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				19b. TELEPHONE NUMBER (include area code) 571-256-8146

US Army Morale, Welfare and Recreation (MWR) Programmes : Links to Readiness and Retention

Authors/Auteurs

Joanne Marshall-Mies is President & Director of Research of Swan Research, Inc., Arnold, Maryland.

Joanne Marshall-Mies est présidente et directrice de la recherche de la société Swan Research, Arnold, Maryland.

Dr. **David Westhuis**, a retired US Army lieutenant-colonel, is emeritus associate professor and director of the Master of Social Work Program at Indiana University.

David Westhuis, lieutenant-colonel en retraite de l'US Army, est maître de conférences émérite et directeur du Master de travail social à l'Université d'Indiana.

Dr. **Richard Fafara** is an analyst in the Operations Directorate, Office of the Assistant Chief of Staff for Installation Management, US Army, Washington, DC. He also holds an adjunct professorship at the Department of Philosophy, Northern Virginia Community College, Alexandria, Virginia.

Richard Fafara est analyste à la Direction des opérations, Bureau du sous-chef d'état-major pour la gestion des emprises et garnisons de l'US Army, Washington, DC. Il enseigne au Département de philosophie du Northern Virginia Community College, Alexandria, Virginie.

Abstract

This study evaluates how US Army Morale, Welfare and Recreation (MWR) programme usage by active-duty soldiers and civilian spouses of active-duty soldiers is correlated directly and indirectly with the following readiness and retention variables: “desire for the soldier to stay in the Army until retirement”, “Army career intentions”, “satisfaction with the quality of Army life”, “emotional attachment to the Army”, and “extent to which providing MWR services shows the Army cares about soldiers and their families”. The study replicated and extended a 2007 pilot study and found that usage of MWR services is positively associated directly and indirectly with all outcome variables. All direct and indirect associations have notable effect sizes. The findings are consistent across soldiers and spouses in three different Army-wide surveys, four separate databases, and multiple measures of readiness and retention. These robust findings allow the Army to state with confidence that MWR contributes to mission-essential goals.

Résumé

La présente étude examine les corrélations directes et indirectes entre la fréquentation par les militaires d'active et leurs conjoints civils des services d'amélioration du moral, de protection sociale et de loisirs que met en œuvre l'armée de Terre américaine à l'intention des personnels militaires et des familles, et des variables mesurant l'état de préparation des forces et la fidélisation de ces personnels: “désir de rester dans l'armée jusqu'à la retraite”, “intentions de carrière dans l'armée”, “satisfaction à l'égard de la qualité de la vie militaire”, “attachement émotionnel à l'armée de Terre”, et “mesure dans laquelle la fourniture de services de ce type montre que l'US Army se soucie de ses personnels et de leurs familles”. Reprenant, en l'élargissant, une étude-pilote de 2007, cet article montre que la fréquentation de ces services est positivement associée, de manière directe ou indirecte, avec toutes les variables dépendantes considérées, et qu'elle produit sur elles des effets sensibles. Ces résultats valent sans exception pour une multiplicité de mesures de la préparation et de la fidélisation

des personnels, ainsi que pour les militaires et leurs conjoints ayant pris part à trois enquêtes différentes à l'échelle de l'armée de Terre, et enregistrés dans quatre bases de données sans liens entre elles. Ces résultats sont suffisamment convaincants pour que l'US Army puisse, sans risque de se tromper, considérer que les services rendus en matière de moral, de protection sociale et de loisirs ont un impact positif au regard des objectifs centraux qu'elle se propose dans le cadre de ses missions.

Keywords

US Army ; Morale, Welfare, and Recreation (MWR) ; retention ; readiness ; emotional attachment ; perceived organizational support.

Mots-clés

Moral, protection sociale et loisirs; armée américaine; fidélisation; préparation des forces; attachement émotionnel; soutien organisationnel perçu.

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US Army Morale, Welfare and Recreation (MWR) Programmes : Links to Readiness and Retention

By Joanne Marshall-Mies, David Westhuis & Richard Fafara

Using data from the 2005 *Sample Survey of Military Personnel* (SSMP), a pilot study by Fafara and Westhuis conducted in 2007, hereafter referred to as the “pilot study”, reported a positive relationship between using Army Morale, Welfare, and Recreation (MWR) programmes and key retention and readiness outcome variables. They found that use of MWR has a positive, large, direct and indirect association (via direct association with “emotional attachment to the Army”) with soldiers’ “desire to stay in the Army until retirement”, “Army career intentions”, and “satisfaction with the quality of Army life”. Also, they found that use of MWR has a medium, positive, direct association with “soldier teamwork and *esprit de corps*”. They noted a number of limitations in the study/analysis: findings were exploratory, were based on a single soldier sample (the 2005 SSMP), and needed to be replicated with other survey samples selected from military and non-military populations.¹

The current study addresses these limitations. It replicated the pilot study using the 2005 SSMP dataset and extended the analysis to three additional Army-wide datasets from the same time frame, which include spouses of active duty soldiers who completed the 2004/5 *Survey of Army Families V* (SAF V) and active duty soldiers and spouses of active duty soldiers who completed the 2005 *Leisure Needs Survey* (LNS). The current study also reviews the pertinent civilian and military literature relevant to use of MWR programmes and soldier readiness, examines and summarizes several theoretical paradigms that suggest how to define the relationships of MWR programmes and soldier readiness, and provides suggestions for future research which will contribute to the knowledge base of how MWR programmes are associated with various intervening and outcome variables.

Literature Review

MWR programmes have their origin in the Revolutionary War. The Continental Army's Articles of War allowed sutlers (traders) to sell their wares in soldier encampments in return for which, the sutlers paid monthly fees received by Commanders. The latter used these funds for the collective benefit of soldiers and their families by providing aid to indigent

¹ Cf. Fafara & Westhuis, 2007 ; Westhuis, Fafara & Sea, 2007. The authors wish to thank Dr. Morris Peterson, US Army Research Institute, for his invaluable assistance and the expertise he provided in developing this article, especially as regards SSMP data.

widows and children, soldiers discharged with no pensions, to buy books or magazines for the post library, or to support post schools and bands. In 1821, these funds were formally recognized as Post Funds and together with other activities such as unit, welfare, and library funds, provided Commanders with tools to provide MWR programmes needed by soldiers and their families that were not yet formally recognized as Governmental responsibilities. By 1889, Army regulations authorized canteens as trading establishments wholly owned by the military, as facilities to purchase items of personal need, and as controlled recreational environments for troops.

But it was World War I that caused the Army to realize the critical importance of MWR programming to soldiers. On the battlefields, behind the lines, Salvation Army sisters and Red Cross volunteers ministered to the needs of soldiers as the forerunners of today's MWR specialists. After the war ended, funding ceased and morale programmes were mothballed. It was not until July 1940 that the Morale Division – later named Special Services – was established within the Adjutant General's Office.

