularly challenging for families that have children with special needs (Davis, Ward, & Storm, 2011; Davis & Finke, 2015).

Satisfaction and Support in the Military

Similar to the Booth et al. (2007) report, Hawkins et al. (2018) found many families are satisfied and find meaning in their lives as a military family. Many military spouses who successfully acclimate to military life report a personal commitment to their role as a military spouse and find that role to be meaningful (Baptist et al., 2011; Blakely, Hennessy, Chung, & Skirton, 2014; Southwell & Wadsworth, 2016). This type of personal commitment and role identification can also improve the military experience for military children (Huebner et al., 2010; Skomorovsky & Bullock, 2016; Wong & Gerras, 2010; Rodriguez & Margolin, 2015; Werber et al., 2008).

The sense of support families feel from the military is also integral to military satisfaction. Some research indicates Service members and their spouses “sometimes” feel supported by their leadership and unit members, while other work indicates Service members and their spouses feel poorly supported by the military organization and only modestly supported by military leadership (DeGraff, O’Neal, & Mancini, 2016; Matsch, Sachau, Gertz, & Englert, 2009). Some variation has been observed between the family support Service members and spouses experience, with spouses caring particularly more than Service members about receiving adequate relocation and deployment notice (Matsch et al., 2009; SteelFisher, Zaslavsky, & Blendon, 2008). Even though family

members may at times experience different levels of military support, research clearly shows families who feel the military supports the well-being of their family and Service member are more likely to report being satisfied with a military lifestyle (DeGraff et al., 2016; Matsch et al., 2009). The decisions of military leadership, in particular, can have a substantial impact on the acceptance and satisfaction that families experience. Lastly, research shows the compensation and occupational rewards Service members receive (e.g., financial allowances, health benefits, programs, and resources) contribute to a family's satisfaction with military life, whereas Service member stress and workload negatively impact military satisfaction.

Spouse Employment and Commitment to the Military

The DoD has a vested interest in Service member families' commitment to the military. Aside from the variety of ways military families directly support the military (e.g., filling crucial jobs on base, maintaining the home and caring for children when Service members deploy), military families that remain in service also save the government money by reducing turn over and maintaining higher levels of personnel with critical skills, thereby ensuring a more capable and effective operational force. Families are more committed to the military when they feel their emotional and financial needs are met. For military spouses, however, the military lifestyle can make finding adequate employment challenging. Sudden and frequent relocation can uproot personal and professional relationships. The Army is actively seeking ways to mitigate these challenges. For example, families that have recently undergone a PCS relocation can reach out to their installation's employment assistance program for additional resources. In addition, MilitaryOneSource provides military spouses valuable career resources and services, including career planning and resume tools, assistance identifying military-friendly employers, and scholarship opportunities for spouses seeking career licensing or certifications (MilitaryOneSource.mil, 2019).

Summary

While the research exploring military life experiences provides some valuable insight into the challenges and opportunities military families face, little is known regarding how consistently PCS moves and satisfaction with the military influence military families, on average. Whereas qualitative research provides a good sense of the military lifestyle landscape, it does not provide a clear picture of the strength of relationships between these military lifestyle variables. The construct of “military life experiences” is a heterogenous construct, representing a diversity of experiences. There are certainly a multitude of ways to operationalize military life experiences, but in the current work, we are defining it as the benefits and challenges unique to military service, focusing on PCS moves, satisfaction with the military, support from the military, and benefits or rewards accompanying service. Focusing on these aspects do not necessarily have clear parallels in civilian research. Additionally, much of the work in this area serves as a means for policy decision making, and as a result, findings may not be reported using conventional effect sizes measures (e.g., Pearson correlation coefficients) that are typically observed in meta-analyses.

The Current Meta-Analysis

Although many studies in the past ten years have examined indicators of military family readiness, few have assessed the strength of associations with antecedents (e.g., risk or protective factors) or outcomes of these indicators. One study, for example, assessed the risk factors related to children’s functioning during deployment, finding children ages 8-12 were most likely to experience problems during deployment (Card et al., 2011). Identifying, measuring, and understanding the factors related to the indicators of military family readiness is critical to understanding how family members can optimally thrive in the face of stressors.

This project focuses on two aspects of military life experiences (i.e., PCS moves and satisfaction with the military) and examines associations with spouse employment, finances/financial stress and commitment to the military. First, we reviewed the research literature for quantitative associations between military life experiences and relevant antecedents and outcomes. Second, we identified which of the antecedents and outcomes related to military life experiences include the associations of greatest interest to the stakeholder and have sufficient published findings for analysis. Third, we meta-analyzed (i.e., calculated the average strength of association) between each aspect of military lifestyle and the selected antecedents and outcomes.

Methodology

Literature Search

Literature for this meta-analysis was obtained through two primary avenues: a broad search of the published literature and emailed requests for relevant unpublished findings. We describe each strategy below.

The broad literature search used academic, including a wide scope of journals that were reviewed through Google Scholar and Elsevier, and government resources, with technical reports predominantly retrieved from the Defense Technical Information Center (DTIC). Some reports were only accessible via a Department of Defense-issued Common Access Card for authentication. This search effort included both a general and a targeted search.

First, as part of a previous, larger project, the research team conducted a general search for research articles that examined military family readiness, broadly defined. The search was limited to published or publically available reports or articles that were published between 2006 and 2017 (see Hawkins et al., 2018). Many search strings were used in this first search, including general (“military family OR families”) and specific (e.g.,

"military child high school academic performance"). The team also reviewed the references of included articles to identify additional relevant articles.

Second, to complement the initial broad general search, the research team conducted a targeted search to identify relevant articles related to military life experiences published between 2001 and 2018. This search focused more specifically on military life experiences as identified in Hawkins et al. (2018); ***military life experiences was defined as those experience that pertain to the unique circumstances related to the requirements of military service, and the impact of those circumstances on family members***. This focused on experiences unique to or prevalent in the military culture and lifestyle. Search strings varied from very broad to very specific (both with and without quotes), including but not limited to: PCS OR relocation, military satisfaction OR commitment, sense of support from military, military benefits OR services, occupational rewards military OR army, on OR off post living, military OR Soldier OR army connections to community. Findings pertaining solely to deployment experiences, financial stress, spouse employment issues, service use, and organizational culture were excluded, as the work pertaining to these subjects has been addressed elsewhere by our research lab (Hawkins et al., 2018). As in the general search, the project team also reviewed references from the articles identified in the targeted search in an attempt to identify additional relevant articles or reports.

In addition to searching for published research studies and reports, we also emailed a request for unpublished work to professional organizations with a focus on military families (e.g., Military Health Systems Research Symposium Families Interest Group), as well as prominent scholars or organizations in this area (e.g., Military Family Research Institute). Authors with relevant analyses were asked to contact the project lead with any relevant findings or manuscripts.

Together, these systematic strategies yielded 616 articles with potentially relevant information about military life experiences.

Article Selection and Information Collection

Eligibility Criteria

After our initial broad literature search, a specific eligibility criteria was established for inclusion in the meta-analysis (see Table 1). We included only study populations from one of the five eyes countries (Australia, Canada, New Zealand, United Kingdom, and the United States, all English-speaking countries) that reported data on Service Members or spouses (we excluded findings pertaining to Veterans, and non-spouse family members and friends of Service Members and Veterans). Additional inclusion criteria included publication between 2002 and 2018, with data collected after 9/11/2001. This timeframe was selected to provide insight into modern military families in the post-9/11 era of war. We included journal articles, technical reports, briefings, and unpublished manuscripts in our search, and we excluded literature reviews and opinion pieces. Lastly, we only included studies that reported relevant quantitative associations. Our initial sample of literature identified through our search consisted of 616 articles and reports, all of which were added into the collaborative spreadsheet.

