

Building a Personnel Support Agenda

*Goals, Analysis Framework,
and Data Requirements*

Richard Buddin

National Defense Research Institute



19981026 076

The research described in this report was sponsored by the Office of the Secretary of Defense (OSD). The research was conducted in RAND's National Defense Research Institute, a federally funded research and development center supported by the OSD, the Joint Staff, the unified commands, and the defense agencies under Contract DASW01-95-C-0059.

Library of Congress Cataloging-in-Publication Data

Buddin, Richard J., 1951- .
Building a personnel support agenda : goals, analysis framework,
and data requirements / Richard Buddin.
p. cm.
"Prepared for the Office of the Secretary of Defense by RAND's
National Defense Research Institute."
"MR-916-OSD."
Includes bibliographical references (p.).
ISBN 0-8330-2639-9
1. United States—Armed Forces—Personnel management.
2. United States—Armed Forces—Operational readiness.
3. United States—Armed Forces—Military life. 4. Quality of
life—United States. I. Title.
UB323.B773 1998
355.6 '1 '0973—dc21 98-27533
CIP

RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions or policies of its research sponsors.

© Copyright 1998 RAND

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 1998 by RAND

1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1333 H St., N.W., Washington, D.C. 20005-4707

RAND URL: <http://www.rand.org/>

To order RAND documents or to obtain additional information,

contact Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Internet: order@rand.org

Building a Personnel Support Agenda

*Goals, Analysis Framework,
and Data Requirements*

DTIC QUALITY INSPECTED 2

Richard Buddin

MR-916-DSD

*Prepared for the
Office of the Secretary of Defense*

National Defense Research Institute

RAND

Approved for public release; distribution unlimited

PREFACE

A widespread concern of military personnel planners is to ensure that quality of life problems for military personnel do not adversely affect military readiness through personnel dissatisfaction and ultimately through reduced enlistment and retention rates. A broad range of personnel support programs is designed to offset the stresses of military life for service members and their families. Major changes in the military mission and relentless budget pressure have forced managers to reassess what programs are needed. Changing demographics of the force are also changing the mix of services that members use. This report develops a methodology for rethinking and reevaluating the military's support agenda. It should be of interest to anyone involved with military personnel issues or force readiness.

This report is part of a longer-term study of quality-of-life issues in the military. The study is assessing the mix and scope of military support programs and will recommend policies to enhance the effectiveness of support programs.

The work was sponsored by the Deputy Assistant Secretary of Defense for Personnel Support, Families, and Education. The research was conducted in the Forces and Resources Policy Center, which is part of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies.

CONTENTS

Preface	iii
Figures	ix
Tables	xi
Summary	xiii
Acknowledgments	xxiii
Acronyms	xxv
Chapter One	
INTRODUCTION	1
Scope and Rationale for Personnel Support	1
Changing Military Environment	4
Force Restructuring and Base Closures	4
Mission Changes	4
Changing Demographics	4
Housing Policy	5
Purpose and Approach of This Study	5
Chapter Two	
GOALS OF THE PERSONNEL SUPPORT PROGRAM	7
Defining Institutional Goals	8
Readiness or Business Objectives	8
Stewardship Objectives	10
Linking Institutional Goals to Operational Realities	11
Implementing Goals Across Bases: Equity Versus Flexibility	13

Profitability is Not a Goal of the System	15
Recommendations for Clarifying Goals	19
Chapter Three	
ANALYSIS FRAMEWORK	21
Nonwage Benefit Approach	22
Tax Advantages	22
Economies of Scale	23
Minimizing Turnover Costs	26
Screening	27
Advantages and Disadvantages of Nonwage Benefit Approach	28
Compensating Wage Differentials Approach	28
Advantages and Disadvantages of the Compensating Wage Differential Approach	29
Individual Well-Being Approach	30
Advantages and Disadvantages of the Well-Being Approach	32
Community Environment Approach	33
Retention and Program Use Approach	36
Advantages and Disadvantages of the Retention and Program Use Approach	39
Blending the Research Approaches Together	39
Chapter Four	
DATA REQUIREMENTS	43
Member Well-Being	44
Program Use	48
Community and Family Support Programs	50
MWR Programs	64
Developing Better Measures of Program Use	75
Local Program Spending and Workloads	76
Unified Base Accounting System	76
Program Availability and Workloads	78
Local Conditions	78
Problems with Collecting Local Base Information	79
Chapter Five	
CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH	81

Appendix	
COX REGRESSION RESULTS FOR PROGRAM USE	83
REFERENCES	109

FIGURES

3.1. Hypothetical Example of the Relationship Between Use of a Personnel Support Program and Reenlistment.	37
4.1. Overall Satisfaction with Military Life for Officers and Enlisted Personnel	44

TABLES

1.1. Personnel Support Programs Available for Military Members and Their Families	2
3.1. Age Distributions of Active-Duty Military and Civilian Work Forces	26
4.1. Regression Results for Factors Affecting Overall Satisfaction with the Military	46
4.2. Relationships Between Overall Satisfaction and Satisfaction with Particular Aspects of Military Life . . .	47
4.3. Community and Family Support Programs: Usage Rates and User Satisfaction	51
4.4. Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 1 . . .	54
4.5. Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 2 . . .	56
4.6. Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 3 . . .	58
4.7. Morale, Welfare, and Recreation Programs: Usage Rates and Importance	64
4.8. Regression Results of Factors Affecting the Use of Morale, Welfare and Recreation Programs: Part 1 . . .	66
4.9. Regression Results of Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 2 . . .	68
4.10. Regression Results of Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 3 . . .	70
A.1. Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 1	85

A.2.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 2	87
A.3.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 3	89
A.4.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 4	91
A.5.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 5	93
A.6.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Community and Family Support Programs: Part 6	95
A.7.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 1	97
A.8.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 2	99
A.9.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 3	101
A.10.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 4	103
A.11.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 5	105
A.12.	Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 6	107

SUMMARY

BACKGROUND

A recurring theme in recent accounts of the performance of the U.S. military is that high-quality people are crucial to an effective fighting force. Thus, the Department of Defense (DoD) devotes considerable resources to attracting and retaining its service members. A key component of these efforts is the panoply of DoD personnel support programs, which are both extensive and expensive.

The programs fall into two general categories—community and family support programs and morale, welfare and recreation (MWR) programs—and they include such amenities as fitness clubs, craft shops, personal financial management counseling, and parent education. Collectively, these programs cost several billion dollars each year.

The rationale for them is twofold. First, the military demands more of its members than civilian firms do. Its members deploy on short notice, frequently on dangerous missions. Families are left behind and must fend for themselves. Overseas assignments uproot families from local support systems and place them in foreign countries, only to return them a few years later to yet another location. Second, many military installations are in isolated areas, relatively far from the support and amenities normally found in civilian communities.

But the armed forces are undergoing significant change. Budgets and force structures have been slashed. Many of the forces previously based overseas have returned to the United States. Missions

have also changed, and the Services find themselves dispatching units on humanitarian and peacekeeping missions at an increased rate. As the demographic composition of the United States changes, so too does that of the military; for example, spouses of military members are more likely now to work, especially in the civilian sector. Furthermore, DoD is reviewing its housing policy, considering cutting costs by encouraging service members to live off-post.

PURPOSE

These changes do not necessarily obviate the need for personnel support programs. However, in light of such changes and the relentless pressure to reduce costs, it makes sense to ask whether the current set of programs is the right one to serve the needs of DoD and the military members and whether the programs are properly funded. Answering these questions is quite difficult. DoD needs better mechanisms, tools, and information to define its personnel support agenda.

This study develops a methodological structure to help answer the questions. It does so by evaluating the goals and funding mechanisms of the current set of programs. It also proposes a set of methodological tools that collectively enable analysts to assess support personnel programs. Finally, it analyzes the available data and makes recommendations.

GOALS AND FUNDING MECHANISMS

Much of the difficulty in building the personnel support system revolves around defining goals at the policy and administrative levels. DoD has articulated a broad set of policy goals that are too general to determine what standards should be applied or what programs should be instituted.

Ultimately, DoD would like to show that support programs cost-effectively sustain readiness. That goal is currently unattainable because the problem of measuring readiness itself remains unsolved. Other outcomes associated with readiness, such as retention, are easily measured; the problem then becomes one of charting the relationship between the program and the outcome.

Personnel support programs are relatively inexpensive. For example, the Army spent less than \$700 per soldier on family and MWR programs in FY96, or less than 3 percent of the basic military compensation for the most junior enlisted personnel. A 10 percent change would only amount to \$70 annually per soldier, and it would be difficult to assess how such a small change affected retention.

Furthermore, readiness is not the sole goal. Many programs have what might be called a stewardship objective. Some programs foster life skills (e.g., effective parenting, budget management), promote continuing education, or prepare members for civilian employment. These programs focus on general improvement of the quality of life of the military member rather than on directly enhancing readiness.

More intermediate goals are needed. If, for example, family separations reduce retention among married service members, a program that focuses on easing difficulties caused by separation could be established. Effectiveness measurements would still need objective standards, and establishing these could pose some problems. Who is the appropriate comparison group? Families of members who deploy could be compared with the families of those who do not.

The issue of objective and subjective well-being intertwines with the issue of goals. One is observable and verifiable; the other is an individual self-evaluation. Typically, they do not correlate well. Programs that improve objective well-being might not raise subjective well-being, and therefore would not have a positive effect on retention. Clearly, programs should attempt to enhance both.

Funding for these programs provides additional issues. Appropriated funds pay for a portion of the programs. But much of the MWR program agenda is funded by its own activities with what are called nonappropriated funds. Probably the best-known example of these programs is the military exchange program. A number of factors have contributed to falling revenues from these programs. For example, proximity to large discounters such as Wal-Mart has forced the exchanges to hold down prices. Service policies discouraging drinking have reduced the revenue of military clubs. The military has responded by cutting costs and seeking other programs to raise revenues. Profit-making endeavors could subsidize those that lose money. In essence, some activities are taxed to subsidize others.