Between 1946 and 1955, core recreation programmes were established and staffed by a combination of active duty military and civilians. Until the mid-1980s, active duty enlisted soldiers and officers held military occupational specialties in Special Services and were assigned at every level of command. As those occupational specialties were discontinued, civilians continued to operate MWR programmes with military oversight.

The publication in 1983 of the Army Chief of Staff's White Paper, *The Army Family*, signed by General John A. Wickham, Jr., revolutionized Army thinking. *The Army Family* recognized the integral support role of the soldiers' families and expanded support of the soldier to include the soldier's family.² General Wickham's initiative marked the first systematic effort to design programmes and policies comprehensive enough to address Army family concerns as a whole. Down through the years, Special Services underwent considerable reorganization and had many names before evolving into its present configuration. The creation of the US Army Community and Family Support Center (CFSC) in November 1984 and the development and execution of a research agenda on Army families were direct results of the 1983 White Paper. The Family and Morale, Welfare and Recreation Command, established in October 2006, serves as the current headquarters for MWR operations.³

Today, US Army MWR programmes constitute a comprehensive network of physical, cultural, and social programmes designed to enhance the lives and contribute to readiness and the development of strong, self-reliant soldiers (Active, Reserve, and Guard), their families, civilian employees, military retirees, and other eligible participants to support the ever-

² Wickham, 1983. For an "historical summary, survey, and assessment of changes and progress since 1983", see Shinseki, 2003. A fuller version of the fascinating history of Morale, Welfare and Recreation in the US Armed Forces has been developed by Joseph Trebing, Office of the Assistant chief of Staff for Installation Management, US Army, in his unpublished manuscript by the same title.

³ See <http://www.armymwr.com/portal/about/> (accessed April 3, 2009).

evolving Army mission. The Army understands that in order to attract and retain top quality soldiers, it must provide a quality of life comparable to that in the civilian community.⁴

With an annual budget of approximately \$3.4 billion and 30,000 employees worldwide serving 3.9 million authorized patrons, the MWR workforce strives to deliver the highest quality programmes and services at Army installations – ranging from deployment support, and family and child and youth programmes to recreation, sports and fitness, entertainment, travel, and leisure activities. In addition, MWR personnel voluntarily deploy to promote physical fitness and to provide recreation, social, and other support services to soldiers in theatre. MWR programmes are recognized as vital to mission accomplishment by reducing stress, building skills, encouraging self-confidence and self-reliance, and fostering unit *esprit de corps*.⁵

In the post-9/11 era of ongoing conflict, major transformation of the Army, budget constraints, and programme scrutiny within the Department of Defense (DOD), it has been increasingly important to answer questions such as : “Can we demonstrate the value of MWR programmes ?” ; “Should all MWR programmes continue to be funded?”; “If so, at what levels?” These questions arise from a growing conflict between the need for dollars to fund combat essential functions and being able to show that Army MWR programmes contribute to mission essential goals such as soldier retention, readiness, and commitment to the Army.⁶

Although the Army has routinely collected data on soldier and spouse use and their perceived importance of MWR programmes, studies on the relationship between use of the programmes and readiness outcomes have been few and have had serious limitations. In 1993, a report summarized a decade of a sizeable body of research on Army families, triggered by the Army Chief of Staff’s White Paper and supplemented it with research on Army families conducted by other military and civilian agencies. The report found that MWR “*program use is positively related to the perception of program usefulness*”; soldiers and spouses alike believe that the availability of these programmes “*is essential to the well-being of the Army community*”; but “[the] *effects of these [MWR] services on readiness and retention are unknown*”.⁷ An update of the report in 2007 drawing on research produced, for the most part after the 1993 report was published, cited survey data suggesting “*that soldiers and families*

⁴ For more historical, programmatic, policy, and financial detail about US Army MWR Programs, see : <http://www.armymwr.com/> (accessed April 3, 2009). Identical or similar programmes to MWR exist within the other US Military Services and military forces of other countries. See, for example, www.militaryhomefront.dod.mil/l/mwr (accessed 3 April 2009), and Tanner, Aker, Otis & Wang, 2008.

⁵ See the Statement of Arthur J. Myers, Acting Deputy Under-Secretary of Defense (Military Community and Family Policy) before the Subcommittee on Military Personnel of the Committee on Armed Services House of Representatives on March 12, 2009 (http://armedservices.house.gov/pdfs/MP031209/Myers_Testimony031209.pdf accessed April 3, 2009).

⁶ See the questions for further examination in “Manning the Army – Developing a Human Capital Strategy”, *The United States Army Future Concept for the Human Dimension*, Ver 0.7 (US Army Training and Doctrine Command, 21 December 07), pp.161-162.

⁷ Segal & Harris, pp.47 (our emphasis), 50, 48, respectively.

*value MWR programmes and facilities; use them frequently; and consider them important to morale, retention and readiness”.*⁸

Under contract to the US Army Community and Family Support Center, Caliber Associates conducted two in-depth reviews of the military and civilian literature on the contribution of MWR and similar civilian programmes to individual and unit readiness. Their earlier report (1995) highlighted a number of direct and indirect relationships between MWR programmes and readiness.⁹ In their later report (2003), Caliber developed and refined a conceptual model based on documented linkages between MWR programmes and the readiness dimensions of unit cohesion, fitness, technical competence, discipline, motivation/effort, preparedness, and commitment. Additional linkages highlighted in the report included the relationship of MWR programme usage with the intermediate outcomes of job satisfaction, family adaptation, and skill-building – each of which contributes to individual and unit readiness in its own right.¹⁰ This conceptualization of readiness was similar to Campbell *et al.*’s model of job performance¹¹ in that both models present performance/readiness as consisting of two dimensions: (1) task performance (i.e., Technical Competence in the 1995 Caliber model and Job-Specific Task Proficiency in the Campbell model) and (2) contextual performance (i.e., Discipline and Effort/Motivation in both models).

In addition to supplementing and reinforcing many of the relationships established in their earlier report, the later Caliber report provided evidence linking MWR programmes with a number of subcomponents of readiness, including task cohesion (a subcomponent of unit cohesion), organizational citizenship behaviours (subcomponents of motivation/effort), and affective, normative and continuance commitment (subcomponents of commitment). The report also identified additional intermediate outcomes and established their relationships with MWR programmes. These intermediate outcomes included perceived organizational support and self and collective efficacy.¹² The variable “perceived organizational support” (POS) plays a prominent role in the current literature on organizational psychology and team performance. The civilian literature identifies a correlation between programmes which demonstrate support for employees and employee commitment to the organization. This phenomenon is best understood in terms of social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). Actions on the part of the organization such as support services, and actions on the part of organizational representatives such as fair decision making promote POS. This, in turn, promotes employee commitment to the organization by creating a sense of indebtedness in the employees.¹³

⁸ Booth, Segal, Bell, Martin, Ender, Rohall & Nelson, 2007, p.116 (our emphasis).