Table 1. Eligibility Criteria

Eligibility Criteria	
Military Life Experiences definition	The experiences pertaining to the unique circumstances related to the requirements of military service *Excluded: Deployment-specific experiences, financial stress, spouse employment, service use, and military organizational culture*
Population	Service members and/or spouses U.S., U.K., Canada, Australia, New Zealand *Excluded: Veterans, family members of Veterans, children; Any other country*
Timeframe	Article published after 2001 Data collected after September 11, 2001 *Excluded: Article published before 2001; Data collected prior to September 11, 2001*
Analysis	Quantitative analyses with sufficient detail for meta-analysis *Excluded: Qualitative analyses, case studies, theoretical articles*

Selection Process

All 616 articles identified in the literature search were entered into a collaborative spreadsheet that was used to manage article information and selection. To ensure accuracy, up to 4 members of the project team performed each phase of coding for each article. The collaborative spreadsheet was designed to allow multiple-rater reviews across 3 phases. All phases of article selection and data collection were conducted by inclusion coding, followed by multiple-rater general attributes coding, all executable within the same spreadsheet. Both the Phase 1 and Phase 2 reviews were executed by up to 4 coders per article to ensure accuracy.

Phase 1

The primary purpose of Phase 1 was to quickly identify whether each article met the initial requirements for inclusion. First, abstracts were reviewed to identify whether each article was potentially relevant to military life experiences, as defined by above. Then, for articles that met this initial requirement, the reviewer captured the following information: study sample information (i.e., population, nationality, and timeframe), the aspect(s) of MLE identified, and the predictors and outcomes examined. A comprehensive list of information gathered during each Phase review is included in Appendix A. One project team member reviewed each article at this phase. Articles that did not meet the eligibility criteria were excluded (*N* = 550), leaving 66 articles and reports under consideration.

These 66 remaining studies were then further examined to identify which associations between military life experiences and antecedents or outcomes had sufficient findings to statistically combine in this study. Two of the most researched aspects of military life experiences were PCS moves and satisfaction with the military (see Table 2). These aspects were primarily examined in relation to finances/financial stress, spouse employment, commitment to the military/retention, and demographic characteristics (e.g., age, paygrade/rank, service component). Ultimately, as a function of input from the project sponsor and initial expected quantity of research for each domain, three associations were selected for examination in this study: 1) PCS moves and employment status, 2) satisfaction with the military and employment status, and 3) satisfaction with the military and commitment to the military (i.e., retention intentions/preferences).

Table 2. Aspects of MLE Identified Through Inclusion Coding

Aspects of Military Life Experiences	Number of Articles
PCS moves / relocation / instability	24
Satisfaction with the military	19
Work-family conflict	16
Support from the military	16
Community connections	12
Commitment to the military	7
Housing / living on/off post	5

Data Extraction Process

In Phases 2 and 3 of the review process, we extracted information (i.e., data) pertaining to the general attributes of each article and the statistics reported in each article, respectively.

Phase 2

In Phase 2, we extracted detailed information (i.e., data) about each study and analysis, excluding studies when appropriate. We catalogued detailed information about the article, including paper type, author affiliation, study sponsor, sample size, and sample composition (see Appendix A). We also coded analysis information, such as the relevant association, measures, analysis type, the comparisons made (e.g., employed vs unemployed spouses, officers vs enlisted), whether the study involved repeated measures, and the source of data (e.g., self-report, objective, observations). In this phase, each article was reviewed by at least 2 project team members, who worked simultaneously and resolved discrepancies through discussion with one another and the lead author.

After Phase 2 coding, articles were retained if they reported one or more bivariate associations between any of the following sets of constructs: one of the two MLE aspects (PCS moves and satisfaction with the military) and one of the three outcomes (spouse employment, commitment to the military, and finances/financial stress) or between one of the two MLE aspects and one of the demographic variables of interest.

Phase 3

During Phase 3, the project team collected statistical information from each study. This included information on the analytic sample size, the type of analysis conducted, the effect size (or other statistical values), and the reliability of the measures (see Appendix A). One reviewer entered this information into the spreadsheet, and a second reviewer confirmed the information was entered correctly. At this phase, articles that did not report an effect size (or information that could be used to calculate a measure of effect) were excluded.

During this phase, we retained studies that had bivariate associations between MLE aspects, outcomes, and demographic characteristics. All other studies were excluded. This process resulted in 57 articles and reports being excluded, leaving 9 studies that met all of the eligibility criteria for this analysis, had relevant analyses for our work, and provided sufficient statistical information (see Figure 2).