This tax-and-subsidy approach has two problems. First, it is inefficient. Members are overcharged for activities that earn a profit, and they are undercharged for others that are subsidized. This encourages members to avoid the marked-up activities and patronize those that are subsidized. Second, people do not receive equal treatment. Some pay a disproportionate share of the tax, and others get a disproportionate share of the benefit. Thus, some feel that the system benefits groups disproportionately, e.g., families more than singles.

RECOMMENDATIONS FOR GOALS

DoD should take the following actions to clarify the goals of the personnel support programs:

- Define intermediate goals that complement readiness
- Acknowledge stewardship objectives
- Develop working standards for assessing potential problems
- Specify criteria for assessing well-being
- Acknowledge program limits (i.e., which problems it is not suited to address)
- Improve local flexibility for meeting well-defined goals
- Assess equity and efficiency problems associated with using nonappropriated fund activities for accomplishing goals.

METHODOLOGICAL TOOLS

Five research methodologies are useful for assessing personnel support programs:

- Nonwage benefit
- Compensating wage differential
- Individual well-being
- Community environment
- Program usage and retention.

Nonwage Benefit Approach

Personnel support programs are a nonwage benefit of military service. Members receive specific goods and services as a result of their military service. While nonwage benefits lack the flexibility of cash payments, they are an untaxed benefit, offer economies of scale, and help reduce turbulence by addressing problems that lead to separations. They can also act as a screening mechanism: by establishing a certain environment (e.g., vigorous physical activity, close-knit communities) they can attract people who value that environment. Thus, the programs attract people who are likely to succeed in the military.

This approach provides a rigorous, systematic method for assessing whether a program is a suitable component of the compensation package. However, it requires careful calculation of costs and outcomes—difficult information to collect for personnel support programs. Furthermore, it does not facilitate assessing bundles of programs, and it tends to ignore effects on the larger community.

Compensating Wage Differential Approach

Compensating wage differentials account for workplace differences, i.e., workers expect a premium for difficult or hazardous aspects of their jobs. Several attributes of military service—danger, frequent relocations, separation—argue for such differentials. The differential can be implemented with either higher wages or nonwage benefits. The military will pay these costs either through the programs or in higher recruiting and retention costs.

This approach is well-suited to identifying negative (or positive) workplace conditions. It is not as effective in identifying programs. For example, it might identify frequent separations as a drawback to military service, but would require a separate analysis to define a program that addresses the problem. Also, like nonwage benefits, it ignores the potential for community-level benefits.

Individual Well-Being Approach

Social science research asserts that the well-being of military members and their families affects readiness, and that well-being is af-

ected by their general life situation (e.g., spouse characteristics) and by the demands of military service. Models based on this research are good for identifying potential problems or specific aspects of military life that affect well-being. An important limitation of the approach is that while it identifies the problem, it does little to show how program use translates into improved outcomes. The inherent problem is that it is hard to separate cause and effect. For example, are service members happier because they exercise in fitness centers, or do happier people work out more?

Community Environment Approach

A potentially important effect of any support program is its effect on the community at large. Some programs target individuals, e.g., someone who abuses alcohol. If the program successfully treats the condition, the community benefits; a more productive member may ease the burden on other workers whose workload may have increased as a result of the individual's difficulties. One possible direction for future quality of life research might be to construct a baseline community index and assess how well the index explains such military outcomes as retention or well-being. If the results show that community effects matter, then the military could target funds for bases with low indexes. A potential drawback is that the baseline data do not exist and would have to be created.

Retention and Program Usage Approach

Retention and program usage studies attempt to draw connections between program use and staying in the military. This appealing approach has an inherent flaw: the comparison of retention rates for program users and nonusers is neither a good nor a reliable measure of program effectiveness. The principal problem is that the approach misrepresents the comparison group in the evaluation. Many support programs are directed towards members with a particular problem (e.g., stress, marital or financial difficulties). Members with these problems are probably less likely to stay in the military than those without problems. The appropriate comparison is whether support programs increase the retention rates of members *with problems* over and above what the rates would be without the programs. However, this research approach compares the retention rate

of program users with that of nonusers. The programs could appear ineffective when they actually were doing a very good job.

Blending Research Approaches

These approaches can be integrated into a model for building and assessing a personnel support agenda. The well-being and community approaches promise to be good indicators of problems, potential or ongoing. They are also good for anticipating how policy changes may affect military members. The economic tools of non-wage and differential compensation are more pragmatic components that can help address issues such as the distribution of resources among programs. The effectiveness of current programs should be assessed by how changes in availability affect well-being or outcomes. A valid assessment will require careful experimentation with availability.

DATA REQUIREMENTS

Data will play a central role in any effort to build a personnel support agenda. This study addresses how currently available data can be used to address these issues and how future data collection could better support analysis. It draws on a large, multipurpose study conducted periodically by DoD, most recently in 1992. We analyzed those data for information about well-being and program use. We also examined the local information available about program accounting (e.g., staffing, services offered).

Well-Being Data

Most military members are satisfied with their lives, although enlisted personnel tend to be less satisfied than officers. Satisfaction varies by demographic category, by service, and by rank. For example, older members are slightly more satisfied than younger members, and married members accompanied by their spouses are more satisfied than singles. Army personnel are the least satisfied, and Marines the most. Junior enlisted are the least satisfied; satisfaction increases with rank.

These data could be supplemented by other surveys that have more and better indicators. Adopting the additional measures would provide a more precise measure of well-being, draw on existing research, and enable comparisons with the civilian population. Thus, the measures could make it easier to isolate vulnerable populations or situations and could be used to refine programs.

Program Usage Data

The DoD survey provides a comprehensive inventory of program use for community and family support programs and for MWR programs. In the first category, the most used programs over a two-year period are housing, legal assistance, family support center, and chaplains. Many members do not use any of the programs and others only a few. The median number of programs used is two. Generally, those who use the programs are well satisfied with them.

Several member characteristics affect use. Demographic characteristics consistently influence community and family support program use:

- Older members use programs less.
- More-educated members use them more than the less-educated.
- Females use programs more than men.
- Those with an absent spouse use them more than those whose spouse is present.
- Single parents use programs more than single nonparents.
- Those with employed spouses use programs about 20 percent less than those with unemployed spouses.
- People who live in government housing tend to use programs more.
- Navy members use programs about 20 percent more than Army members, and Air Force use is lower than Army use.

Turning to MWR programs, use differs widely. The most used programs are the main exchange, the commissary, the 7-day shoppette (convenience store), and the fitness center. These programs enjoy

much more use than the community and family support programs, many of which are designed to address specific problems. More than 99 percent of the members surveyed have used some MWR program at their base, and the average number of programs used is 11.

Like the community and family support programs, MWR program use varies along a number of dimensions. Demographics, marital status, family composition, housing, and spouse employment all affect use. Use declines with age for almost all programs. The better educated make much more use (20–30 percent) of recreation facilities, but only a little more (5 percent) of the commissary. Women bowl and ride horses more than men do, but they play less golf. Blacks are more likely to use the fitness center than their white, non-Hispanic counterparts, but are less likely to use the golf courses, marinas, and stables. Geographic bachelors are the heaviest users of MWR programs. Those who live on post use programs more than those who live in local communities, and those who rent use them more than those who own homes. One-income families use them more than two-income families.

Service and rank also affect MWR use. Generally, use is much lower in the Army than in the Navy, and much lower still in the Air Force. Among officers, higher rank generally correlates with higher use. Officers use programs more than enlisted, and senior officers use them more than junior officers. The reverse is true among enlisted personnel, with junior personnel using them more than seniors (except for youth activities and the housing office).

Additional data, such as information about the extent of problems, could provide better indication of program use. Usage gives little insight into how widespread a problem is. Frequency of use is also important, and this information should be collected at specified times. Also, surveys should include information about what civilian alternatives are available and why users choose one over the other.

Program Accounting

An important set of information is what resources are devoted to these programs. Currently, this information is at best difficult to get, but it is critical for cross-base comparisons. If one base is spending five times more on a program than another base, that information is

important to assessing the cost-effectiveness of outcomes. Is it worth five times the resources for a modest improvement in results?

Central to this is establishment of a unified base accounting system. This would enable analysis of what resources were committed to a program, how the program was used, and how usage changed over time. Also needed is better information about program availability and member workloads at different bases, important information for any analysis of use. Finally, information about local conditions is also important, such as base demographics (e.g., numbers of families) and conditions (e.g., frequency of deployment). This information would provide input into the community index described above.

CONCLUSIONS

This report illustrates the complexity of designing an efficient personnel support agenda. There is no simple approach to designing effective programs and finding those that contribute most to a well-defined military objective. The issue will require several actions to arrive at a coherent personnel support agenda. First, DoD needs to specify clearly its policy goals for the overall agenda, as well as the operational goals or standards for specific problems. Second, a comprehensive research approach is needed both to identify the programs that can meet these goals and to assess their effectiveness in meeting them. Finally, more data are required to assess the problems of military members and their families, as well as to evaluate whether the programs are effective in meeting military objectives. This methodological structure can lead to improved programs that effectively address member problems and the underlying military goals.

ACKNOWLEDGMENTS

The author is grateful to Carolyn Becraft, Deputy Assistant Secretary of Defense for Personnel Support, Families, and Education, and Gail McGinn, Principal Director of the Office of Deputy Assistant Secretary of Defense for Personnel Support, Families, and Education, for their support and encouragement of this research. The author also benefited from the advice of Barbara Dieker, Colonel Willard Mollerstrom, Colonel Jack Padgett, Lieutenant Colonel Linda Wright, and Lieutenant Colonel David Witkowski from the Office of the Deputy Assistant Secretary of Defense for Personnel Support, Families, and Education.

The report benefited greatly from discussions with RAND colleagues—Susan Hosek, Peter Tiemeyer, Jerry Sollinger, and Gordon Lee—as well as careful technical reviews of the report by Margaret Harrell and Edward Keating.