⁹ Harris, Blair & O’Neil, 1995.

¹⁰ Booth & McGonigle, 2003.

¹¹ Campbell, McCloy, Oppler & Sager, 1993.

¹² Booth & McGonigle, 2003, *op.cit.*

¹³ Settoon, Bennett & Liden, 1996.

Studies have also demonstrated a positive correlation between POS and increased employee organizational commitment.¹⁴ POS is enhanced when organizations demonstrate that they care about employees' well-being with actions which acknowledge that the employees' contributions are valued. There is a strong employee response to organizational discretionary support and an aversive need to discharge the debt that employees feel towards organizations which act in a manner that demonstrates care, e.g., offering MWR programmes. The employee does not like the feeling of being in debt [aversion] or "owing" the employer; therefore, the employee begins to try to discharge or repay the debt by increased commitment to the organization. Ways of discharging this debt include completing responsibilities thoroughly and in a timely manner, working beyond what is required, and attending to actions that are valued by the organization.

We know that awareness of support programmes, even when they are not used, increases satisfaction with military life and enhances retention (Etheridge, 1989). Few studies have examined the relationship between MWR programme usage and organizational commitment, but they have suggested a positive correlation between MWR usage and the intent to remain in the military.¹⁵ Although in both of their reports Caliber systematically identified articles, technical reports, and other written documentation relevant to describing the relationship between MWR and readiness in general, and developed conceptual models that emerged from the literature review, the models had never been tested. Caliber found that *"most employee programs shown to positively impact organizational outcomes in the civilian sector have a military counterpart within Army MWR programs"*,¹⁶ and *"MWR programs influence perceived organizational support, job satisfaction, organizational commitment, family adaptation, skill-building, and self-efficacy – each of which is related to readiness"*,¹⁷ Caliber made the important point that

determining that a relationship exists between [MWR programmes such as] family services/activities and commitment does not describe the extent to which family services/activities actually impact commitment... [T]he most direct way to examine the impact of MWR on readiness is to evaluate the model's links empirically using extant data... The strongest support for the MWR-readiness relationship can only come from examining this relationship directly.

Caliber went on to recommend that *"research should be conducted to evaluate the links proposed in the current model empirically using data from current users of MWR programs"* (Booth & McGonigle, 2003, *op.cit.*, pp.40-41).

¹⁴ See Eisenberger, Fasolo & Davis-LaMastro, 1990. Griffith (2009) has found that for Army Reserve soldiers material incentives may increase recruitment and retention, but may not enhance readiness. Rather, incentives fostering normative and affective commitment were related both to self-reported career intentions and perceived unit readiness. Not surprisingly, caring leaders strongly contribute to retention intentions. See Griffith, 2005.

¹⁵ See Bourg & Segal, 1999 ; Burnham, Meredith, Donald-Sherbourne, Burciaga-Valdez & Vernez, 1992 ; Vernez & Zellman, 1987; Kerce, 1995 ; Kennett, 1999 ; and Koopman & Goldhaber, 1997.

¹⁶ Booth & McGonigle, 2003, *op.cit.*

¹⁷ Booth *et al.*, 2007, p.116 (our emphasis).

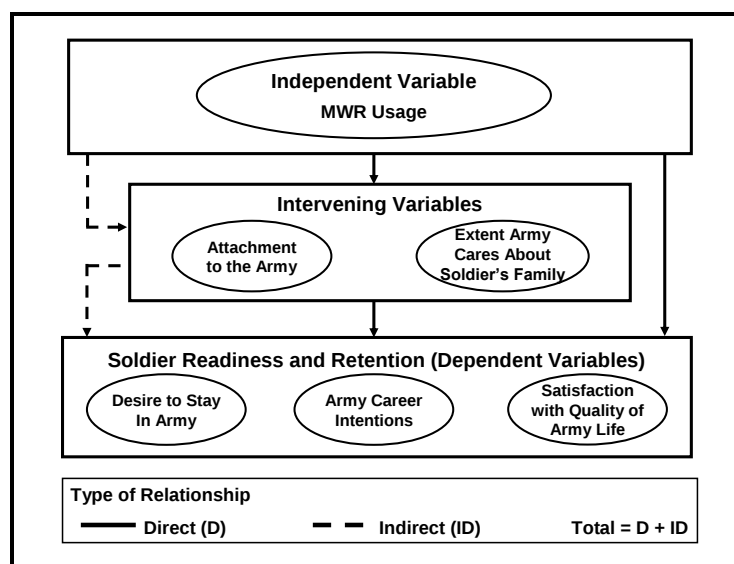
Prior to the Fafara and Westhuis pilot study of 2007, the general situation regarding research on MWR could be summarized as follows : “Despite the many new policies and programs the military has enacted over the last 20 years, very little in the way of evaluation of their effectiveness has been performed (or at least made publically available) despite calls for such work...”¹⁸ This same gap exists in the civilian literature as well. By systematically evaluating such interventions, military policy makers will be in a much better position to decide which programs to continue, which to modify, and which to eliminate.¹⁹

Method

MWR Usage Model

The framework for this study was based on a theoretical model adapted from the Caliber models described earlier (Booth & McGonigle, 2003, *op.cit.*). The adapted model (see Figure 1) postulates direct and indirect links between (1) MWR programme use, (2) intervening variables, and (3) readiness and retention outcomes. The model shows the relationship of MWR usage with three measures of soldier readiness and retention, both directly and indirectly via two intervening variables: (1) emotional attachment to the Army, and (2) perceptions of the extent to which the Army cares about the soldier’s family.

Figure 1: *Model of Direct and Indirect Relationships of MWR Usage and Intervening Variables with Three Measures of Readiness and Retention*



¹⁸ See, for example, Orthner & Bowen, 1990.

¹⁹ Adams, Jex & Cunningham, 2006, p.186. Two recent Army initiatives, *The Army Family Covenant* and *The Wounded Warrior Program*, illustrate the Army’s continued, serious commitment to MWR programmes and the growing need to evaluate their effectiveness. The former targets Army Families and represented a \$1.4 billion commitment in 2008 to improve quality of life for Army Families in areas such as Family programmes, physical and mental healthcare, housing, education, childcare, and employment opportunities for spouses. The latter assists and advocates for severely wounded, injured, and ill soldiers and their families, wherever they are located, for as long as it takes. It provides individualized support to this unique population of soldiers, who were injured or became ill during their service in the Global War on Terrorism.

Study Hypotheses

In accord with the pilot study findings and the proposed model supported by numerous empirical studies, the current study tested three hypotheses:

Hypothesis 1. Usage of MWR programmes has a direct positive effect on soldier retention and readiness outcomes and on the two intervening variables (i.e., soldier's emotional attachment to the Army and perception that the Army cares about the soldier's family); in turn, the two intervening variables have a direct effect on the outcomes.