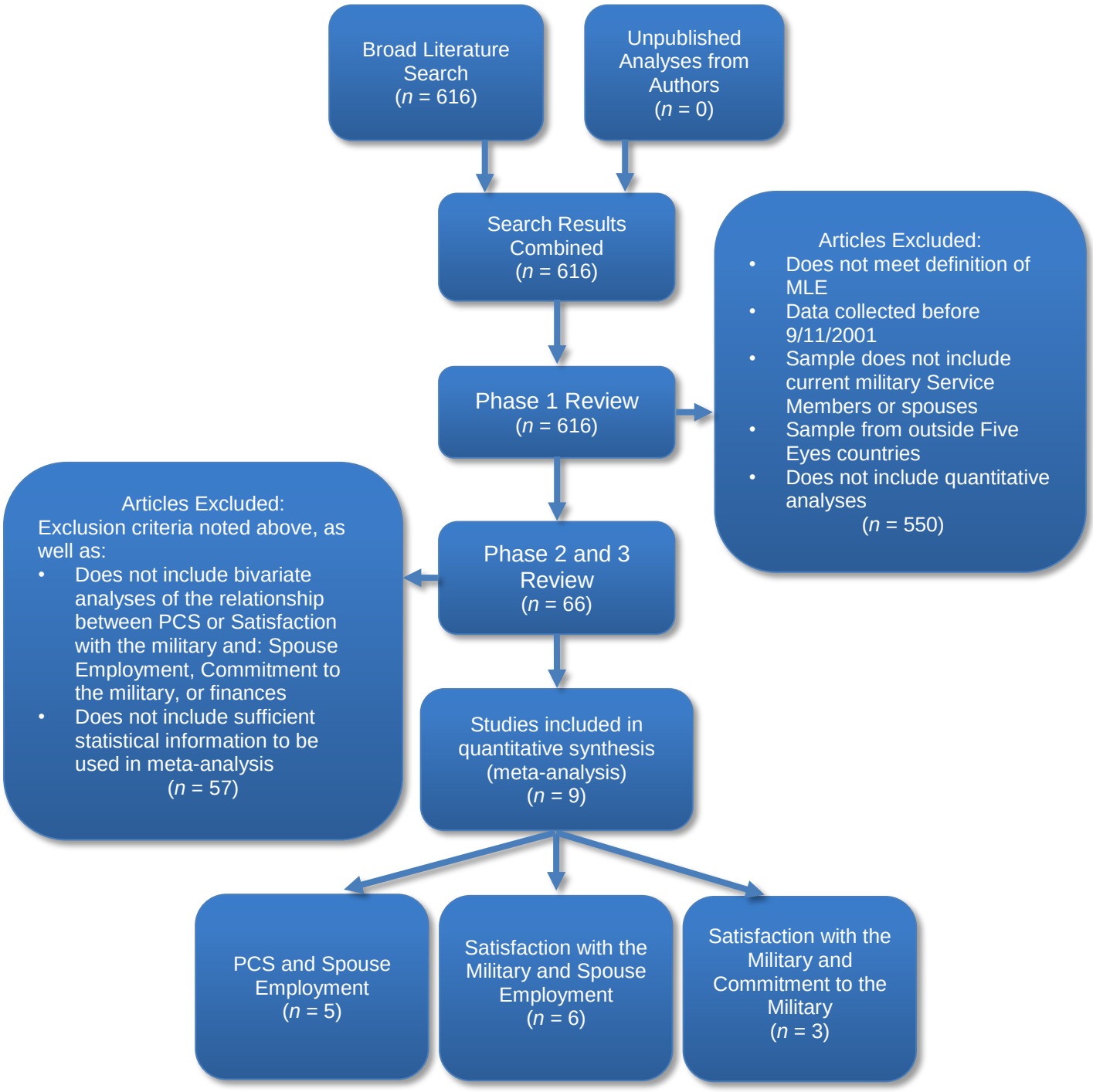

Figure 2. Literature Search and Eligibility Screening

Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, et al. (2009) The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. PLOS Medicine 6(7): e1000100. https://doi.org/10.1371/journal.pmed.1000100
https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000100

Analytic Plan

This study obtained and meta-analyzed, separately, effect sizes of associations pertaining to two key military life experiences: PCS moves and satisfaction with the military. Beginning with PCS moves, we examined associations between the following: 1) the number of PCS moves and spouse employment status, 2) the time it took spouses to find employment after their last PCS move and their employment status, 3) the time since the last PCS move and spouse employment status, and 4) the length of time it took spouses to acquire new license or credential in new duty location and their current employment status. In addition, we examined two associations involving satisfaction with the military: 1) the association with spouse employment status, and 2) the association with commitment to the military. Table 3 provides a summary of the associations we tested in this meta-analysis.

Table 3. Military Life Experiences Examined

Military Life Experiences Variable		
PCS Moves		
Number of PCS Moves	AND	Spouse Employment Status
Time since last PCS	AND	Spouse Employment Status
Time to employment after PCS	AND	Spouse Employment Status
New credential after PCS	AND	Spouse Employment Status
Satisfaction with Military Life		
Satisfaction	AND	Spouse Employment Status
Satisfaction	AND	Commitment to the Military

The meta-analysis used a new varying-coefficient method (Bonett, 2008) that does not have the same limitations of the traditional fixed-effect and random-effects methods. Unlike the fixed-effects methods, the varying coefficient method does not assume equal population correlation values, and unlike the random-effects method, the varying coefficient method does not assume the population correlations are a random sample from a normally distributed superpopulation of correlations. The varying coefficient meta-analyses were performed using Microsoft Excel. Three articles reported Pearson correlation coefficients (Heilman, Bell, & McDonald, 2009; Norris, 2004). The remaining 6 articles reported contingency tables, rather than correlational statistics. For the contingency tables, we calculated frequency counts and computed Spearman, phi, and tetrachoric correlations, when applicable, to facilitate aggregation with Pearson correlation coefficients.

Examining Trends over Time

Because many of the associations in this meta-analysis were derived from a series of DMDC reports spanning nearly a decade, we performed linear trend tests, whenever possible. The goals of these tests were to identify whether the effect size changed significantly over time. If effect sizes do not change over time, then effect size estimates are most accurate when they are averaged across years. In contrast, if effect sizes do demonstrate change over time, the most recent year alone best represents the current expected association between the constructs.

Potential Sources of Bias

In addition to examining linear trends, the current project conducted analyses to evaluate potential sources of bias. First, we explored whether analysis conducted biased the effect sizes observed across studies. For example, Pearson correlations are typically calculated with continuous measures. However, when one or both of the measures is either naturally dichotomous (e.g., yes vs. no) or artificially dichotomized (high vs. low),

other types of effect size are needed. These other measures of effect size can have different distributional properties, which may introduce bias to the meta-analysis. For the current analyses, we compared articles with different calculations (e.g., Spearman's rho versus tetrachoric correlations) to determine whether the associations differed between these two groups.

We also attempted to examine whether the effect sizes in the included articles varied by sample size. Scientific journals typically prioritize the publication of research findings that are statistically significant at the threshold of $p < .05$. Because studies with larger sample sizes are able to estimate associations more precisely, these studies have more statistical power to detect an effect, if one exists. In contrast, studies with smaller sample sizes produce less precise estimates, which means they typically need a much larger effect size in order to detect an effect, if one exists. For this reason, published studies with smaller sample sizes may be more likely to have a large effect size. However, due to the limited number of studies that met our eligibility criteria, we were unable to test the sample size bias.

Subgroup Analyses

When the studies were coded, we included information that could be used to test for potential subgroup differences, such as respondent status (service member or spouse), data source (e.g., self-report or observation), component composition (e.g., Active vs. Reserve component) and service member rank composition of each sample. However, due to the limited number of studies that met our criteria for inclusion, we were unable to examine subgroup differences in this analysis.

Results

Data Sources

This meta-analysis yielded associations from three primary data sources: the Defense Manpower Data Center (DMDC) Survey of Active Duty Spouses, the Blue Star Families Surveys, and academic journal articles (see Table 4). Each is described below.

Defense Manpower Data Center Surveys of Active Duty Spouses

The majority of the associations in this meta-analysis were derived from DMDC's Surveys of Active Duty Spouses. These surveys of DOD Active Duty spouses from across all service branches have been administered intermittently (generally every two years) for decades. Each time the survey was conducted, paper surveys were sent to spouses using single-stage, non-proportional stratified random sampling procedures, with contact information drawn from DMDC administrative records. Spouses were eliminated from the sample if they were widowed or divorced, or if their spouse had retired from Active Duty. The current meta-analysis incorporates data from several years of this survey, specifically 2006, 2008, 2012, 2015, and 2017. Across these surveys, sample sizes ranged from 6,827 to 12,274 respondents. The DMDC surveys examined in this meta-analysis had the following composition of spouses: Army, 23-38%; Navy, 22-27%, Marine Corps, 13-27%, and Air Force, 23-27%. Spouses tended to be female (88-92%), and the affiliated service members tended to be enlisted (58–71%).

In order to convert the frequencies presented in these reports into correlations, we selected two of the four labor categories presented: employed and unemployed. This excluded Armed Forces Members (representing dual military couples) and spouses not in the labor force. Dual military couples represent a small subset of military families that, while deserving of analysis in their own right, face uniquely different experiences that are more difficult to generalize to other military families. Spouses not in the labor force were excluded in part due to parallel the Bureau of Labor Statistics definition of unemployment

statistics; unemployed persons are those who do are not currently employed but are actively seeking employment, whereas individuals not in the labor force are not employed but are not seeking employment. Additionally, given the multitude of reasons a spouse may decide not to participate in the labor force (caring for family members or children, health restrictions, etc.), it is harder to draw firm conclusions about what information about these spouses might tell.

Military Family Life Project

The Department of Defense *Military Family Life Project* is conducted by the Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy (ODASD (MC&FP)). The project is a longitudinal DoD-wide survey of military families. The included article is Military Family Life Project: Active Duty Spouse Study: Longitudinal Analyses 2010-2012 Project Report (2015). A total of 6,412 participants completed all three timepoints under investigation in this study. Participants were spouses of Active Duty service members from the Army, Navy, Marine Corps, and Air Force through the rank of O-6 with at least 6 months of military experience. Warrant officer spouses were excluded. The sample was predominantly female (96.4%), White (69.9%) and Army (40.3%).