ACRONYMS

AAFES	Army and Air Force Exchange Service
APF	Appropriated funds
BLS	Bureau of Labor Statistics
BMC	Basic military compensation
CONUS	Continental United States
DBOF	Defense Business Operations Fund
DMDC	Defense Manpower Data Center
DoD	Department of Defense
EBS	Employee Benefits Survey
EAP	Employee assistance program
EUCOM	European Command (U.S.)
FSC	Family Support Center
MWR	Morale, welfare, and recreation
NAF	Nonappropriated funds
OCONUS	Outside the continental United States
OSD	Office of the Secretary of Defense
OWB	Objective well-being
PCS	Permanent change of station

PERSTEMPO	Personnel tempo
QDR	Quadrennial Defense Review
QOL	Quality of life
SWB	Subjective well-being
TAP	Transition Assistance Program
TDY	Temporary duty

INTRODUCTION

The recent Quadrennial Defense Review (QDR) affirmed the commitment of the U.S. Department of Defense (DoD) to maintaining a high quality of life (QOL) for military members and their families (DoD, 1997). The QOL for military personnel is affected by the military work environment, compensation and health benefits, the military housing program, and personnel support programs. This study develops a methodology for building an agenda of personnel support programs. These programs are designed to offset the stresses associated with the military work environment and to complement the other benefit programs.

SCOPE AND RATIONALE FOR PERSONNEL SUPPORT

The military provides a broader range of personnel support programs for members than most civilian employers provide for their employees. As shown in Table 1.1, personnel support programs are generally grouped into two broad categories: community and family support programs and morale, welfare, and recreation (MWR) programs.¹ Community and family support programs are primarily funded through appropriated funds (APF) with no user or patron

¹Program groupings differ somewhat between military services and sometimes at different levels of organization within a service branch. For example, childcare is a family service program at the Office of the Secretary of Defense (OSD) level, but it is typically grouped with MWR activities at bases.

Table 1.1

Personnel Support Programs Available for Military Members and Their Families

Community and Family Support Programs	Morale, Welfare, and Recreation Programs
Parent education	7-Day Store/Shopette
Stress management programs	Animal care clinics
Individual counseling	Arts and crafts center
Spouse employment services	Auto hobby shop
Single-parent programs	Auto repair centers
Suicide prevention programs	Auto/truck rental
Alcohol/drug programs	Bowling
Relocation assistance	Cabins, cottages and cabanas
Premarital programs	Clubs
Transition from military assistance	Commissary
Family Support Centers	Fitness centers
Chaplain services	Golf courses
Housing office services	Laundry/dry cleaning
Marriage and family counseling	Libraries
Child care	Main exchange
Services for special needs	Marinas
Legal assistance	Photo hobby shop
Spouse/child abuse services	Recreation gear issue
Crisis referral services	Rentals/equipment
Rape counseling services	Stables
Information and referral services	Temporary lodging facilities
Financial counseling	Tours and tickets
Youth/adolescent programs	Youth activities
Services for military separation/deployment	

charges.² MWR programs are further divided into three groups that correspond to their designated funding mechanism.

- **Category A: Mission sustaining.** These activities include fitness centers, libraries, and recreation centers. The activities are considered essential to meeting military objectives and are primarily supported with appropriated funds.
- **Category B: Community support.** These activities include automotive hobby shop, child development centers, and youth ser-

²Voluntary education generally pays full educational expenses for high school completion and most of the expenses for vocational, undergraduate, and graduate classes.

vices. They are funded through a combination of APF and non-appropriated funds (NAF). User fees generate a portion of revenues.

- Category C: Business activities. These activities are not essential to the military mission, but they are desirable for the military community. The activities include clubs, golf courses, and exchanges. Category C activities are supposed to be self-sustaining and generate NAF funds to support other MWR activities.³

The DoD goal is that a minimum of 85 percent of category A expenses will be covered with APF funds and a minimum of 65 percent of category B expenses will be covered with APF funds.⁴ These groupings vary somewhat across military services, but similar basic programs are offered across the service branches.

The broad range of military support programs highlights that military service imposes unusual demands on its members. These demands include frequent and unanticipated deployments, extended absences, frequent relocations, and isolation of members and their families from traditional sources of support, such as extended family and community institutions. The support programs help offset the effects of these unique aspects of military employment.

The isolation and size of military bases have also helped explain why military support programs extend beyond the immediate workplace (DoD, 1993). In most cases, civilians live in communities that provide a variety of social services, recreation, and leisure activities. Isolated and self-contained military bases are workplaces, but they are also communities in their own right and need community services. Even when bases are not remote, a base is sometimes large relative to the local civilian community, so it is feared that military dependence on civilian social services could overwhelm the local services.

³Way-Smith et al. (1994) show that the system of accounting for MWR costs is incomplete. They argue that the definition of "self-sustaining" that is used by the military does not include capital costs, depreciation, and land costs.

⁴The current programs do not meet these DoD objectives in most services. The goal was intended to encourage the services to funnel more APF funds into these support programs.

CHANGING MILITARY ENVIRONMENT

The changes in military service and structure over the past decade have created turbulence for its members. These changes have both affected personnel support programs and indicated new directions for them.

Force Restructuring and Base Closures

As part of the military drawdown, military bases have closed and functions have been consolidated. New delivery systems for personnel services should reflect this changed geographic structure of the force. For example, it may be more efficient to have a regional clustering of services when fewer bases are involved.

Mission Changes

Changes to military missions have made deployments more likely for large numbers of the force. In addition, personnel tempo (PERSTEMPO) increased after the drawdown and is creating extra stress on members and their families. These changes in the military workplace may recommend a modification of the personnel support program to ease these work-related problems.

Changing Demographics

About 65 percent of military members are married, and over 60 percent of married members have employed spouses. Support programs must adapt to this change in force demographics. For example, a relocated military member may require more child care and spouse employment services than in the early 1970s, when more members were single and fewer spouses were employed. In addition, civilian spouse employment has reduced the availability of volunteers who have traditionally supported many community programs and services.

Housing Policy

Current initiatives would reduce military housing and encourage more members to live off-base in civilian housing (GAO 1996; Ackerman et al., 1997). Under such scenarios, DoD needs information on how these changes would affect the use of on-base programs, and whether special programs (or support for civilian programs) are needed to support off-base members.

PURPOSE AND APPROACH OF THIS STUDY

Given these changing conditions and ongoing budget pressures, DoD needs to rethink its system of providing personnel support. Are some existing programs unnecessary or are new programs needed? Are programs properly funded and implemented? How should the support agenda respond to the changing military environment? The answers to these questions are needed to redesign personnel support programs for the future.

In addition, better decision processes are needed for allocating support funds between programs as well as between bases. These processes would improve managers' ability to meet current problems and adjust to changing conditions. In addition, improved decision-making tools and information would complement efforts to maintain funding for the support agenda.

This study develops a methodology that can help DoD answer key policy questions about choosing programs and building an effective support agenda. Specifically, the study accomplishes three tasks. First, it addresses the goals and funding mechanisms for personnel support programs. While the ultimate goal is to provide support programs that enhance force readiness, the discussion shows that the readiness objective limits insight into the structure of support programs. Second, it describes a set of methodological tools that form an analytical framework for assessing personnel support programs. A blending of different research methods provides the most promising approach. Third, it outlines the limitations of existing data for using existing analytic tools and addressing the ultimate policy issues.

Note that this report stops well short of creating a model of the ideal personnel support system. While such a result is a worthy objective, poorly defined goals, limited methodological tools, and weak data impede efforts to evaluate either separate programs or the support agenda as a whole.⁵ Instead, the report offers specific recommendations toward building an infrastructure for designing and evaluating the personnel support agenda.

The remainder of the study is structured as follows: Chapter Two examines the goals of the personnel support program; Chapter Three investigates an analysis framework for building and assessing a personnel support agenda. Chapter Four examines the data requirements for personnel support research; and Chapter Five consolidates the results and offers conclusions.

⁵As we shall see below, these problems are endemic to the complex nature of personnel support itself and are mirrored in the decisionmaking of civilian employers. Famulari and Manser (1989) argue that few studies have assessed the value of employer-provided benefits. They show that additional data and methodological research are needed to identify the value of these programs for workers. For example, recent studies (Meisenheimer and Wiatrowski, 1989; BLS, 1997) show that over half of civilian employees have access to an employee assistance program (EAP). These employer-sponsored programs offer access to counseling or treatment for workers with personal problems such as stress, drug abuse, and family problems. Yet few studies have addressed the effectiveness of EAP programs or their value to employers and/or employees.

GOALS OF THE PERSONNEL SUPPORT PROGRAM

The goals of personnel policy are articulated in DoD directive 1342.17, published in December 1988. The key principle states:

DoD personnel and their families should be provided a quality of life that reflects the high standards and pride of the nation they defend, and this policy should be achieved by working in partnership with DoD personnel and their families, recognizing their role in the readiness of the total force.

While this directive provides broad goals, it provides little insight into what standards should be applied, what programs should be provided to meet these standards, and how the costs of those programs should be divided between military personnel and taxpayers.

This section addresses some of the ambiguities surrounding the goals of personnel support programs. Much of the difficulty in building a support agenda revolves around defining goals both at a broad policy level and an administrative level. The section begins with the broad policy distinction between readiness and stewardship objectives for support programs. It then addresses the problem of translating goals into specific programs. It considers the trade-offs between program flexibility and standardization. Finally, it discusses inherent difficulties in funding some support programs through funds raised in business activities by the military.

DEFINING INSTITUTIONAL GOALS

Readiness or Business Objectives

The ultimate DoD standard for judging the success of a personnel support program is to show its cost-effectiveness in sustaining readiness. While this standard is laudable, it is nearly impossible to use as a tool for program evaluation. The problem stems from inherent difficulties in measuring military personnel readiness (Schank et al., 1997).