Hypothesis 2. Usage of MWR programmes has a positive indirect effect on soldier retention and readiness outcomes via the intervening variables.

Hypothesis 3. Usage of MWR programmes has a positive combined total (direct + indirect) effect on soldier retention and readiness outcomes via the intervening variables.

Data Sources

The model and hypotheses described above were tested using the most current data from three Army-wide surveys of active duty soldiers and civilian spouses of active duty soldiers: (1) *2005 Sample Survey of Military Personnel* (SSMP), (2) *2004/2005 Survey of Army Families* (SAF V), and (3) *2006 Leisure Needs Survey* (LNS) of soldiers and soldier's spouses. The SSMP and LNS soldier respondents were non-deployed, active duty soldiers; the SAF V respondents were civilian spouses of non-deployed, active duty soldiers. Since the LNS civilian spouse survey did not include a deployment variable, the survey respondents included spouses of both deployed and non-deployed active duty soldiers.

In collecting information about use of MWR programmes, the SSMP and LNS asked active duty soldiers for their opinions. The SAF V and LNS asked spouses of active duty soldiers for their opinions, not the opinions of their soldier spouse. The response rate for the SSMP is estimated to be 50%; the exact rate is unknown due to the decentralized method of survey distribution. Response rates were approximately 23% for LNS soldiers, 43% for SAF V spouses, and 13% for LNS spouses. The resultant unweighted and weighted survey sample sizes are shown in Table 1 (next page). Across the four unweighted samples, there were 47,489 respondents, of which half (25,017) were active duty soldiers and half (22,472) were civilian spouses of active duty soldiers. Throughout the analyses, each database was weighted to the total population of approximately 400,000 non-deployed, active duty soldiers and approximately 180,000 spouses of non-deployed, active duty soldiers, with the weights based on the soldier's rank and location.

While the demographics varied somewhat by sample, across all samples approximately one-fifth (20%) were officers or spouses of officers and four-fifths (80%) were enlisted personnel or spouses of enlisted personnel. Three-fifths (61%) were male and two-fifths (39%) were female, with almost all (85%) of the soldiers being male and almost all (96–97%) of the spouses female. About three-fifths (63 %) of the respondents were White and about two-fifths

(38%) were minorities, including Blacks (17%), Hispanics (13%), or other racial groups (8%). Three-fourths (75%) were stationed in the Continental United States (CONUS) and one-fourth (25%) were stationed outside of the Continental United States (OCONUS); and approximately half (51%) lived on post and about half (49%) lived off-post. These demographic statistics are comparable to those reported for all active-duty soldiers as of Fiscal Year 2005.²⁰

Table 1: *Unweighted and Weighted Survey Sample Sizes*

	Active Duty Soldiers		Civilian Spouses of Active Duty Soldiers	
	SSMP*	LNS	SAF V	LNS
Unweighted n's	8,883	16,134	16,181	6,291
Weighted n's	401,959	420,777	180,404	179,785

* The SSMP does not include soldiers currently deployed to war theaters, recently returned from a war theater, or preparing to be deployed soon to a war theater. It also excludes all Private First Class and those Private Second Class soldiers in Europe and Korea.

Measures

The MWR independent variables and the readiness and retention dependent/ outcome variables were developed separately using data from the three surveys. In addition, two intervening variables were developed: (1) “emotional attachment to the Army” (available only for SSMP soldiers) and (2) the extent providing MWR programmes and services demonstrates that the “Army cares” about the soldier and his or her family (available only for LNS soldiers). To ensure comparable data across the *three surveys*, all independent, dependent, and intervening variables were derived from questions that were identical or almost identical across the surveys.

Independent Variables

A MWR Use measure was developed as the major independent variable based on data describing the number of MWR programmes/services (hereafter referred to as MWR programmes) the respondent used. The SSMP and SAF V listed 23 MWR programmes available at most Army installations and asked respondents to select those they had used within the last 2 years. The LNS listed 16 MWR programmes comparable to those listed in the SSMP and SAF V and asked respondents to indicate how often on average they had used these in the last 12 months. The LNS response categories included the following: *Did not use*, *Used less than once per month*, *Used 1 – 3 times per month*, and *Used 4 or more times per month*. To make the LNS data comparable to the SSMP and SAF V data, the LNS responses were

²⁰ See details at: <http://www.armyg1.army.mil/hr/docs/demographics/FY05%20Army%20Profile.pdf>. (accessed on April 7, 2009).

recoded into dichotomous “Used/ Did Not Use” responses. Table 2 (below) lists the MWR programmes included in the MWR Use independent variable for the four samples.²¹

A MWR Use score was derived, ranging from zero to the maximum number of MWR programmes used. For the SSMP and SAF V, the maximum MWR Use score was 23; for the LNS, the maximum was 16. Reliabilities (Cronbach’s alpha based on standardized items) for the MWR Use score were .89 for SSMP soldiers, .84 for the SAF V spouses, and slightly lower for LNS soldiers (.79) and LNS spouses (.74).

Table 2: *MWR Programmes Included in the MWR Use Independent Variable by Sample*

Types of MWR Programmes	SSMP Soldiers & SAF V Spouses (23 MWR Items)	LNS Soldiers and Spouses (16 MWR Items)
Child & Youth (for those with dependent children)	Child Development Services, School Age Services, Youth Services, and Child & Youth Services	Child Development Services, School Age Services, Youth Services
Recreation, Tickets, & Library	Travel Agency Services, Library & Information Services, Marine Services, Arts & Crafts, Outdoor Recreation, Automotive Shop, Community Recreation Centers, Music & Theater Programmes, Information/Tickets/ Registration, Recreation Equipment Rental	Travel Agency Services, Library & Information Services, Marine Services, Arts & Crafts, Outdoor Recreation, Automotive Shop, Community Recreation Centers
Sports & Fitness	Bowling, Swimming, Golf , Gymnasium/Playing Courts/Fields, Fitness Facilities	Bowling, Swimming, Golf, Gymnasium/Fitness Facilities/ Tennis Courts, Athletic Fields, Multi-purpose Sports
Food/Beverage Operations	Catering/Banquet Services, Club Entertainment Services, Full Club Dining & Beverage Services, Club Beverage Lounge	

Dependent Variables

Four key Army retention and readiness measures were identified as dependent variables: (1) “desire to stay in the Army”, (2) “Army career intentions”, (3) “satisfaction with quality of Army life”, and (4) “unit teamwork/*esprit de Corps*” (only available for the SSMP). These survey items have been included and tracked in Army-wide surveys for over a decade as major indicators of soldier retention and readiness.