Blue Star Families Survey

The current project also drew on results from a survey of issues affecting military families designed by Blue Star Families (a non-profit organization) and Syracuse University's Institute for Veterans and Military Families (IVMF). The survey was accessible online from April 15 to May 20, 2015. They had 3,594 participants complete the survey. Participants could be service members or their families. Military spouses comprised nearly half the sample (47.2%). Overall, participants were more likely to be female (57.7%) and tended to be affiliated with the Army (38%), with fewer respondents from the Navy (24%), Air Force (24%), Marine Corps (12%), or Coast Guard (2%).

Table 4. Included Articles and Analyses

Reference	MLE Indicator	MLE Measure	Primary Outcome	Primary Outcome Measure	Data Collection Year	Analytic Sample Size	Correlation Type	Correlation Value
Defense Manpower Data Center, (2007). 2006 Survey of Active Duty Spouses: Tabulations of Responses. Department of Defense: Arlington, VA.	**PCS Moves**	Total number of PCS moves: During your spouse's active-duty career, **how many times have you** moved to a new location as a result of your spouse being PCSed?	Spouse Employment	Employed vs Unemployed	2006	5623	Spearman's rho	0.018
	PCS Moves	Time since last PCS: How many **months has it been since your last PCS?**	Spouse Employment	Employed vs Unemployed	2006	5615	Spearman's rho	-0.01
	PCS Moves	Time to find employment after PCS: How long did it take you to find employment after your most recent PCS move?	Spouse Employment	Employed vs Unemployed	2006	2714	Spearman's rho	0.076
	Satisfaction with the Military	Overall, how satisfied are you with the military way of life?	Spouse Employment	Employed vs Unemployed	2006	5672	Spearman's rho	0.033
Defense Manpower Data Center, (2009). 2008 Survey of Active Duty Spouses: Tabulations of Responses. Department of Defense: Arlington, VA	**PCS Moves**	Total number of PCS moves: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2008	4672	Spearman's rho	-0.027
	PCS Moves	Time since last PCS: Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2008	3513	Spearman's rho	-0.188
	Satisfaction with the Military	Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2008	4679	Spearman's rho	0.086
Defense Manpower Data Center, (2013). 2012 Survey of Active Duty Spouses: Tabulations of Responses. Department of Defense: Alexandria, VA. Retrieved from: https://apps.dtic.mil/dtic/tr/fulltext/u2/a609606.pdf	**PCS Moves**	Total number of PCS moves: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2012	6283	Spearman's rho	-0.031
	PCS Moves	Time since last PCS: Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2012	4738	Spearman's rho	-0.214
	PCS Moves	Time to find employment: Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2012	3502	Spearman's rho	0.257
	PCS Moves	Acquire credential after PCS: After your LAST PCS move, did you have to acquire a new professional license or credential in order to work at the new duty location?	Spouse Employment	Employed vs Unemployed	2012	3402	Phi coefficient	-0.017
	Satisfaction with the Military	Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2012	6235	Spearman's rho	0.065

Reference	MLE Indicator	MLE Measure	Primary Outcome	Primary Outcome Measure	Data Collection Year	Analytic Sample Size	Correlation Type	Correlation Value
Defense Manpower Data Center (2015a). 2015 Survey of Active Duty Spouses: Tabulations of Responses. Department of Defense: Alexandria, VA.	**PCS Moves**	Total number of PCS moves: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2015	5211	Spearman's rho	0.004
	PCS Moves	Time since last PCS: Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2015	3969	Spearman's rho	-0.214
	PCS Moves	Time to find employment: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2015	3018	Spearman's rho	0.218
	PCS Moves	Acquire credential after PCS: Same as DMDC 2013	Spouse Employment	Employed vs Unemployed	2015	2903	Phi coefficient	0.032
	Satisfaction with the Military	Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2015	5264	Spearman's rho	0.037
Office of People Analytics (2018). 2017 Survey of Active Duty Spouses: Tabulations of Responses. Department of Defense: Ft. Belvoir, VA.	**PCS Moves**	Total number of PCS moves: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2017	3587	Spearman's rho	0.049
	PCS Moves	Time since last PCS: Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2017	2709	Spearman's rho	-0.273
	PCS Moves	Time to find employment: same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2017	2072	Spearman's rho	0.196
	PCS Moves	Acquire credential after PCS: Same as DMDC 2013	Spouse Employment	Employed vs Unemployed	2017	2007	Phi coefficient	0.039
	Satisfaction with the Military	Same as DMDC 2007	Spouse Employment	Employed vs Unemployed	2017	3594	Spearman's rho	0.047
Blue Star Families. (2016). Military Family Lifestyle Survey: Comprehensive Report. Retrieved from: https://bluestarfam.org/wp-content/uploads/2016/04/bsf_2015_comprehensive_report.pdf	**Satisfaction with the military**	Very Satisfied with Military Lifestyle vs not "Very Satisfied" with Military Lifestyle	Spouse Employment	Positive vs Negative Career Impact	2016	5089	Tetrachoric	0.37
Norris, M. E. (2004). Turnover in the military: Impact of workplace stressors.	**Satisfaction with the military**	Job satisfaction	Commitment to the Military	Turnover Intentions	2002	2527	Pearson	-0.43
Heilmann, S. G., Bell, J. E., & McDonald, G. K. (2009). Work–home conflict: A study of the effects of role conflict on military officer turnover intention. Journal of Leadership & Organizational Studies.	**Satisfaction with the military**	Perceived family satisfaction with military life	Commitment to the Military	Turnover intentions	Not specified	51	Pearson	-0.57

Reference	MLE Indicator	MLE Measure	Primary Outcome	Primary Outcome Measure	Data Collection Year	Analytic Sample Size	Correlation Type	Correlation Value
Defense Manpower Data Center (2015b). Military Family Life Project: Active Duty Spouse Study longitudinal analyses 2010–2012 project report. Arlington: Department of Defense, Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy.	**Satisfaction with the military**	Satisfaction with the Military Way of Life	Commitment to the Military	Support to Stay on Active Duty	2010-2012	6412	Not Specified	.53

Academic Journal Articles

Finally, this study included results from two academic journal articles. One study examined a small sample of active-duty Air Force Soldiers located in California, Wyoming, and Washington states (Norris, 2004). The second study, conducted in 2002, examined a fairly large sample of participants (> 2,000) from the Canadian military (Heilman, Bell, & McDonald, 2009). No other academic journal articles met the study eligibility criteria, and no unpublished manuscripts were submitted from authors in response to the email solicitation.

Number of PCS moves and Spouse Employment Status

Five Spearman's rho correlation coefficients (from DMDC Surveys of Active Duty Spouses: 2006, 2008, 2012, 2015, and 2017) were meta-analyzed, representing 25,376 participants. The effect sizes for the association between number of PCS moves and spouse employment status are presented in Table 5. Employment status was coded 1 for employed and 2 for unemployed. Across the five reports, we estimated a near-zero average correlation (r = .003, 95% CI: [-.010, .015]). This suggests the number of PCS moves a spouse has experienced is not related to his or her being employed versus unemployed.

We also performed a linear trend test, which did not reveal any significant linear differences in effect size across time (p = .595), indicating the effect size remained relatively constant across time. For this reason, the average effect size computed in this study (r = .003) is considered the most precise estimate of this association.