Several personnel support studies (Burnam et al., 1992; Harris et al., 1995; Kerce, 1995) have relied on individual self-reported measures of readiness. These measures show the member's evaluation of the unit's readiness or his or her individual readiness (i.e., availability for duty, ability to deploy, ability to perform), but this evaluation is not necessarily a consistent estimate of the unit's warfighting preparedness. These individual evaluations have not been compared to more-objective readiness rules that are conventionally used by the military. Indeed, tabulations of member evaluations play no role in the military's determination of a unit's readiness.

The value of self-reported readiness measures is also limited because the measures have no well-defined metric. A composite readiness index can be constructed from a set of self-reported measures, but policy decisions require some assessment of the value of incremental movements along the readiness scale. For example, Kerce (1995) constructed a personal readiness composite that ranged from -25 to 13, where positive scores are associated with higher self-reported readiness. Suppose that expanded fitness facilities would raise this readiness score from a mean of zero to a mean of two. The policy change could still not be evaluated, since the change in readiness score has no operational meaning—more readiness is preferred to less, but it is unclear how much readiness improves when the scale moves two points or whether this movement is cost-effective.

In lieu of reliable measures of readiness, a more useful research approach is to examine other military outcomes that are associated with personnel readiness. These measures could include recruiting, attrition, and retention. The recruiting effects of personnel support programs are difficult to assess, since little variance occurs in the personnel support programs that are offered to recruits. If all re-

recruits are offered the same benefit package, then assessing how an additional support program affected the recruit's enlistment decision is impossible. Actual program quality or availability may vary across service branches and between bases within a service, but potential recruits will have insufficient information about these variations to alter their enlistment decision. Therefore, the success or failure of support programs is nearly impossible to assess from recruiting outcomes.¹

Given the shortcomings of other measures, nonattrition or retention are perhaps the most workable military outcome measures for assessing the cost-effectiveness of support programs. Unlike existing readiness measures, attrition and retention are measured by a well-defined metric (proportion leaving or staying, respectively) and program success can be evaluated against an alternative approach of increasing direct compensation.² Service members also face objective differences in personnel support at different bases, since the quality and quantity of services differ widely across bases. Program effects could be measured by assessing whether retention rates were higher at bases with "better" support programs, after controlling for personal characteristics and other military environmental effects on retention.

The small size of support programs themselves creates a strong impediment to estimating program effects, however. In 1996, for example, the Army spent about \$337 and \$349 per soldier for family and MWR programs, respectively (U.S. Army, 1997). Even for junior enlisted personnel, these expenditures represent less than three percent of basic military compensation (BMC). If MWR expenditures changed by ten percent (\$35 per soldier per year), it would be very difficult to assess how this small change in compensation affected retention. Chapter 3 discusses specific issues that are involved in evaluating how support programs affect retention.

¹The effectiveness of recruiting options like term length and educational benefits has typically been demonstrated in controlled experiments (Buddin, 1991). Such controlled experiments are impractical for assessing the role of support programs in retention, since the programs are too numerous and too complex.

²Reenlistment effects must be estimated for a population that is eligible to stay in the military. Some members may be ineligible for reenlistment because of poor performance or limited opportunities in their military occupation.

Stewardship Objectives

Military objectives like readiness and retention are probably not the only criteria for judging personnel support programs, however. The programs offered suggest that policy makers are motivated by a stewardship objective to improve and sustain the quality of life for military members and their families. Teaching life skills, fostering continued education, and preparing members for civilian employment are examples of support programs that extend beyond the immediate business objectives of the service branches. These programs may have mixed effects on readiness or retention, since members with improved skills will be more valuable to both civilian and military employers.

Self-improvement may be a legitimate goal for support programs per se, regardless of whether the programs ultimately improve military outcomes. Aside from military programs, the government provides a variety of special programs to encourage education and assist civil sector employees in finding employment, so it is not surprising that policy makers are encouraging similar initiatives for its military workforce.

Stewardship goals are also reflected in recent Congressional efforts to expand youth services for military dependents (U.S. House of Representatives, 1996). Policymakers are concerned about "at risk" military youth and are encouraging the military to expand and enhance youth programs. Military dependents face unusual pressures since their families relocate frequently; they have limited access to extended families for support, and their families may be separated by extended deployments or training exercises. The new efforts will address the "developmental needs" of school age children, while continuing traditional social and recreational programs.

New or expanded youth services can be tied to military outcomes, since youth problems may distract members and affect their performance. Nonetheless, Congressional concerns may also reflect a general concern for the welfare of military dependents over and above their indirect effects on military readiness or the retention of their parents.

The stewardship objectives of support programs are controversial, especially in times of budget austerity, but the successes and failures

of the programs may ultimately have important effects on military objectives. If members are successful in acquiring life skills or gaining post-service employers, then potential recruits will view the military as a successful career path. Alternatively, if military members and their families are plagued by problems, then it will be increasingly difficult to attract and retain a quality workforce. Military and stewardship objectives are not mutually exclusive; some stewardship objectives may foster a community where the military objectives are more easily achieved.

LINKING INSTITUTIONAL GOALS TO OPERATIONAL REALITIES

Neither readiness nor stewardship goals provide sufficient guidance for building or sustaining a personnel support agenda. Readiness is a lofty goal, one on which it is easy to agree but which sometimes proves elusive in day-to-day activities. The same can be said for stewardship, the military's goal of offering a guiding hand to service members in its charge. DoD needs a set of secondary or intermediate goals that likewise are tied to readiness or stewardship objectives. Support programs can then be constructed to address these intermediate goals. This incremental approach builds a support agenda around a set of intermediate goals that are themselves tied to the ultimate institutional goal. For example, if retention rates among married members fall after a deployment, we could consider whether support programs could ease family separation problems. The intermediate goal would be easing separation problems during a deployment; readiness would remain the ultimate goal. Alternative support programs could address these separation problems, and managers could assess the programs' effectiveness.

This incremental approach is not as comprehensive as relating specific programs to readiness or stewardship objectives directly, but the more comprehensive approach usually is not readily implemented. First, as discussed earlier, the whole support program is modest in size relative to compensation, so it will be difficult to assess effects of particular programs on broad, global outcomes like readiness and stewardship. In many cases, one will not have sufficient statistical precision to assess whether the program has an effect. Second, even if the comprehensive approach works well, it is time consuming. A

new program takes considerable time to implement; program effects may themselves accrue over a period of time, and relevant global outcome measures likely will be collected intermittently. Operational necessity requires that some version of the incremental approach be the overriding theme for building a support agenda.

Operational standards are also needed in the building of intermediate goals and the assessment of program outcomes. Should programs be designed to offset all observed differences in military outcomes? For example, married members or parents may inherently have more deployment problems than single nonparents, so the "appropriate" standard may not be the problem level of deployed single members.³ What is the appropriate comparison group? The extent of family problems could be compared for married members who were recently deployed versus unmarried deployed. Alternatively, family problems could be compared between military families and similar civilian families. Some standards are needed; it is unclear how DoD or the members themselves make these comparisons.

The problem of identifying standards is also intertwined with an assessment of whether programs should be designed to address members' objective well-being (OWB) or subjective well-being (SWB). Objective well-being is a verifiable, observable quality of life that is assessed for an individual. SWB is an individual's self-assessment of life satisfaction. A common finding in the QOL literature is that OWB and SWB are poorly correlated (Mullis, 1992; Myers and Diener, 1995; Diener and Diener, 1996; and Lykken and Tellegen, 1996). When individuals are asked about their general satisfaction or well-being, the responses reflect a comparison with a norm or expectation. These SWB measures are poorly correlated with traditional objective measures of well-being; Lykken and Tellegen (1996) report that no more than 3 percent of the variance in SWB is explained by socioeconomic status, educational attainment, family income, or marital status.⁴ Individuals with high income tend to have higher

³Indeed, the problems of deployed single nonparents may be more amenable to solutions than those of married members.

⁴Mullis (1992) hypothesized that family income was not highly correlated with SWB, because members expected their income to change in the future. In his analysis, he controlled for permanent income as a better measure of OWB than current income.

expectations for their standard of living than individuals with lower income, so their reported SWB is not generally much higher than for individuals with less income.

The weak link between OWB and SWB raises key issues in designing support programs. An expansion of programs might well enhance objective standards of living, but the new expense might do nothing to improve SWB. Alternatively, should we focus support programs on improving SWB at the expense of OWB? The weak link between the two suggests that programs that advance one goal may do little to advance the other.

Ultimately, support programs should address both OWB and SWB issues. Little is gained by enhancing OWB if members are dissatisfied with their situations. While workplace environment is only one component of SWB, support programs should attempt to offset some of the arduous aspects of military life and in turn enhance the SWB of military members. As we will discuss in Chapter 3, more research is needed to assess how support programs affect SWB and in turn how SWB affects retention or other personnel outcomes.

IMPLEMENTING GOALS ACROSS BASES: EQUITY VERSUS FLEXIBILITY

Should the military ensure that members have comparable programs at all locations? Alternatively, should programs be adapted to local conditions and situations? A widespread concern of policymakers is the wide disparity in support programs across bases and service branches. The disparity reflects differences in both the size and scope of facilities, and the differences in the quality and availability of support services at some locations. For example, some members have easy access to modern, air-conditioned fitness centers, while others are limited to a crowded, poorly ventilated facility. These differences are widespread across bases. In contrast, Way-Smith et al. (1994) argue that Army MWR programs are too similar across bases. They contend that the Army replicates the same plans at each base and does not take local conditions into consideration. For example,

His results show that permanent income explained only about 7 percent of the variance in SWB.

civilian alternatives to MWR are common in urban areas, but urban bases had MWR programs that were similar to those of isolated bases.

The lack of equitable support programs frustrates members who are reassigned to bases with worse programs than those at their initial location, or who are assigned to other bases for deployments or training exercises. In Europe, members are frequently involved in joint service operations, and the commands are concerned about the frustrations associated with inequitable support across services.⁵

However, support differences across bases reflect the flexibility of the services, the service commands, and local base officials in the allocation of support funds. Flexibility allows the adaptation to local problems and priorities. Budget pressures have exacerbated differences across bases, as local officials struggle to divide reduced funding over a large number of priorities.