The “desire to stay in the Army” dependent variable was based on a single item where responses were coded as “2” meaning that the soldier or spouse desired for the soldier to *STAY*

²¹ Trend data on active duty soldiers’ and their civilian spouses’ use of each MWR programme is available on the MWR Research page of the Family and Morale, Welfare and Recreation Command’s website : www.armymwr.com (accessed April 3, 2009).

in the Army until retirement or as “1” meaning the soldier or spouse desired for the soldier to LEAVE the Army before retirement.

The “Army career intentions” variable was based on a single three- or five-point Likert item which asked about the soldier’s current active duty Army career intentions/plans, or spouse’s desire for soldier spouse’s Army career intentions/plans. Responses were collapsed into a three-point scale ranging from “3” – *Stay until retirement/make it a career* to “2” – *Stay beyond obligation but not until retirement/Undecided* to “1” – *Leave after obligation/ Not make it a career*.

“Satisfaction with quality of Army life” was based on a single four- or five-point item which asked, *How satisfied are you with the Army as a way of life?* or *How satisfied (or dissatisfied) are you with the overall quality of Army life?* Responses were collapsed into a three-point scale ranging from “3”- *Very satisfied/ Satisfied* to “2” – *Neither satisfied nor dissatisfied* to “1” – *Dissatisfied/Very dissatisfied*.

The “unit teamwork/esprit de corps” dependent variable, only available for the SSMP soldiers, was based on a single item which asked, *Based on the units you have worked with, how does your current unit compare in terms of “teamwork/esprit de corps”?* Responses were coded into a five-point scale ranging from “5” – *Best*, to “3” – *About the Same*, to “1” – *Worst*.

Intervening Variables

Two intervening variables between the MWR Use independent variable and the readiness and retention dependent variables were developed. The first intervening variable, “emotional attachment to the Army” (available only for the SSMP sample), was derived from four questions, which asked respondents to indicate how strongly they agreed or disagreed with the following statements: (1) *I feel “emotionally attached” to the military*, (2) *I feel like “part of the family” in the military*, (3) *The military has a great deal of personal meaning for me*, and (4) *I feel a strong sense of belonging to the military*. The response scale for each question ranged from a high of “5” – *strongly agree* – to a low of “1” – *strongly disagree*. A five-point Likert-type scale score was derived by summing responses to the four items. The reliability (Cronbach’s alpha based on standardized items) of the SSMP soldier “emotional attachment to the Army” scale score, hereafter referred to as “emotional attachment”, was .89.

The second intervening variable was derived for LNS soldiers from a single question, *To what extent does providing MWR programmes and services demonstrate that the Army cares about you and your family?* Responses ranged from a high of “5” – *a great extent* to a low of “1” – *no extent*. This variable is referred to hereafter as “extent” or “extent the Army cares.”

Data Analysis

A step-wise process was used to analyze the data from each survey sample.

Step 1: Correlation Analysis

In Step 1, a correlation analysis was conducted between the MWR Use score and four retention and readiness dependent variables, the “emotional attachment” intervening variable for SSMP soldiers, and the “extent the Army cares” variable for LNS soldiers. The purpose of this analysis was to determine if there was a statistically significant relationship between the variables and, if so, the strength of the correlation. Based on this analysis, only dependent and intervening variables with significant relationships ($p < .01$) with the MWR Use independent variable were utilized in the next step of the analysis.

Step 2: Strength of the Relationships

In Step 2, the strength or effect size (ES) of the association between study variables was assessed for the MWR independent variable and those outcome and intervening variables with which MWR use was significantly related. ES is a name given to a family of standardized indices that measure the magnitude of the relationship between variables. Unlike significance tests, ES indices are independent of sample size and the statistic used. ES indicates the strength of the relationship (i.e., the larger the ES, the stronger the relationship; and the larger the ES, the higher the correlation between the independent, intervening, and dependent variables).

Calculation of ESs

This analysis utilized processes developed by J. Cohen (1988) to calculate the direct ES and processes similar to path analysis procedures to calculate the direct, indirect, and total ES. First, three direct ES were calculated:

- (1) Direct ES of MWR use on the outcome variables;
- (2) Direct ES of MWR use on the intervening variables; and
- (3) Direct ES of intervening variables on the outcome variables.

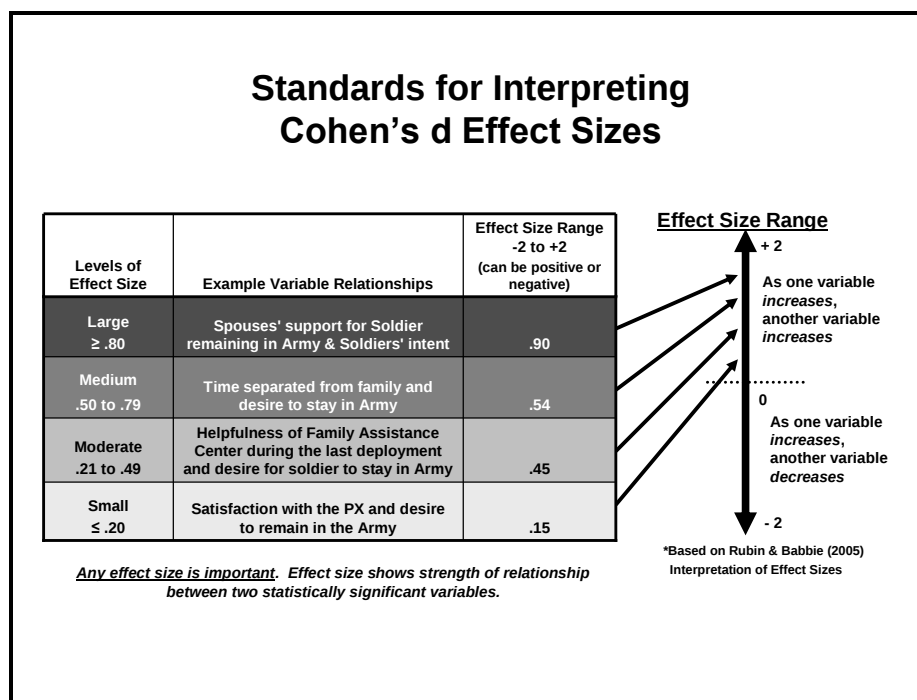
Next, the indirect ES of MWR via the intervening variables was calculated by multiplying the direct ES of MWR usage by the direct ES of the intervening variables for each of the outcome variables [Total Indirect ES for MWR usage = (Direct ES MWR Use on Intervening Variable) $\times$ (Direct ES Intervening Variable on Outcome Variable)]. This calculation of the total indirect ES is similar to that used in path analysis where the indirect effect of variables in a path to an endogenous variable is calculated by multiplying the standardized regression coefficients of the exogenous variables times each other to determine their combined indirect effects on the endogenous variable.²² Finally, as in path analysis procedures, the total ES of MWR usage on each outcome variable was calculated by adding the direct and indirect ES for the various paths to the outcome variable (Total ES = Direct ES + Indirect ES).