Table 5. Effect Sizes for MLE Associations

Aspect of Military Life Experiences	Number of PCS Moves	Time Since PCS Move	Time to Find Employment	Need New Credential	Satisfaction with Military	Satisfaction with Military
Associated Factor	**Employment Status**	**Employment Status**	**Employment Status**	**Employment Status**	**Employment Status**	**Commitment to Military**
Number of Studies	5	5	4	3	6	3
Total Sample Size	25376	20544	11306	8312	30533	8990
Average Correlation	.003	-.180	.187	.018	-.106	-.510
Standard Error	.006	.007	.009	.011	.007	.033
95% CI	-.010, .015	-.193, -.166	.168, .205	-.003, .034	-.093, -.120	-.572, -.442
Trend over Time	Not Significant	Significantly Increasing	Significant	Significantly Increasing	Not Significant	n/a

Correlation strengths are generally considered: very weak (r = .00-.10), small (r = .10-.30), medium (r = .30-.50), and strong (r > .50) (Cohen, 1969)

Time since last PCS move and spouse employment status

Five Spearman's rho correlation coefficients (from DMDC Surveys of Active Duty Spouses: 2006, 2008, 2012, 2015, and 2017) were meta-analyzed, representing 20,544 participants. The effect sizes for the association between time since last PCS move and spouse employment status are presented in Table 5. Across the five reports, we estimated a small negative correlation (r = -.180, 95% CI: [-.193, -.166])[1], suggesting the greater the amount of time that has passed since a PCS move, the greater the likelihood the spouse was employed.

The linear trend test was statistically significant (p = .002), indicating this relationship grew stronger over time. Thus, the negative impact of PCS moves has

[1] Correlation strengths are generally considered: very weak (r = .00-.10), small (r = .10-.30), medium (r = .30-.50), and strong (r > .50) (Cohen, 1969)

increased since 2006. Additionally, this again suggests the most recent effect size estimate (r = -.273) is a more accurate estimate of the current association between these constructs than the average over time.

Time to find employment after last PCS move and spouse employment status

Four Spearman's rho correlation coefficients (from DMDC Surveys of Active Duty Spouses: 2006, 2012, 2015, and 2017) were meta-analyzed, representing 11,306 participants. The effect sizes for the association between time to find new employment after a PCS move and spouse employment are presented in Table 5. Across the four reports, we found a small positive association (r = .187, 95% CI: [.168, .205]). This suggests, on average, spouses who were employed at the time of the survey were more likely to report they found employment relatively quickly (e.g., 6 months or less) than to report it took longer (e.g., 10 months or more) after a PCS move.

The correlation in 2006 (r = .076, 95% CI: [.037, .115]) was smaller than the average correlation for 2012, 2015, and 2017 (r = .223, 95% CI: [.202, .243]). This difference was statistically significant (r_{diff} = .147, 95% CI: [.102, .191]) and the average correlation for 2012, 2015, and 2017 provides the best description of the association between the time to find employment after the last PCS move and spouse employment status.

Need new credential after last PCS and employment status

As previously noted, some military spouses require new state or local licenses or credentials after a PCS move in order to find employment in their field. This need for a new credential can impact spouses' employment and career development. Three of the DMDC surveys provided information for Phi correlation coefficients to be calculated (2012, 2015, and 2017). Together, these studies represented 8,312 participants. The

effect sizes for the association employment status and whether the spouse needed to acquire a new professional license or credential in order to work in the new duty station are presented in Table 5. Across the three reports, we estimated a near-zero average effect size (r = .018, 95% CI: [-.003, .034]).

Analyses revealed a statistically significant linear trend across time (p = .028), such that the strength of the relationship has grown over time, indicating spouses who *did* need to acquire a new license became slightly more likely to be employed than they had been in previous years. However, even the most recent association between needing a new credential and employment status was negligible (r = .039), suggesting these constructs are still not strongly related.

Spouse satisfaction with the military lifestyle and employment status

Six studies provided evidence related to spouse satisfaction with the military and their employment status. The DMDC tabulations and Blue Star Families reports included different variable types (i.e., rank-ordered vs. artificially dichotomized), which necessitated the calculation of different correlation types (Spearman's rho vs. tetrachoric). As such, five Spearman's rho correlation coefficients (from DMDC Surveys of Active Duty Spouses: 2006, 2008, 2012, 2015, and 2017) and one tetrachoric correlation from the Blue Star Families report were meta-analyzed representing 30,533 participants. The effect sizes for the association between spouse employment and military life satisfaction are presented in Table 5. Across the six reports, we estimated a small negative average correlation of r = -.106, 95% CI: [-.093, -.120], such that spouses who were employed or reported that their partner's service had a positive impact on their career also reported slightly greater military life satisfaction.

A linear trend test involving the five estimates from the DMDC tabulation reports did not reveal statistically significant differences across time (p = .857), suggesting the connection between satisfaction with the military and employment status has not

changed over time. In addition, the average association across the six available effect sizes should be the most accurate estimate of the association between spouse employment and military life satisfaction.

Sources of Bias

The DMDC tabulation reports and Blue Star Families reports examined different variable types (rank-ordered vs. artificially dichotomized), which necessitated the calculation of different correlation types (Spearman's rho vs. tetrachoric). Given these different correlation types, we conducted additional analyses to examine whether correlation type biased the effect sizes in this analysis. Results showed a highly significant difference between the average Spearman correlation in the DMDC reports (r = -.054, 95% CI: [-.066. -.041]) and the tetrachoric correlation in the Blue Star Families report (r_{tet} = -.370, 95% CI: [-.419, -.321]) The difference between the average Spearman correlation and the tetrachoric correlation was statistically significant (r_{diff} =.316, 95% CI: [.266, .367]). Tetrachoric correlations tend to be larger than Spearman correlations because the tetrachoric correlation is estimating the correlation between the underlying quantitative constructs rather than the observed ordinal responses. The difference between the two correlation types also could be due to demographic differences in the populations represented by the Blue Star Families report and the DMDC report.

Satisfaction with the military and Commitment to the military

Using data from two academic journal articles (Heilman et al., 2009; Norris, 2004) and one DoD report (DMDC, 2015b), we meta-analyzed three effect sizes representing 8,990 participants. Importantly, the two of the three studies under investigation examined turnover intentions, which can be considered the inverse of commitment to the military. The DoD report assessed support to stay on active duty. As such, we reverse coded the DoD report to be conceptually consistent with the two

academic journal articles. We observed a moderate to large negative correlation across the two studies (r = -.510, 95% CI: [-.572, -.442]), such that greater satisfaction with the military was associated with lower turnover intentions (i.e., greater commitment to staying in the military). We did not have sufficient data points to test for potential bias or moderating variables.

Discussion

Key Findings & Implications

This meta-analysis quantifies the strength of the associations between two aspects of MLE and key predictors and outcomes across available studies.

The impact of PCS moves on spouse employment

Assessing the relationship between spouse employment status and the number of PCS moves experienced during the service member's career, a near zero correlation was found across several studies. This near zero correlation was consistent over time, indicating that ***there was essentially no impact of cumulative PCS moves on whether a spouse was employed or unemployed***.

In contrast, the amount of time since a spouse's last PCS was related to their employment status, such that a greater amount of time since the last PCS was associated with associated with a greater likelihood of employment. In essence, employment was more likely with more stability in a single location. Considered in reverse, ***a more recent PCS move was related to a higher likelihood of spouses being unemployed***. This is a noteworthy contrast to the total number of PCS moves over time being unrelated to employment status. In other words, long-term instability may not be related to employment status, but a recent uprooting can have a detrimental impact on spouse employment. This pattern was also evidenced to be growing stronger over time. In more recent years, the negative impact of PCS moves has increased for spouses seeking employment. This is not

to say that a pattern of relocation has no impact on spouses' careers in other regards. As a recent PCS increases the likelihood of current unemployment, so too are spouses probably encountering the detrimental effects of unemployment and job transition: loss of seniority, vested retirement, accrued time off benefits, and other issues.