Support programs have also been hampered by old and frequently inadequate facilities. Most support functions are housed in buildings that are more than 30 years old, and funding for new construction is limited. The services are upgrading support buildings with new military construction and using NAF funds to upgrade their physical plant. Substantial differences in basic support facilities will continue for many years, since the renovation funding is inadequate to keep up with necessary upgrades and new construction.

In the past year, OSD and the services have adapted broad goals for specific support programs (DoD, 1996), but local base officials have considerable discretion and flexibility in administering the support agenda. In some cases, this flexibility may lead to innovative programs or a meshing of programs with local conditions. Elsewhere, however, program priorities and focus vary idiosyncratically with changes in the base administration.

The current system of implementing goals could be improved if goals were more completely specified across bases and the local authorities then had more flexibility in meeting these goals with local initia-

⁵At a recent conference on quality of life programs, the U.S. European Command (EUCOM) endorsed common QOL standards for the entire European theater.

tives. Local authorities could develop new or modified strategies for meeting military goals. The system needs a comprehensive reporting of activities and outcomes, so policymakers could be assured that the programs were addressing the underlying goals.⁶ The reporting system would allow senior managers to assess the success of local authorities, but it would also provide them with important feedback for formulating intermediate support goals. As we will discuss in Chapter 4, comprehensive local accounting of programs and resources is critical to building an efficient personnel support system.

Of course, the greater flexibility would need to be accompanied by adequate resources to reach the goals. In recent years, many local base officials have been concerned that their responsibilities for new programs and expansion of existing programs have increased but that funding has not kept pace.

PROFITABILITY IS NOT A GOAL OF THE SYSTEM

Much of the MWR program agenda is funded through income from MWR business activities known as class C programs. In 1996, the Army MWR program was \$1.3B, and 67 percent of the funds were nonappropriated (U.S. Army, 1997). The military exchange system is perhaps the largest single contributor to MWR revenues. The Army and Air Force Exchange Service (AAFES) operates 10,878 facilities worldwide and contributed \$239 per service member toward funding MWR programs in 1996 (U.S. Army, 1997). NAF revenue allows a much larger MWR program than taxpayers fund through APF and allows the MWR community substantial flexibility in designing and subsidizing programs.

In recent years, several factors have limited the ability of MWR to generate NAF. First, many bases are located near civilian population centers, so MWR businesses face competition from local merchants.

⁶The management literature (Simons, 1995) stresses the importance of providing managers with great flexibility in developing strategy for meeting corporate goals. The theory is that modern organizations are complex; therefore, local managers can best develop strategies to meet broad goals by capitalizing on emerging local opportunities.

Military exchanges must compete with high-volume, no-frills retailers like Wal-Mart, and so must hold down prices.⁷

Second, policies and military attitudes towards alcohol and tobacco consumption have changed in ways that hurt revenue-raising capabilities. On-base drinking by 18- to 21-year-olds is now prohibited, and drinking-related incidents are now more likely to result in discharge. This regulation of alcohol has diminished the profitability of military clubs. In addition, exchanges have sharply increased tobacco prices. Previously, cigarette prices were much lower in exchanges than in civilian stores, but the Clinton administration objected that this policy encouraged tobacco use and was inconsistent with the government's public health agenda. The effect of these price increases on MWR revenue is uncertain. If, as the government hopes, individuals are sensitive to price and reduce tobacco consumption accordingly, then MWR exchange revenue will fall; if members sustain consumption, then exchange revenue will actually increase. Overall, public health officials are committed to reducing smoking, especially among the young, so exchange profits from tobacco products will presumably decline.

The third long-term problem confronting MWR programs is that the military is becoming more diffuse. The percentage of spouses of enlisted personnel who are employed full-time has risen from 25 percent in 1985 to 37 percent in 1997.⁸ This trend has drawn family focus away from the base and towards the local community. Several studies (CBO 1993; DoD, 1995b; GAO, 1996; and Ackerman, 1996) have called for increased reliance on private housing for military families. If such policy recommendations are implemented, then on-base military housing stocks may diminish substantially in the next decade. These trends are pulling families away from the

⁷The report of the Commission on Roles and Missions (DoD, 1995a) argued that the government is not supposed to compete with private-sector firms. It said that the presence of commercial providers of goods or services in the local community signals the government not to offer the same items.

⁸These percentages are based on a comparison of enlisted members in the 1985 Department of Defense Survey of Enlisted Personnel and the 1997 Department of Defense Enlisted Career Intentions Survey. The 1997 survey was restricted to members with 10 or less years of service, so our comparison is based on a similar restriction on the 1985 database.

traditional MWR support arena of the military base and reducing spending in MWR facilities.

These pressures on MWR revenues come when budget pressures are limiting appropriated funds and pressures for new and expanded programs continue. The MWR community is initiating business-like practices to cut costs and begin new class C programs to raise revenue; for example, the Navy hopes to earn \$30 million per year by providing access to phone service in barracks housing.

The extension of pay-as-you-go services to military members is a clear benefit. If members are willing to pay the cost of better phone access, cable television, and other private activities, then the military has little reason to prohibit or restrict these activities. Equity concerns suggest that single members in barracks housing have the same telephone access as family members.

The use of "pay-as-you-go" services, as well as traditional class C programs, as MWR profit-making activities deserves attention. MWR profits are earned from the very population that MWR programs serve, so markups on some activities are used to subsidize other activities. The member pays higher prices for telephone service or exchange products, and receives subsidized fitness centers or child development centers. In essence, some activities are taxed (prices are marked up above the cost of the product/service provided) so others can be subsidized (provided at less than cost).

This tax and subsidy approach to funding MWR programs results from insufficient APF. If all class C products and services were priced at cost, MWR activities would decline substantially. As we saw earlier, 67 percent of Army MWR was based on NAF. Members would suffer from this reduction in programs, but this change would be partially offset by the reduction in costs on class C activities.

The cross-subsidization of some MWR activities by others has two inherent problems. First, it is inefficient. Members are overcharged for some activities so these activities can earn a dividend. Members are then undercharged for other activities, since these purchases are subsidized by MWR dividends. This cross-subsidy does not create any extra value; at best, the member will get back the markup on one activity by subsidization of another. In fact, the distorted pricing of both activities reduces efficiency, since members are encouraged to

underconsume activities that are marked up and overconsume activities that are subsidized. The bottom line is that the member suffers, since the tax and subsidy model distorts prices and encourages the member to spend resources inefficiently.

The second problem with cross-subsidization is that the program does not treat members equally. Some members pay a disproportionate share of the tax and others get a disproportionate share of the subsidy. Equity is a problem because members have different access to MWR activities and value those activities differently. For example, single enlisted members generally live on-base and have limited transportation to reach off-base commercial retailers. As a result, these members have fewer alternatives to military exchanges than married members living in the community. Therefore, single members may be less sensitive to exchange markups and contribute disproportionately to exchange profits. Yet, the single member share of exchange profits is intermingled with other profits, and there is no mechanism directing this money into programs that exclusively reward single members.

MWR revenues are distributed to address perceived "needs," and these allocations have no relation to which groups of members contributed the most to MWR earnings. The redistribution may be progressive: Wealthier senior members and retirees may pay markups on class C activities and subsidize low-paid junior members. No effort is made to track the winners and losers from MWR funding policies, however, so cross subsidies may flow in any direction. Members are concerned about whether MWR disproportionately benefits some members over others, e.g., families over single non-parents.

The services should carefully review NAF policies to consider who gains and who loses from related pricing decisions. For example, lower exchange prices or lower priced telephone service may have more value for members than the subsidized programs that these markups support. In addition, the dividends may be "earned" from the most at-risk population that MWR is attempting to serve. If consumer well-being is the ultimate goal, then all activities would be priced at their marginal cost. If MWR subsidizes programs from paternalistic goals, then these objectives should be explicitly stated in the policy debate, and APF money should be sought for them.

RECOMMENDATIONS FOR CLARIFYING GOALS

Define specific intermediate goals that complement readiness. Readiness and warfighting capability are the overriding objectives of the military, but these objectives provide too little guidance for building a personnel support agenda. Policymakers and managers need more specific criteria for choosing programs and allocating resources.

Acknowledge stewardship objectives. If the military continues to rely on a young workforce, then support programs need to address the specific problems of that workforce.

Develop standards for assessing potential problems. “Problem” groups must be compared to another group of military members or civilians. An appropriate baseline comparison group is needed to judge the efficacy of support programs.

Specify criterion for assessing member well-being. A better-defined standard is needed to assess how members are doing and how well programs meet member needs.

Acknowledge limits of programs. The military is not suited—or funded—to address all problems.

Improve local flexibility toward meeting specific goals. Local initiative is important for developing new programs and new strategies for their implementation.

Assess winners and losers from NAF funding. NAF funding is not an appropriate vehicle for funding DoD initiatives; it raises important equity and efficiency problems. While NAF funding is needed in the current environment, DoD should carefully review NAF activities and assess whether these outcomes are consistent with the underlying military goals and objectives.

ANALYSIS FRAMEWORK

Five research methodologies are potentially useful for assessing personnel support programs. This chapter describes the strengths and weaknesses of each approach in designing and assessing the benefits of personnel support programs in the military. The nonwage benefit and compensating differential approaches are drawn from labor economics. Support programs are evaluated as an integral part of employer compensation policies.

Social psychology and sociology suggest that firms should structure support programs to encourage individual well-being. Programs that are responsive to members' needs reduce stress, improve member commitment to the military, and improve job satisfaction and performance. The community environment approach, an extension of the well-being model, considers the potential of program benefits to extend beyond an individual or family to others. For example, a personal financial planning program may have benefits beyond families that use the programs, since member problems may spill over into the workplace and affect coworkers. In addition, coworkers with effective life skills developed in support programs may be able to mentor colleagues.