²² Mertler & Vannatta, 2005, pp.200-201.

Interpretation of ES

A modified version of the Cohen standard for strong, medium, and small relationships was used for interpreting ES. This version suggests that ES of greater than or equal to .80 can be considered a strong or large relationship; ES of .50 to .79 are suggestive of a medium relationship; ES of .21 to .49 are suggestive of a moderate relationship; and ES below .21 are weak.²³ See these standards and Army examples in Figure 2:

Figure 2: *Standards for Interpreting Cohen's d ES*



Results

The results of the analyses are reported as these relate to testing the overall model and hypotheses across four databases, i.e., whether the study was able to establish direct relationships between MWR usage, intervening variables, and key outcome variables; and indirect and total relationships of MWR usage and outcomes via the two intervening variables.

Direct Relationships and ES of MWR Usage and Intervening Variables on Outcomes

Hypothesis 1. Usage of MWR programmes has a direct positive effect on soldier retention and readiness outcomes and on the two intervening variables (i.e., soldier's emotional attachment to the Army and perception that the Army cares about the soldier's family); in turn, the two intervening variables have a direct effect on the outcomes.

²³ See Rubin & Babbie, 2005, pp.611-613.

Direct ES of MWR Usage on Outcomes

Findings concerning the significance and strength of the direct relationships between MWR usage and the outcomes are shown in Table 3. It summarizes the correlations and the ES between MWR usage and the four outcome variables for each sample. Note that this study was unable to identify comparable variables in the SAF and LNS databases for the outcome variable “unit teamwork/*esprit de corps*.” Also, there was no comparable variable for “satisfaction with quality of Army life” in the LNS spouse dataset.

As shown in Table 3, statistically significant relationships (i.e., correlations) exist between MWR usage and the applicable outcome variables for the four datasets. These correlations, which ranged from .07 to .17 ($p < .01$), replicate the pilot study, with any differences in the correlations between the two studies likely being due to refinements to the SSMP variables in the current study. The correlations indicate that, as use of MWR services increases, the four outcome variables increase in a positive manner.

Table 3: Correlations and ES between MWR Usage and Outcome Variables

Outcome Variables	Correlations and ES of MWR Usage with Outcome Variables*							
	SSMP Soldiers		SAF V Spouses		LNS Soldiers		LNS Spouses	
	Corr.	ES	Corr.	ES	Corr.	ES	Corr.	ES
Desire to Stay in the Army	.11	.21	.12	.25	.15	.31	.16	.36
Army Career Intentions	.13	.22	.12	.24	.15	.30	.17	.35
Satisfaction with Quality of Army Life	.09	.18	.14	.28	.12	.25	N/A	N/A
Unit Teamwork/ <i>Esprit de Corps</i>	.07	.13	N/A**	N/A	N/A	N/A	N/A	N/A

*All correlations are significant at $p < .01$

** N/A = Not applicable.

The ES analysis was conducted for all significant relationships (correlations) between MWR usage and outcomes. As shown above, for SSMP data the ES ranged from .13 to .22 and, based on the Cohen standard, would generally be considered of weak or moderate strength. ES for the outcome variables available in the SAF V spouse and the LNS soldier and spouse datasets ranged from .24 to .36 and are of moderate strength.

Direct ES of MWR Usage on Intervening Variables and of Intervening Variables on the Outcomes

As noted above, one purpose of this study was to determine if it was possible to replicate findings for the pilot study’s intervening variable, “emotional attachment”, using SSMP soldier data, and to examine another intervening variable, “extent Army cares”, using LNS soldier data. Table 4 (next page) shows the statistically significant correlations of soldier usage of MWR with these two intervening variables and correlations of the two intervening variables with the outcome measures. As shown, soldier MWR usage is significantly

correlated with the two intervening variables, and these intervening variables are significantly correlated with the outcome variables. These findings confirm those found in the pilot study for SSMP soldier's "emotional attachment" and show similar results for the "extent the Army cares" variable for LNS soldiers

Table 4: *Correlations between MWR Usage, Intervening Variables, and Key Outcome Variables*

MWR Usage and Outcome Variables	Correlations *	
	SSMP Soldiers Emotional Attachment to the Army	LNS Soldiers Extent Army Cares
Total MWR Services Used	.18	.19
Desire to Stay in the Army	.40	.29
Army Career Intentions	.46	.28
Satisfaction with Quality of Army Life	.50	.38
Unit Teamwork/ <i>Esprit de Corps</i>	.28	N/A**

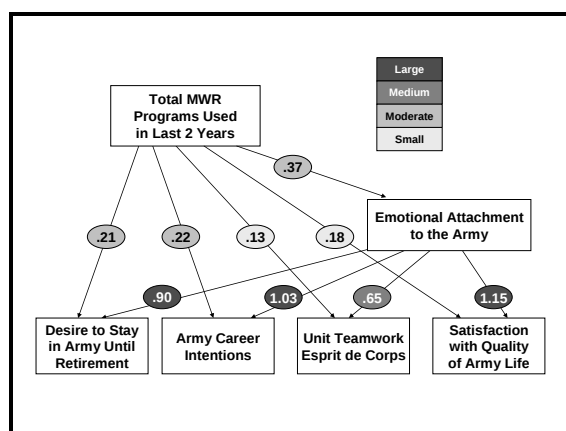
*All correlations are significant at $p < .01$

** N/A = Not applicable

Emotional Attachment to the Army

Using SSMP data, Figure 3 below summarizes the direct ES of soldier usage of MWR and "emotional attachment" on the outcome variables. It also shows the direct ES of MWR usage on "emotional attachment". These ES were computed based on correlations in Table 4 above. The direct ES of MWR usage on outcome variables ranged from .13 to .22, indicating that MWR usage has a weak to moderate association with the outcome variables. The direct ES of MWR usage on "emotional attachment" was .37, which is moderately strong. The direct ES for "emotional attachment" on the outcome variables ranged from .65 to 1.15, which indicates that these relationships are strong to very strong.

Figure 3: *Direct ESs Indicating the Strength of Relationships Between Soldier MWR Usage, "Emotional Attachment", and Outcome Variables (SSMP Data Only).*

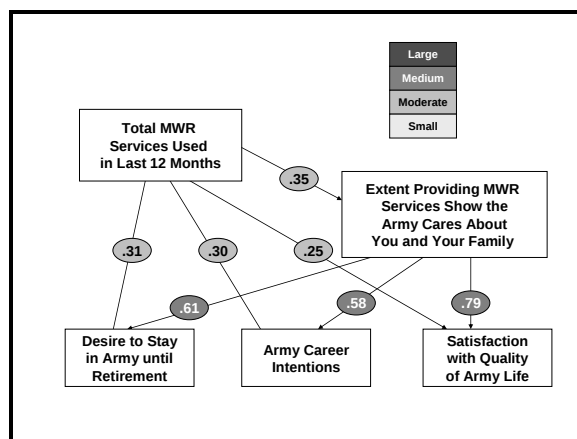


Extent Army Cares About Soldiers and Their Families

Using LNS soldier data, Figure 4 below summarizes the direct ES of soldier usage of MWR and the intervening variable, “extent Army cares”, on three outcome variables. The statistical procedures in this analysis were similar to those used with the SSMP ES analysis. As shown, the direct ES for MWR usage on outcome variables ranged from .25 to .31, which indicates that MWR usage has a moderate association with outcome variables. The direct ES of MWR usage on the “extent Army cares” was .35, which is of moderate strength. The direct ES of the “extent Army cares” variable on outcome variables ranged from .58 to .79, which indicates that these relationships are medium to strong.