Long-term instability may not be related to spouse' employment status, but a recent uprooting can have a detrimental impact on spouse employment.

When examining the amount of time spouses needed to find employment after a PCS move, there was a small negative correlation across all studies. Spouses who had spent relatively less time seeking employment were also those who were employed at the time of the survey. While we do not know whether spouses were still in the jobs they had found so quickly after their last PCS move, this finding does shed light on the negative impact of PCS moves on spouses seeking employment. ***Those spouses who are able to quickly find a new job after PCS are also those are more likely to be employed later***. In contrast, those spouses who struggle to find employment after a PCS move might find it to be a challenging and time-consuming process. It may be that quickly finding employment enhances one's long term employability by virtue of smaller gaps in one's resumes. However, it may also be that some spouses have more in-demand skillsets and are thus more likely to find work quickly and sustain that employment. This can be considered in conjunction with findings related to the negative impact of a recent PCS move; essentially, a recent move can negatively impact spouse employment, and that negative impact can be compounded for spouses who are not able to quickly find a new job after a PCS move.

A recent move may negatively impact spouse employment, which may compounded for spouses who do not quickly find a new job.

In addition, just as was seen with the detrimental effect of recent PCS moves on spouse employment, the negative link between how quickly spouses find employment after PCS moves and their current employment status grew stronger over time, indicating this became more true in recent years. This could possibly be a reflection of the general domestic job market, as the 2006 ADSS showed minimal relationship between these factors; a stronger relationship in 2008 might be reflective of the economic recession that began in 2008.

The need to acquire a new professional license or credential was generally unrelated to a spouse's employment status across three years of the Survey of Active Duty Spouses. This association did increase slightly over time, although the association remained near zero. Spouses who *did* need to acquire a new license became slightly more likely to be employed than they had been in previous years. This finding is encouraging, and may suggest the success of recent national efforts to reduce the barriers for spouse employment in career fields that require state credentialing, such as education and medical careers. Still, more evidence is needed to fully understand the benefits of those efforts.

Satisfaction with military life

We examined the associations between satisfaction with military life and two important variables: spouse employment status, and commitment to the military. For the former, satisfaction with the military life was weakly related to spouse employment status, such that those spouses who had experienced a positive career impact/were employed were more likely to report greater satisfaction with military life. It may be that ***when spouses***

can easily see the benefits of military life (e.g., they are employed), they are more satisfied with the military. Put another way, those spouses who are not employed or do not really see a positive career impact of their partner's service are *less* satisfied with military life.

Military families' satisfaction with military life also showed a strong association with commitment to the military (operationalized as lack of "turnover intentions" and inversely, "support to stay on active duty"). Across studies, being more satisfied with military life also resulting in greater commitment to staying in the military. The strength of this effect was notably large, which indicates a strong and robust association between these two variables. These findings indicate when families are more satisfied, there is greater commitment to military service within the family. Thus, the benefits, programs, and services that help to boost spouse satisfaction with the military may foster a sense of commitment to the military within these families, and by extension, help to reduce attrition among Service members.

Supporting spouses and ensuring they are satisfied with military life may also improve commitment and retention of Service members

Considering the findings from across this project, results also suggest improving spouse employment outcomes can have second-order effects for their satisfaction with the military, as well as their commitment to the military. Findings clearly demonstrated that spouses who were employed reported greater satisfaction with the military, and more satisfaction with the military related to higher commitment to the military. Taken with the findings related to PCS moves, ***these results provide evidence of the importance of spouse employment support and programs, particularly in the wake of a PCS move***.

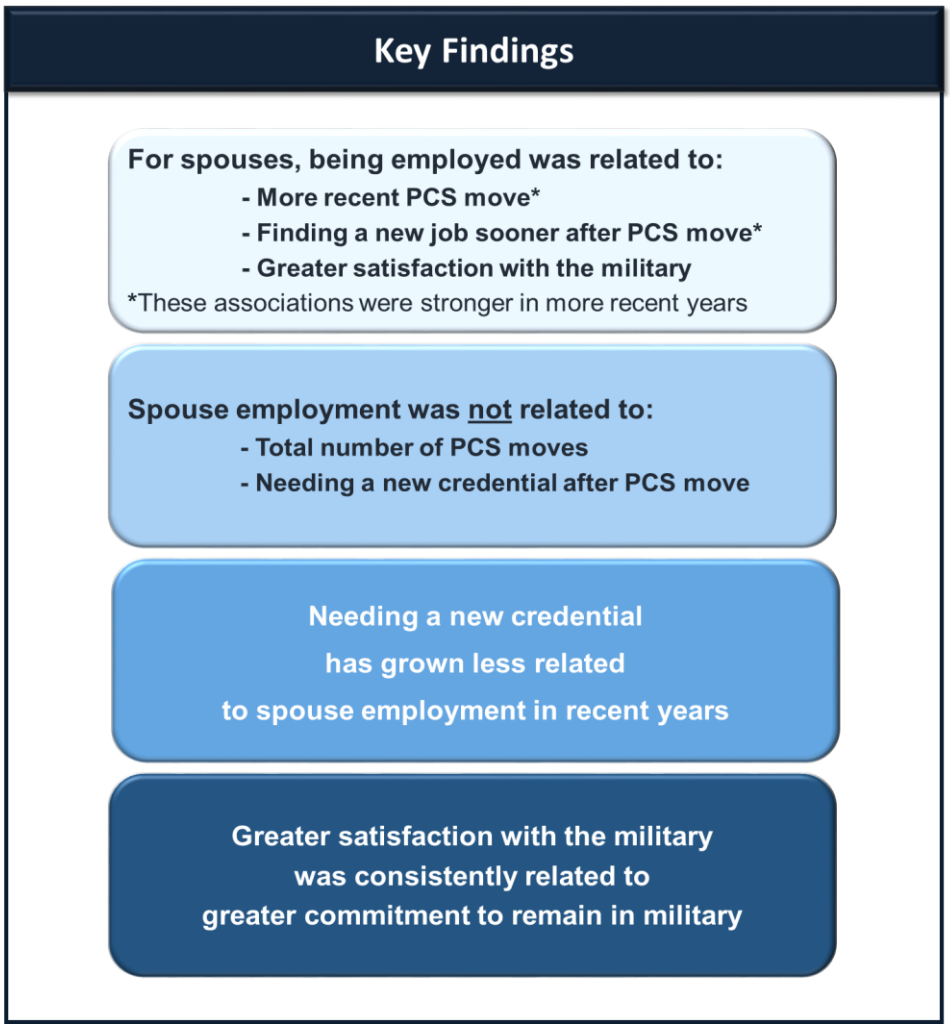

Figure 3. Key Findings

More evidence is needed related to MLEs

In our initial review of the literature for this meta-analysis, we encountered a large number of research reports, briefings, and articles that were relevant to the military life experiences domain. Although these studies passed Phase 1 review, there was limited quantitative evidence sufficient for incorporating into a meta-analysis. For example, we sought to include studies that examined the association between PCS moves or

satisfaction with the military and finances or financial stress. However, we failed to find any usable information that related finances to PCS moves or satisfaction with the military. The limited research evidence should not be taken as an indicator of a lack of study or concern that the military research community has with these domains. Instead, it is more likely because these variables are not always assessed in relation to one another, even if they are studied in relation to other variables. The variables may also have been studied outside of our time window, used a qualitative approach, included only in multivariate analyses, or did not report sufficient information to include in our meta-analysis. While previous qualitative reviews (i.e., Hawkins et al., 2018) provide some insight into the findings related to other aspects of MLE, additional quantitative evidence that examines the variables of interest and provides detailed information about findings is needed across the field.