The last research approach considered here is somewhat different than the other four. This approach addresses the key public policy issue: Do support programs improve military retention outcomes? The approach does not address the "where" and "how" questions of other approaches, but rather cuts directly to the bottom line.

NONWAGE BENEFIT APPROACH

Personnel support programs are a nonwage benefit associated with military service. The military, like civilian employers, reimburses employees with direct compensation, deferred compensation (pension contributions), and nonwage benefits. Nonwage payments are in-kind benefits: Members are entitled to specific goods and services as part of their military employment.

Cash benefits have inherent advantages over in-kind benefits, since cash offers flexibility in purchasing decisions, whereas in-kind benefits tie to a specific good. For example, employees are better off with a cash payment of \$X instead of an employer-sponsored childcare program that costs \$X, since the payment allows the individual to spend the money on things that may be more valuable than childcare and greater flexibility in choosing among childcare options.

Inflexibility is a weakness of nonwage benefits, but these benefits have grown rapidly for civilian employers (Ehrenberg and Smith, 1991; Hamermesh and Rees, 1993; McConnell and Brue, 1992).¹ Several hypotheses explain the attractiveness of nonwage benefits in a compensation package—tax advantages, economies of scale, minimized turnover costs, and screening.

Tax Advantages

A key reason for the civilian growth in nonwage benefits is that nonwage benefits are generally not taxed. While individuals may prefer \$X in cash to \$X in nonwage benefits, the after-tax comparison is between $\$X(1-t)$ in cash and \$X in nonwage benefits, where t is the individual's marginal tax rate. Since marginal tax rates are frequently 30 to 40 percent, the greater inflexibility of nonwage compensation is

¹In recent years, some employers have attempted to increase the flexibility of nonwage benefits by allowing individuals to choose among possible benefit options. These so-called "cafeteria plans" allow individuals to tailor their benefits to meet their individual needs (Meisenheimer and Wiatrowski, 1989). Barber et al. (1992) show that flexible programs increase employee satisfaction with their benefit package and improve their understanding of the package. This study was limited to a single firm, however, so further research is needed to assess whether these results persist in other situations.

frequently offset by its tax advantages. The marginal tax rate on cash implicitly reduces the price of nonwage benefits relative to cash.

Nonwage benefits have a further employer-related tax advantage. Employers pay a share of the social security tax on wages, and nonwage compensation bypasses this tax.

The tax advantages of nonwage benefits are probably not an important feature of the military support program. First, the tax advantage is not as salient a factor for military employees as for civilian employees. The military retirement system is separate from the social security payroll tax, so the military does not have a comparable advantage in shifting from wage to nonwage benefits. Military members are exempt from some state and local income taxes, so their marginal tax rates are less than those of civilians with comparable incomes.

Second, the tax advantage is a much more important aspect of health, housing, and retirement benefits than of the modest-sized personnel support benefit.² As we saw earlier, the military expenditures on support programs is less than 3 percent of BMC for even junior enlisted members, so the tax benefit of these nonwage benefits are modest.

Economies of Scale

In some cases, collective purchase of a good may lower the purchase price. Group purchases by the employer may reduce administrative fees in purchasing some commodities. These lower costs mean that the individual is willing to accept some inflexibility associated with an in-kind benefit, since the benefit is available at a lower price.

Health and disability insurance are examples of employer-purchased services being substantially cheaper than individually purchased services. In this case, group purchase avoids administrative costs

²DoD, like private employers, has incentives to adjust its compensation package (wage and nonwage benefits) for the tax status of various benefits. This optimization of the compensation package minimizes the total cost of military personnel. On the other hand, some DoD cost savings through nonwage benefits come at the expense of the government treasury through reduced general tax revenue.

that normally would be borne by the individual employee. The advantage of group insurance, however, is that it avoids the adverse selection problem; individuals expecting high health expenditures will have the greatest incentive to purchase individual health insurance, so insurance prices must reflect the costs of this high-risk group. Low- or average-risk individuals are priced out of the market by the selection problem and will not purchase insurance, since its costs are exorbitant compared with their expected health expenditures. Employer-purchased group insurance avoids the adverse selection problem, since the employer group purchases health insurance for all employees, so high and low health risks are pooled.

Large civilian employers pay a greater share of their compensation bill with nonwage benefits than do small civilian firms. This difference reflects (at least in part) the greater employer economies of scale in purchasing nonwage benefits (Woodbury, 1983).

Employer-offered goods or services should not be provided without charge to employees, however. A fee encourages employees to compare the value of the service received to the cost of providing the service. A zero price encourages individuals to purchase more services as long as the value of the (marginal) service is greater than zero. Therefore, a zero price would lead to overconsumption of "free" goods and services—the resources could more efficiently be spent on other benefit programs where the (marginal) cost of benefits was equated with the (marginal) value received.

User fees are especially important for products when consumers' purchasing decisions are very sensitive to price, i.e., the good has a high demand elasticity. Suppose that two products have the same unit price but that product 1 is much more price responsive than product 2. If the firm makes both goods available to employees as "free" benefits, then the demand for good 1 will increase substantially whereas the demand for good 2 will increase by only a little. Inefficiency exists in the purchase of both goods, because individuals are encouraged to ignore the cost of consuming the goods while the collective costs of the benefits will enhance the wage bill. This inefficiency is greater for product 1, however, because the efficiency losses are accrued over more units than for product 2. Therefore,

user fees will discourage overconsumption of goods that have high demand elasticities.³

User fees are inefficient in some cases, since the administrative costs of collecting the fees exceed the benefits of reducing overconsumption. As shown below, the employer may also forego a fee because it believes that employees will undervalue the service either to themselves or to the workplace.

Economies of scale are a relevant issue for support programs like relocation services. In principle, DoD could prorate the costs of relocation services across members and offer those funds to reassigned members. This “cashing out” of relocation services is not likely to be advantageous to members, however, since the military has a direct cost advantage in collecting information about respective installations and disseminating the information to members. Suppose an airman is reassigned from a Continental United States (CONUS) base to Aviano Air Force Base in Italy. In principle, the airman could research costs independently and make individual decisions about the move. The Air Force has unique advantages providing information for the move, however, since it can assemble information from airmen who have made similar moves. This cost advantage does not extend to every detail of the relocation process, since some decisions depend on the specific characteristics and preferences of the airman. Nonetheless, basic relocation information is subject to economies of scale, so some relocation services will be efficient and cost-effective for the military.

Similarly, military deployments impose unique pressures on members and their families. Family support or service centers provide counseling and advice for coping with deployment-related problems. As with relocation services, these deployment programs could possibly be purchased individually through local social agencies. Yet, the military has unique experiences in directly handling deploy-

³Health insurance plans are designed to account for the demand elasticities of consumers for particular types of health coverage (Newhouse, 1993; Phelps, 1997). For example, the demand for mental health services is very elastic, so insurers have generally limited mental health coverage or assessed extra premiums that discourage employers from providing complete mental health insurance.

ments and has advantages in accumulating the “lessons learned” for deployment programs.

Minimizing Turnover Costs

Another reason why employers might embrace extensive personnel support programs is the expense of replacing employees who leave the firm. Military training and recruiting costs are high; support programs that mitigate turnover can save the cost of replacing employees.

Military members are predominantly young with little work history and little experience living away from their immediate families. Table 3.1 shows that the military work force is much younger than the full-time civilian workforce. The average age of military members is 28.5 years, compared to 39.3 years for civilians. About 43 percent of the military workforce is 25 or less; about 12 percent of the civilian workforce is that age. In addition, military members typically have little work experience before joining the military; 56 percent of enlisted personnel joined the military before age 20.

Given the military commitment to a young, inexperienced workforce, personnel support programs are needed to address problems that are endemic in that population. Many young recruits lack basic life skills associated with productive work and social interactions. While

Table 3.1
Age Distributions of Active-Duty Military
and Civilian Work Forces (percentages)

Age Group	Active-Duty Military Members	Full-Time Civilian Workers
Less than 21 years	12.9	2.3
21 to 25 years	30.3	10.0
26 to 30 years	19.9	13.1
31 to 35 years	17.4	15.3
36 to 40 years	12.3	15.4
41 or more years	7.2	43.9

SOURCES: Defense Manpower Data Center (DMDC) Family Database for 1996 (includes records for all single and married members); Current Population Survey, August 1995.

some problems are best addressed by dismissal from the military, turnover is disruptive and replacements are costly, as well as prone to the same problems in adjusting to the military work environment. Therefore, some support programs are designed to foster life skills and mitigate emergent problems of military members and their families. The costs of these types of programs should be balanced against their effect on turnover costs. "Life skills" programs may be valuable in their own right (stewardship goals), but they also make good business sense (readiness goals).

Screening

Nonwage benefits can also be used by an employer to attract and retain the best employees. Employers have imperfect information about whether new hires will be successful. For example, the employer may observe that successful hires tend to be highly athletic and exercise regularly.⁴ This observation suggests a compensation strategy whereby the firm offers health club memberships to all employees. The object of the nonwage benefit is to lure athletic employees to the firm with the expectation that they will outperform less athletic hires. Job applicants then will screen themselves for employment with the firm, since nonathletic applicants do not value the health club benefit and theoretically will be less likely to apply than athletic applicants.

One potential military application of the nonwage benefit approach is for screening new recruits through the use of compensation for continued education while in the military. Suppose that individuals who are interested in continuing education are more mature (they are planning ahead) than individuals who do not use the continuing education benefit. If these mature applicants are more successful than others in the military, then the educational program attracts the individuals who are most likely to succeed. While recruiters may have difficulty assessing the maturity of applicants, mature appli-

⁴The firm cannot easily assess whether new applicants are athletic or it could use this information directly in the employment decision. The firm could ask applicants, but enthusiastic applicants might misrepresent their athleticism to gain employment.

cants will be attracted to the military by the educational opportunities it offers.⁵

Advantages and Disadvantages of Nonwage Benefit Approach

The nonwage benefit approach provides a rigorous, systematic method for assessing whether a particular program is a suitable element of a compensation package. Cash benefits have inherent advantages, so specific conditions must be met for nonwage benefits to be efficient.