These findings support the hypothesis that MWR usage has a direct, positive effect on the outcomes and on the two intervening variables (i.e., soldier’s emotional attachment and perception that the Army cares about the soldier’s family); and the intervening variables have a positive, direct effect on the outcomes.

Figure 4: *Direct ESs Indicating the Strength of Relationships Between Soldier MWR Usage, “Extent Army Cares”, and the Outcome Variables (LNS Data Only).*



Indirect ES of MWR Usage on Outcomes via Intervening Variables

Hypothesis 2. Usage of MWR programmes has a positive indirect effect on soldier retention and readiness outcomes via the intervening variables.

Findings concerning the significance and strength of the indirect relationships between MWR usage and the outcomes via the intervening variables were based on the assumption that, if MWR usage can have a positive, significant association with the intervening variables, it will then indirectly have a positive association with the outcome variables via the intervening variables. As shown in Table 5 (next page), the strength (ES) of the relationship between soldier MWR usage and “emotional attachment” was .37. The total indirect ES for the four indirect paths for MWR usage to the outcome variables via “emotional attachment” ranged from .24 to .38. These total indirect ES, calculated by multiplying the direct ES of MWR usage on “emotional attachment” times the direct ES of “emotional attachment” on the

outcome variables, ranged from weak for “unit teamwork/*esprit de corps*” to moderate for “soldier’s desire to stay in the Army until retirement”, “Army career intentions”, and “satisfaction with quality of Army life.” Table 5 also shows that the strength (ES) of the relationship between soldier MWR usage and “extent Army cares” was .35. The total indirect ES for the four indirect paths for MWR usage to outcome variables via “extent the Army cares” ranged from weak (.20) for “Army career intentions” to moderate (.21 and .28) for the other two outcome variables.

Table 5: *Total Indirect ES of Soldiers’ MWR Use on Outcomes via Intervening Variables*

<i>Samples and Intervening Variables</i>	<i>Direct ES (MWR Use on Int. Var.)</i>		<i>Direct ES (Int. Var. on Outcomes)</i>		<i>Total Indirect ES (MWR Use on Outcomes Via Int. Var.)*</i>
<u>SSMP Soldiers</u>					
<u>Intervening Variable = Emotional Attachment to the Army</u>					
Desire to Stay in Army	.37	X	.90	=	.33
Army Career Intentions	.37	X	1.03	=	.38
Satisfaction with Quality of Army Life	.37	X	1.15	=	.43
Unit Teamwork/ <i>Esprit de Corps</i>	.37	X	.65	=	.24
<u>LNS Soldiers</u>					
<u>Intervening Variable = Extent Army Cares</u>					
Desire to Stay in Army	.35	X	.61	=	.21
Army Career Intentions	.35	X	.58	=	.20
Satisfaction with Quality of Army Life	.35	X	.79	=	.28
Unit Teamwork/ <i>Esprit de Corps</i>	N/A	X	N/A	=	N/A

*Total Indirect ES of MWR Use on the outcomes is the product of the direct ES of MWR use on the intervening variable and the direct ES of the intervening variable on the outcomes.

These findings support the hypothesis that MWR usage has a positive, indirect effect on outcomes via the two intervening variables.

Total ES of MWR Usage on Outcomes via Intervening Variables

Hypothesis 3. Usage of MWR programmes has a positive combined total (direct + indirect) effect on soldier retention and readiness outcomes via the intervening variables.

As in path analysis procedures, the total ES of SSMP soldiers’ MWR usage on each outcome variable was calculated by adding the direct ES of MWR usage on the outcome variable and the total indirect ES of the intervening variable for the path from MWR usage to the outcome variable (see Table 6). For SSMP soldiers, the total ES ranged from a low of .37 for “unit teamwork/*esprit de corps*”, which is of moderate strength, to a high of .61 for “satisfaction with quality of Army life”, which is of medium strength. For LNS soldiers, the

total ES of MWR usage in the last 12 months on outcome variables via the “extent Army cares” variable ranged from .50 to .53, which are of medium strength. This analysis replicates and extends the pilot study findings to include a second intervening variable, indicating that the total ES are not only statistically significant but are also practically meaningful.

Table 6: Total ES of Soldiers' MWR Use on Outcomes via Intervening Variables

<i>Samples and Intervening Variables</i>	<i>Direct ES (MWR Use on Outcomes)</i>		<i>Total Indirect ES (MWR Usage on Outcomes Via Int. Var.)</i>		<i>Total ES (Direct ES + Indirect ES.)</i>
<u>SSMP Soldiers:</u>					
<u>Intervening Variable = Emotional Attachment to the Army</u>					
Desire to Stay in Army	.21	+	.33	=	.54
Army Career Intentions	.22	+	.38	=	.60
Satisfaction with Quality of Army	.18	+	.43	=	.61
Unit Teamwork/ <i>Esprit de Corps</i>	.13	+	.24	=	.37
<u>LNS Soldiers:</u>					
<u>Intervening Variable = Extent Army Cares</u>					
Desire to Stay in Army	.31	+	.21	=	.52
Army Career Intentions	.30	+	.20	=	.50
Satisfaction with Quality of Army	.25	+	.28	=	.53
Unit Teamwork/ <i>Esprit de Corps</i>	N/A	+	N/A	=	N/A

These findings support the hypothesis that MWR usage has a total (direct + indirect), positive effect on outcomes via the two intervening variables.

Summary of Findings

By extending the analysis to four databases, i.e., SSMP and LNS (soldier) and SAF V and LNS (spouse) databases, the study findings provide strong support for the hypothesis that MWR usage has a positive, direct ES on soldier retention and readiness across the Army as a whole. Results indicate that increased use of MWR programmes by active duty soldiers and by their spouses is associated with a parallel increase in their “desire for the soldier to stay in the Army”, “Army career intentions”, and “satisfaction with quality of Army life”.