Limitations

One limitation of this meta-analysis is the limited number of studies that were able to be incorporated. As previously mentioned, studies examining PCS moves or satisfaction with military life did not meet our eligibility criteria, or did not provide sufficient information to be included in the current analyses. In addition, although we attempted to incorporate unpublished data into our analyses, we did not receive any additional analyses. It is definitely possible that some researchers have the data and means to assess these relationships with data they hold, but these questions may not be of immediately pressing operational value within the grand scheme of military operations and concerns. As such, we very strongly urge future research and reports to include measures of these relationships.

A second limitation is the focused nature of the studies included in these analyses. The majority of the studies included in this meta-analysis came from several years of Survey of Active Duty Spouses tabulations of results. Although this set of

analyses is generally representative of the population of active duty military spouses in regards to demographic variables, the same set of limitations that holds true for this survey therefore applies to the conclusions we make in this report. That is, the individuals who are inclined to respond to the ADSS may feel differently than non-respondents, including individuals who are particularly more or less satisfied with military life or have strong and noteworthy experiences within their military life. In practice, military decision leaders likely have access to data and information that would be pertinent to assessing this question, however, they may not see the need to report on this information relative to other issues, or they may rely on qualitative information or anecdotes.

Recommendations

One key finding in this report is military spouses are not any more or less likely to be employed with more or less moves over their time in the military. It is possible spouses with a higher number of cumulative moves may opt to leave the labor force entirely. However, spouses were more likely to report being unemployed (and seeking work) in the immediate aftermath of a PCS move. This unemployed status, in conjunction with a host of other life disruptions (social, healthcare, etc.) is certainly a cause of additional stress in an already stressful time. As such, family support services should focus efforts on assisting spouses in the immediate aftermath of a PCS move. Even though these services may be challenging to utilize in the stressful deluge of tasks that accompany a relocation, it is important to reach spouses relatively early, as the longer it takes to find employment, the less likely a spouse is to be employed. ***Decision-makers and leaders should identify ways to optimize the employment support provided to spouses around the time of their PCS move to help reduce the negative impact of that move on employment, and also minimize the likelihood of compounding the impact of delays in finding employment***. Programs and services

can intentionally target recruitment or advertisement efforts toward families and spouses who will be about to – or have just completed – a PCS move. In addition, program activities can focus on reducing or alleviating barriers for recently moved spouses to find employment. For example, providing on-demand or short-term child care for spouses to utilize to support their job search and/or interview appointments.

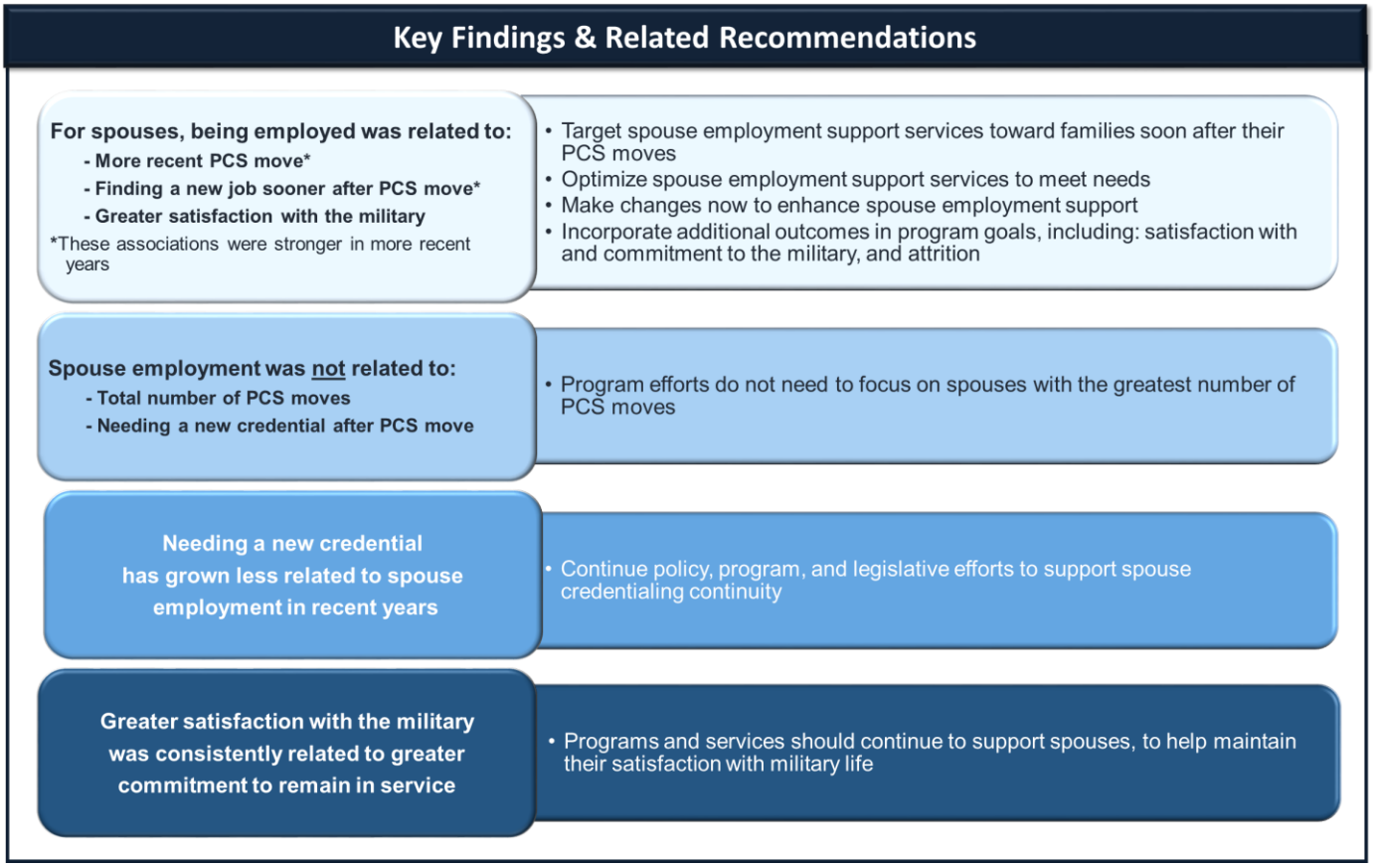

Figure 4. Key Findings and Related Recommendations

Along with this, the current findings indicate the negative impact of PCS moves on spouse employment has increased in recent years. If the trends identified in this meta-analysis continue, PCS moves will become increasingly more challenging for

spouses. As such, ***it is critical for programs and services to take action to address these issues right away***. Program leadership should consider strategies to optimize spouse employment support immediately following PCS moves. This can include designating sufficient funding to programs that will directly provide support to spouses seeking employment, or programs that help to minimize the barriers spouses face to gaining employment (e.g., child care).

In fact, optimizing spouse employment support, especially following PCS moves, can have broader positive effects on spouses' satisfaction with the military and commitment, which can have a direct outcome of retention of Service members. Given this, ***spouse employment programs and services can expand their measured outcomes or goals to incorporate spouse satisfaction with the military, military families' commitment to the military, and Service member attrition***.