The approach has several deficiencies for fully assessing personnel support programs, however. First, the approach is dependent on careful calculation of costs of programs and worker outcomes. This information is inherently hard to collect for many support programs.⁶ Second, the approach is not readily adapted to consider bundles of programs. Some programs may complement one another and enhance their effectiveness; others may not. Third, the approach largely overlooks the effects of support programs on the workplace community. The nonwage approach could be extended to include collective benefits, but it has typically focused on the effect of programs directly on the worker.

COMPENSATING WAGE DIFFERENTIALS APPROACH

All workplaces are not identical, and workers will expect a wage premium or compensating wage differential if the job requires above-average risk, stress, or otherwise arduous work activity. Economics studies have shown that employee wages differ with working conditions, since otherwise comparable employees will require compensation for an incommensurate workplace and accept

⁵The screening effects of educational benefits must be weighed against potentially adverse effects on the turnover rate. If members are anxious to continue their schooling, they may leave the military at the end of their first term and pursue full-time training.

⁶Too little analysis of the value of noncash benefits exists for private employers as well. Famulari and Manser (1989) discuss alternative methods for computing the cash-equivalent value of nonwage benefits. They show that few private firm data are available for the analysis and that the data requirements for a thorough analysis are extensive.

lower wages for corresponding workplace amenities (Rosen, 1974; Hamermesh and Wolfe, 1990).

Military service includes arduous features like deployments away from home, workplace danger, and frequent relocation. Therefore, we could expect members to command greater compensation than comparable civilians with less arduous jobs.

The workplace costs can be offset by greater wages or by nonwage benefits. Wage compensation has the advantage of flexibility, but support programs may be cost-effective if the employer has a cost advantage in providing workplace amenities.⁷

The theory of compensating wage differentials holds that employers must pay extra compensation if they impose unusual demands on their employees. The form of the compensation will depend on the alternative economies associated with alleviating or accommodating the difficult working conditions, as discussed above.

Advantages and Disadvantages of the Compensating Wage Differential Approach

The key feature of the compensating wage theory is that it draws attention to particular aspects of employment that are unusually attractive or unattractive to employees. The military should expect extra employment costs to accompany the stresses of military employment. These costs will either be paid directly in terms of higher wages or extra support programs, or indirectly through higher recruiting and retention costs. The efficient solution balances the costs of the alternatives.

This approach is well-suited for identifying potential workplace amenities and difficulties, but it is ill-suited for identifying the best program to address problem areas. For example, if we recognize that time away from home is a workplace disadvantage, we need a

⁷Some military members face more arduous workplace conditions than others, so offsetting compensation should be tailored to unit or even individual work situations. In some hard-to-fill occupations, special compensation and service programs are used to retain members. For example, flight pay helps the military reduce the turnover rate among pilots by making military pay comparable with civilian alternatives.

secondary analysis to assess the most efficient method for alleviating this problem.

An additional weakness of the approach is that it ignores the potential for support programs to have community-level benefits beyond their immediate recipient. Collective support benefits cannot be readily incorporated into this model because measurement standards are difficult to define.

INDIVIDUAL WELL-BEING APPROACH

A recent research approach has analyzed the general well-being of military members and their families (Burnam et al., 1992; Kerce, 1995).⁸ These studies assert that military readiness is affected by the overall well-being of military members and their families. The underlying model predicts that well-being is affected by both the members' general life situation (family structure, background characteristics, spouse characteristics) and military practices (deployments, work hours, military relocations). Well-being, in turn, affects both the use of military support programs and military readiness. These models are based on previous research on civilian populations that suggests that individuals with low well-being measures are likely to have more workplace problems and less-satisfactory job performance.

These models provide an important framework for identifying potential problems or conflicts that may be affecting well-being. Burnam et al. (1992) and Kerce (1995) rely on various indexes of member well-being that allow comparison of military populations with civilians.⁹ These comparisons can identify areas where military members fare poorly relative to their civilian counterparts and can

⁸A useful literature review of the well-being and readiness literature is provided by Harris et al. (1995).

⁹These comparisons require two cautions. First, a comparable index may not apply to the military and civilian populations since factors may be weighed differently by these populations. Ideally, the civilian index would be validated by the military population. Second, some military members may select the military *because* the military environment is different from the civilian environment. In this case, differences between military and civilian indexes may reflect not differences in the work environments, but rather the characteristics of individuals who choose military occupations.

identify potential “stress points” that the military should consider addressing with special programs or services. Of course, all jobs have unique attributes, and programs may be unable to address or offset all aspects of the work environment.

Another feature of this research approach is that it helps identify aspects of the military environment that affect member well-being. Burnam et al. (1992) examines the well-being of Army members. After controlling for a variety of member characteristics, the study finds

- Well-being is reduced by long hours of work
- CONUS members have higher well-being than outside the Continental United States (OCONUS) members
- Well-being declines with the number of annual separations, but it is not affected by the length of separations
- Frequency of permanent change of station (PCS) moves and living on-base or off-base have no significant effect on well-being.

These results show the net effects of these environmental factors in the context of ongoing support programs. PCS moves presumably have adverse effects on well-being, but support programs for relocating soldiers are apparently sufficient to offset these effects.

Kerce (1995) argues that overall well-being is comprised of a number of component parts or life domains, such as the residence, health, workplace, and marriage domains. Her analysis shows that overall well-being reflects a sum of the satisfactions with various life domains, but the addition is performed differently by various populations. For example, the study shows that the residence domain is very important for single Marines, but it is insignificant for married Marines. Most single Marines live in barracks on-base. They express pervasive dissatisfaction with the privacy and space available in the barracks, and this residence dissatisfaction was highly correlated with their overall life satisfaction.

These studies have also shown links between well-being and measures of individual readiness, but both studies stress that perceived relationships between well-being and readiness measures are not necessarily causal. Burnam et al. (1992) found that higher emotional

well-being was associated with fewer job-related problems, reduced likelihood of absence for a deployment, and reduced likelihood of childcare problems during a deployment. The study found that better well-being was linked to a positive commitment to the Army and greater expected years of military service. Similarly, Kerce (1995) found a positive association between well-being and individual readiness. The study showed that higher well-being was associated with greater intent to remain in the Marine Corps.

Burnam et al. (1992) also examined how well-being was related to both the chances of using support programs and the intensity of use in a six-month period. After controlling for personal characteristics and Army environmental factors, the study found that higher well-being was associated with much lower use of financial assistance, medical care, mental health facilities, and counseling services. Fitness and gym use are much higher among members with higher levels of well-being than among those with lower levels.

Advantages and Disadvantages of the Well-Being Approach

These well-being studies offer valuable insights into the relationships between support program use, member/family well-being, and readiness outcomes. They also highlight how these relationships differ across demographic groups, family structures, and military environments. The approach has great promise as a device for focusing attention on potential problems by identifying the relationship between a particular military practice (high deployment rates or long work hours) and member well-being and readiness outcomes.

A key limitation of the well-being research is that it stops short of demonstrating how military support programs might offset the stresses of the military environment. The approach identifies potential problems, but it does little to identify how program use translates into improved military outcomes or whether increased use would improve those outcomes. The inherent problem in linking program use to military outcomes is that members with more problems are more likely to use programs, so it is difficult to distinguish the “true” effectiveness of the programs. For example, reciprocal causation and selection may confuse the interpretation of program effects:

- Are members happier because they exercise (causation) or do happier members exercise (reverse causation)?
- Do members who live off-base use MWR programs less because access is worse (causation) or do they choose off-base housing because they value MWR programs less (self-selection)?

The implications of the well-being approach for support programs is unclear. The studies show that well-being matters for readiness outcomes, but it is unclear how support programs should be developed to address well-being problems:

- What programs should be implemented?
- What is the marginal effect of a program on well-being and ultimately on military outcomes?
- How much “well-being” is enough?

The answers to these questions will help build a personnel support agenda and determine how funds should be allocated among support programs.

COMMUNITY ENVIRONMENT APPROACH

A potentially important aspect of any personnel support program is its effect on the workplace community. While some programs may be directed at individual or family issues, the benefits of effective programs may have spillover benefits for employees who do not directly participate in the programs. Some community benefits may be directly related to the program itself. For example, an employee assistance program (EAP) may reduce absenteeism and reduce stress on coworkers who must adjust their work schedules to accommodate an absent colleague. Similarly, some coping skills acquired by program participants may be shared with coworkers who do not attend EAP sessions.

In a broader sense, however, some support programs may have an indirect benefit on workers and firms by creating a climate of cooperation and commitment among coworkers (Bryk and Driscoll, 1988; Martin and Orthner, 1989). Coworkers may value belonging to an organization that shares the responsibility for meeting worker problems and addresses common goals.

Martin and Orthner discuss how military support programs affect the military community. The authors assert that the military programs create a “company town” atmosphere where members rely on the military for medical care, recreation, shopping, and support services. Since these programs are typically available in the local civilian communities, the authors believe that the programs are unnecessary and create a dependence of military members on “a system of social welfare services.” They argue that the military community should be redefined around military work groups and not around the current system of programs and services. The study offers a conceptual argument for realigning the existing support community, but it provides little evidence or even a framework for assessing the community aspects of a support program.

The education literature offers an interesting framework for examining how a school community or environment can affect student and teacher outcomes. Bryk and Driscoll argue that a successful school community will have several core features:

- Shared values—a commitment to what students should learn, the behavior of students and parents, and the school’s purposes
- Common agenda—commitment to academic and extracurricular activities
- Organizational characteristics—academic and social collegiality.

The authors constructed an index of a communal school organization based on school-level indicators of these core concepts. They found that a higher community well-being index was associated with higher teacher satisfaction, higher teacher morale, and lower teacher absenteeism. A higher well-being index also improved student outcomes; schools with communal organizations had less social misbehavior, lower dropout rates, and greater improvement in test scores.