The analysis using SSMP soldier data replicates findings of the 2007 Fafara and Westhuis pilot study and supports the study hypotheses. The SSMP soldier analysis indicated that soldiers' increased use of MWR programmes is associated with a parallel increase in soldiers' “desire to stay in the Army”, “Army career intentions”, “satisfaction with quality of Army life”, and “unit team work/*esprit de corps*”. The total ES of this increase in MWR usage on outcome variables results from both a direct and indirect ES via association of MWR usage with SSMP soldiers' “emotional attachment”.

The LNS soldier analysis supports the three study hypotheses using a second intervening variable, soldier's perceptions of "extent the Army cares" about soldiers and their families. It found that as the soldier's MWR usage increases there is a positive, direct and indirect (via the intervening variable "extent the Army cares") association with an increase in the soldier's "desire to stay in the Army", "Army career intentions", and "satisfaction with quality of Army life". Also, the total ES of this increase in MWR usage on the outcome variables results from both a direct and indirect ES via its association with increased perception that the "Army cares" about soldiers and their families. Additionally, findings from the SSMP, SAF V, and LNS analyses indicate that these associations of MWR use, the intervening variables, and the outcomes are not only statistically significant but are also notable in terms of their ES.

Conclusion

The current study replicated the Fafara and Westhuis (2007) SSMP pilot study finding of a strong, empirical link between active duty soldiers' use of MWR programmes and soldier retention. Extending this analysis to three additional databases, the study found similar, positive relationships of use of MWR programmes to key outcomes for active duty soldiers (as measured by the LNS) as well as for spouses of active duty soldiers (as measured by SAF V and LNS). It also replicated the pilot study findings that use of MWR programmes has a direct association with the soldiers' "emotional attachment to the Army" and that "emotional attachment to the Army", in turn, has an extremely powerful association with soldier retention and readiness. A parallel analysis of the LNS soldier data found that soldiers' use of MWR programmes has a direct and positive association with their ratings of the "extent to which providing MWR services shows the Army cares about the soldier and their families;" the "extent the Army cares" variable, in turn, has a large, direct and positive association with the outcome variables.

These results validated portions of empirically untested models in the literature describing the links of MWR to readiness and retention²⁴ and support findings of previous studies, in particular those showing the strong relationship between Perceived Organizational Support (POS), commitment to the organization, and desire to remain with the employer.²⁵ This was evidenced by the strong direct and indirect relationships and ES between MWR use and the two intervening variables – "emotional attachment to the Army" and the belief that MWR services indicate that "the Army cares" about soldiers and their families. These intervening variables, in turn, have a strong, direct relationship and ES on the retention and readiness outcomes. These findings allow the Army to go beyond anecdotal evidence and state with confidence that MWR contributes to mission essential goals such as soldier retention, readiness, and commitment to the Army. As such, the findings have programme, policy, and

²⁴ See notes 9 and 10.

²⁵ See note 15.

resource implications for the Army. For example, they suggest that soldiers and their spouses will benefit from increased awareness, accessibility, and use of MWR programmes because of the strong links between soldier and spouse use of MWR, “emotional attachment”, “extent Army cares”, and retention and readiness.

When considering the above conclusions, it is important to note a few limitations of this study. First, since the study is descriptive and correlational, one can only suggest that there are correlational, not causal, relationships between MWR use and the intervening and outcome variables. Second, the MWR use items were not identical across the surveys. The SSMP and SAF V asked about soldiers’ and spouses’ use of 23 MWR programmes within the last 24 months, whereas the LNS asked about their use of 16 MWR programmes within the last year. Third, the intervening variables were not available across all surveys: the LNS and SAFV did not include “emotional attachment” and the SSMP and SAFV did not include the “extent Army cares” items. Fourth, although the outcome variables have been employed and tracked via Army-wide surveys for over a decade and been useful to Army management in describing aspects related to retention and readiness, these measures are each based on a single item. Finally, methods for selecting the survey samples and distributing the surveys varied. For example, the SSMP samples were selected in a decentralized fashion and limited to soldiers in CONUS, and the SAFV samples were selected centrally and included spouses in CONUS and OCONUS. While each of these limitations is important, the fact that the findings are consistent across soldiers and spouses in three different Army-wide surveys, four separate databases, and multiple measures of readiness and retention increases confidence that the relationships reported are significant and meaningful. The findings strongly suggest that soldiers and their spouses will benefit from continued provision, and increased awareness, accessibility, and use, of MWR programmes. Changes or alterations to existing programmes, especially any radical changes, should be implemented carefully and, if possible, be guided by data.

The findings also warrant additional study and refinement by Army staff. The Army should: 1) systematically monitor MWR usage, its relationship with intermediate variables (e.g., “emotional attachment” and “extent the Army cares”), and its impact on key outcomes; 2) monitor soldier and spouse populations as a whole and any subgroups who tend to underutilize MWR programmes (e.g., junior enlisted personnel and junior officers and their spouses); 3) obtain a better understanding of the relationship among the items on which the dependent, intervening, and outcome variables are based; the interplay between MWR use and the intervening variables; and the association of these and other intervening variables with desired Army outcomes; 4) determine the extent to which these findings apply to Army National Guard and Army Reserves soldiers and families; 5) consider studying variations in use of MWR by individual programmes or categories of programmes²⁶ and its relationship

²⁶ Preliminary results for the programmes listed in Table 2 can be found in Fafara, Marshall-Mies & Westhuis, 2009, pp.28-33.

with desired Army outcomes during different stages of the soldier's and Army family's life cycles, taking into account variations in OPTEMPO and deployment frequency (Russo, 1999, p.92); 6) determine if there is both a linear and curvilinear relation between MWR usage and the outcome variables studied – the impact of using MWR programmes might reach a maximum number (e.g., .9) and then have no additional impact on retention and other key variables ; and 7) study MWR usage within a holistic perspective.²⁷

In summary, this study established that MWR contributes to the perception that the Army cares about soldiers and their families and contributes to mission-essential goals such as soldier retention, readiness, and commitment. At a time when the President of the United States has made “*the care and support of military families a top national security policy priority*” and is developing a Government-wide approach to strengthen military family support, it behooves researchers, educators, and policy-makers to further explore and refine these findings so as to provide our soldiers the most effective support programmes and policies possible.²⁸

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²⁷ The community capacity model identifies a set of protective factors for military families – (1) collaboration among formal support programmes, such as MWR; (2) formal agency partnership with unit leadership ; and (3) formal agency partnership with informal community networks – and provides a conceptual framework for such a perspective. The synergies obtained as a result of collaborations among, and partnerships between, programmes, leadership and informal support result in direct, positive impacts on community outcomes and indirect impacts mediated through the development of enhanced community capacity. See Spera, 2009, p.288; Huebner, Mancini, Bowen & Orthner, 2009, pp.216-228; Mancini, Martin & Bowen, 2003, pp.319-31.

²⁸ Presidential Studies Directive *Strengthening Our Military Families: Meeting America's Commitment*, January 2011, p.1.

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