Particularly of interest is in recent years, the chances of being unemployed when needing to acquire a new professional license or credential has diminished. This may be in part due to the recent vigorous efforts to reduce this burden on military spouses as they seek both employment and support of their military service members. These ***policy, program, and legislative efforts should continue to ensure spouses can easily navigate their career continuation after a PCS move***. Although great strides have been made in this domain, continued efforts will additionally facilitate the employment desires of military spouses.

Finally, we strongly recommend ***future research should quantitatively explore the relationship between PCS moves and spouse employment, finances, and commitment to the military***. It is possible the lack of current published findings is an indication the relationship between these variables is considered to be commonly understood without a need for quantitatively assessing that relationship.

Conclusion

This meta-analysis explored the links between PCS moves, satisfaction with the military, and employment status and commitment to the military. First, we reviewed the vast literature on MLEs, and identified common factors associated with this indicator of readiness. Then, we calculated the strength of the associations between PCS moves, satisfaction with the military, spouse employment status, and commitment to the military. This approach provides a unique opportunity for the Army to better understand the risk and protective factors that contribute to spouse readiness, as well as the relative importance of each factor across studies. In this project, we found that the recency of a PCS move – and not the cumulative number of moves – can negatively impact spouse employment, and the longer it takes spouses to find employment, the greater problem can become. In addition, it was clear spouse satisfaction with military life is strongly related to their commitment and preference for whether their Service member remains in the military. These research findings provide evidence to justify existing programs and services, inform program and service improvements, and set funding priorities.

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APPENDIX A: Information Collected during Phase 1, Phase 2, and Phase 3 Reviews

PHASE 1 REVIEW	PHASE 2 REVIEW	PHASE 3 REVIEW
Citation Information:	**Article Details:**	**Correlation Analyses:**
Authors	Paper Type (journal article, report, unpublished manuscript, conference presentation,	Correlate 1 Construct
Publication Year	Authors' Affiliation (Academic, Government, Private, Non-Profit, Mixed)	Correlate 1 Measure
APA Citation	Study Sponsor (DoD/VA, NIH/ Federal, Academic, Non-Profit/Foundation, Mixed, None,	Correlate 2 Construct
Abstract	Purpose of Study	Correlate 2 Measure
Eligibility Criteria Information:	Study Type (interview, survey, administrative records)	r Statistic (value)
Analysis (quantitative, qualitative, mixed, theory/review)	Program Evaluation (y/n)	Correlation Type
Population(s) (SM, Spouse, Veteran, Veteran Spouse, Children, Other)	**Population Information:**	p value
Nationality (US, UK, Canada, Australia, New Zealand, Israel, etc. or "not specified")	Total Sample Size	Analysis N
Data Timeframe (date/range of data collected, or "not specificed")	SM Component composition (% Active Duty, not specified)	Correlate 1 reliability statistic type (cronbach's, etc)
Aspect of Military Life Experiences (e.g., PCS moves, instability, satisfaction with military,	SM Service Branches Included (Army, Navy, Air Force, Marine Corps, Mixed)	Correlate 1 reliability statistic (value)
Category of Predictors/Correlates/Moderators (e.g., MLE, mental health, deployment, marital	SM Rank Composition (% Enlisted, not specified)	Correlate 1 binned? (y/n)
Specific Predictors (author terminology)	SM Gender Composition (% male, not specified)	Correlate 1 range restricted? (y/n)
Category of Outcomes (e.g., MLE, mental health, deployment, marital quality/abuse,	Spouse Gender Composition (% male, not specified, n/a)	Correlate 1: Explain binning / restriction
Specific Outcomes (author terminology)	SM Age (range, mean)	Correlate 2 reliability statistic type (cronbach's, etc)
Project Team Information:	Spouse Age (range, mean)	Correlate 2 reliability statistic
Comments	SM Race/Ethnicity (% White)	Correlate 2 binned? (y/n)
Keep or Drop at Phase 1 Review	Spouse Race/Ethnicity (% White)	Correlate 2 range restricted? (y/n)
	Clinical / Support-Seeking Sample (clinical, support, none)	Correlate 2: Explain restriction
	Reporter (Objective, Self-report, Observations, Records)	Any guesses, calculations or estimates?
	Analysis Information:	Comments
	MLE Aspect	**Dependent Groups Analyses (t-test, ANOVA)**:
	MLE Measure	Predictor Construct
	Variate Analysis (Uni/Bivariate, Multivariate)	Predictor Measure
	Predictor / Correlate / Moderator Construct	Outcome Construct

PHASE 1 REVIEW	PHASE 2 REVIEW	PHASE 3 REVIEW
	Analysis Information:	**Dependent Groups Analyses (t-test, ANOVA):**
	Predictor / Correlate / Moderator Measure	Outcome Measure
	Outcome Construct	If ANOVA: total # of groups
	Outcome Measure	Time 1 Name
	Statistical Test (e.g., t-test, Pearson's correlation, x2, SEM)	Time 2 Name
	Repeated Measures (yes, no)	Amount of time between Time 1 & 2 (days; assume months=30d)
	Repeated Measures Timescale	Time 1 Mean (outcome)
	Comparison Made (men/women, SM/spouse, military/civilian spouse)	Time 1 SD (outcome)
	Analysis Sample Size (or not specified)	Time 2 Mean (outcome)
	Analysis Sample Size Calculation or Estimate Comment	Time 2 SD (outcome)
	Analysis Popluation (SM, Spouse, Mixed)	Analysis N
	Other Analysis Population Details	If t-test: t-value
	Page number, paragraph number	If ANOVA: F-value
	Missing results about measured variables (yes, no)	df (if ANOVA, use df-error)
	Missing results Comment	p value
	Project Team Information:	Outcome reliability statistic type (cronbach's, etc)
	Guessed or calculated information	Outcome reliability statistic (value)
	Comments	Outcome binned? (yes/no)
	Keep or Drop at Phase 2 Review	Outcome range restricted? (yes/no)
		Outcome: Explain restriction
		Any guesses, calculations or estimates?
		Comments
		Independent Groups Analyses (t-test, ANOVA
		Predictor Construct
		If not subpopulation, Predictor Measure
		If predictor is a binned continuous var, Cut-off(s)
		Outcome Construct
		Outcome Measure
		If ANOVA: total # of groups

PHASE 1 REVIEW	PHASE 2 REVIEW	PHASE 3 REVIEW
		Independent Groups Analyses (t-test, ANOVA
		Group 1 Name
		Group 1 N
		Group 1 Mean
		Group 1 SD
		Group 2 Name
		Group 2 N
		Group 2 Mean
		Group 2 SD
		If ANOVA: F-value
		If t-test: t-value
		If missing any Mean, SD, or N: Cohen's d
		p value
		Outcome reliability statistic type (cronbach's, etc)
		Outcome reliability statistic
		Outcome binned? (y/n)
		Outcome range restricted? (y/n)
		Outcome: Explain restriction
		Any guesses, calculations or estimates?
		Comments
		Binary Outcome Analyses (2x2 only, chi2):
		Group 1
		Group 2
		Outcome 1
		Outcome 2
		Group 1, Outcome 1 Number
		Group 1, Outcome 2 Number

PHASE 1 REVIEW	PHASE 2 REVIEW	PHASE 3 REVIEW
		Group 2, Outcome 1 Number
		Group 2, Outcome 2 Number
		Group 1 Total Number
		Group 2 Total Number
		X^2 value
		p value
		Cohen's D
		Odds Ratio
		Lower CI
		Upper CI
		Any guesses, calculations or estimates?
		Comments

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