This community approach has potential for military research. Different military bases, like schools, have different community attributes. For example, we would expect that members who live on isolated military bases feel more tightly linked to the military than members who live in civilian housing in a metropolitan area.

Features of a base are likely to affect a member's sense of belonging to the military community.

A direction for future QOL research is to construct a base-level community index and assess how well the index explains military outcomes. The index could be based on features like the shared values, common agenda, and organizational aspects of the education research, but the features would be tailored to the military organization. The index would distinguish features that are inherent to the local base situation (climate, size, numbers and lengths of deployments, mix of missions) or reflect a long-term commitment of resources (mix of military and civilian housing).

After controlling for individual background and other aspects of the military environment, the index could then be related to military outcomes such as retention, job satisfaction, and overall well-being. Theoretically, member outcomes would be higher in areas where the community index was higher.

If the results show that community "effects" are important, then the military could consider special programs to strengthen community bonds where needed. These programs could include improved funding for existing programs or the development of new programs at bases with low community indexes. For example, Martin and Orthner believe that unit and location stability should be improved to heighten members' commitment to the military community. The community index approach would offer an important test of whether bases with greater stability indeed have better military outcomes (other things being equal) than bases where members are frequently reassigned. If such effects are found to be unimportant, perhaps a reassessment of resource allocation would be in order.

Finally, successful implementation of personnel support programs requires community support. Individuals may be reluctant to seek counseling or other programs if superiors or colleagues do not support participation. Milne et al. (1994) have shown that employees are more likely to use EAPs if the programs have strong management support within the firm.

A potential limitation of the community approach is that it would rely on measurable differences across bases that reflect the "true" community environment. Base-level data are not currently collected

for base “features,” so little information is readily available for analysis.

Another potential shortcoming of this approach is that it might highlight the role of environment but provide little direction on how conditions might be improved. For example, some bases may have undesirable features due to location or mission that are not amenable to policy solutions. In addition, base support programs may not be able to link directly with the community environment. As with other research approaches, isolating the effects of support programs on the base community is problematic.

RETENTION AND PROGRAM USE APPROACH

Two recent studies (August, 1996; Koopman and Goldhaber, 1997) examine the relationship between program use and members staying in the military. Their approach is similar. Continuation or career intention is modeled as a function of the use of MWR and family support center (FSC) programs, after controlling for personal characteristics of service members. The authors argue that higher use of support programs will improve the QOL of service members and therefore the likelihood of continuation in the military.

This type of research has three inherent weaknesses for assessing how support programs affect retention. First, the approach misrepresents the comparison group for the evaluation of program effectiveness. Suppose financial counseling improved the retention of members with financial problems. Some members with financial difficulties may refuse counseling or deny their problems. Some members without problems may want financial advice. Then the difference in retention rates between program users and nonusers will understate the true effect of the financial counseling program for improving the retention rates of members with financial problems.

A simple illustration of the conceptual problem with this research approach is shown in Figure 3.1. Consider a group of new entrants and their decision to reenlist at the end of their term. Suppose that half the recruits have adjustment problems in the military and that half do not. Among those without problems, half choose to reenlist. For simplicity, assume that all those with problems receive treatment in a military counseling program. The program “cures” the problem

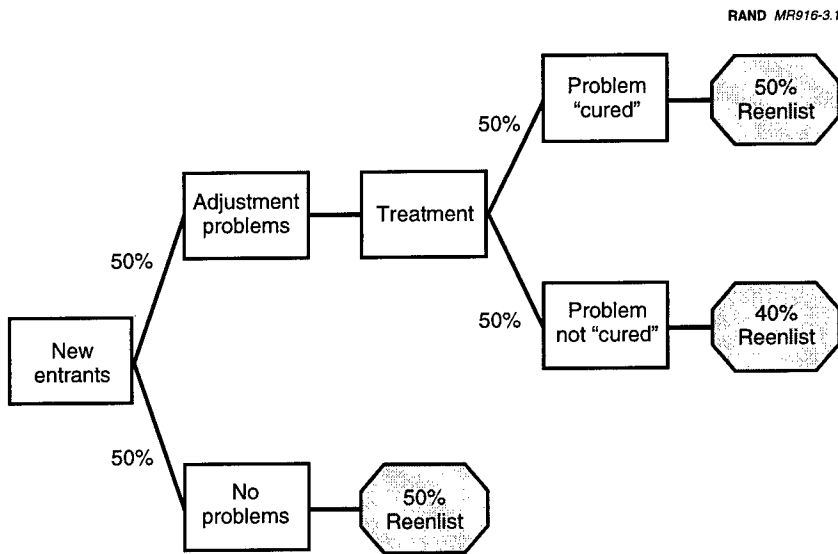


Figure 3.1—Hypothetical Example of the Relationship Between Use of a Personnel Support Program and Reenlistment

for one half, but the other half still has problems adjusting to military discipline and procedures. The “cured” group has reenlistment rates like the group with no problems (50 percent reenlist), but only 40 percent of the “not cured” group stays in the military.

Evaluate the effectiveness of the treatment program in Figure 3.1. If we compare the reenlistment rate of program users with those of nonusers, we see that program users have a reenlistment rate of 45 percent compared with 50 percent for nonusers. The inference is that the program is ineffective since users are less likely to stay than nonusers. But suppose that we eliminate the treatment program altogether. The average reenlistment rate without the program is 45 percent compared with 47.5 percent with the program. In this case, the comparison of reenlistment rates for program users and non-

users provides a misleading indication of the effectiveness of a support program.¹⁰

The second weakness of the retention and program usage approach is that a selectivity problem will occur if the members with the most serious problems or those most amenable to treatment are most likely to choose treatment. In this case, program effects will be overstated, since the program will help these members more than the average service member.

For example, the civilian literature on job training (Heckman and Hotz, 1989; Heckman and Robb, 1985) has shown that participants in job training programs are generally not representative of the poor, low-skill population that the programs are intended to serve. Rather, participants “self-select” into the program, so they tend to be motivated and more highly skilled than nonparticipants. As a result, voluntary participants in job training programs may achieve large earnings gains, but these training “effects” are not realized when the program is expanded to the broader underlying population—the estimated program effect overstates the true program effect on the at-risk population. A similar scenario is likely for military support programs; among members with marital problems, those who seek counseling might have a higher probability of resolving their problems regardless of the counseling effect.

Finally, as August (1996) acknowledges, even if the approach shows a positive relationship between program use and retention, this result could be misleading—members may use military support programs *because* they have a strong interest in reenlisting. Member enthusiasm might be reflected in greater use of MWR facilities or enrollment in self-help programs, since the member is anxious to fit into the military and reenlist. This reverse causation problem would result in inflated program effects, i.e., program users would show much higher retention rates than nonusers, but the differential would reflect a predisposition to stay in the military.

¹⁰The key assumption of this example is that the reenlistment rate for the “cured” population is no higher than the rate of nonusers. With this assumption, the reenlistment rate of users is always lower than for nonusers, as long as the program does not have a 100 percent success rate.

The inherent problems with this methodology make it difficult to translate any perceived relationship between retention and support programs into public policy. The relationship is distorted, so it is difficult to judge program effectiveness or to allocate funds efficiently.

Advantages and Disadvantages of the Retention and Program Use Approach

This research approach seems to offer little promise. Program use is an inherently poor measure of program success, because it is endogenous and beyond the control of decisionmakers. The military can increase or decrease program availability, but it has limited ability to control actual program use. Indeed, mandatory use would be inefficient and perhaps disruptive.

The military can increase (or reduce) opportunities to use fitness centers or counseling services; careful consideration should be given to the effect of such changes on military outcomes like retention. By systematically varying program opportunities, the military could assess the effectiveness of those programs directly. Some variation in programs is endemic to the current system, since program access varies from base to base or even from ship to ship in the Navy.¹¹ A complete study might require a controlled experiment.

BLENDING THE RESEARCH APPROACHES TOGETHER

The nonwage benefit, compensating differential, well-being, and community approaches can be integrated to form a complete and useful model for building and assessing a personnel support agenda. Although the retention and program use approach is flawed, the well-being and community approaches have great potential as barometers of emerging or ongoing problems.

¹¹Navy captains have the option of participating in return and reunion programs after a deployment. Some captains require members to attend these sessions, some allow voluntary participation, and some eschew them altogether. This allows the comparison of problems of returning sailors under the various scenarios. Of course, the analysis would need to control for other differences in the working environment on different ships that might be related to postdeployment problems.

These methodologies highlight groups or bases that are doing well or poorly, as well as how the military environment (e.g., deployments, relocations, high PERSTEMPO) affects personnel outcomes.

The economic tools of nonwage benefits and compensating differentials are more pragmatic components of the larger model:

- What problems are well-suited to military programs compared with member “self-help?”
- How should resources be divided between competing programs?
- How can program success be evaluated?

These issues are important for building a support agenda that efficiently addresses organizational goals.

The well-being research approach is useful for anticipating how changes in personnel policies and practices are likely to affect military members, so resources could be focused on problems before they fester. The community research approach could be used to highlight how programs contribute to the military community as a whole; programs could be structured to take advantage of community benefits as part of the implementation strategy.

The efficacy of existing programs should be evaluated by seeing how changes in program availability across bases or over time has affected various measures of member well-being and military outcomes. The appropriate policy question is whether expanding programs or facilities encourages either more members to participate in programs or more intensive use by existing participants, and whether this change in opportunities improves retention or some other military outcome. Such evaluations might be difficult without experimental variation in program availability.

An integrated theoretical framework would provide a better starting point for evaluating support programs, but a major impediment to such research is inadequate empirical data. The civilian literature provides little evidence regarding the cost-effectiveness of personnel support programs (Famulari and Manser, 1989). For example, EAP programs are available to over 50 percent of employees, but there has been no measurement of whether these programs are cost-effective. A key reason that EAP effectiveness has not been tested is

that data requirements for such a test are extensive. Civilian data on benefits are not comprehensive. The Bureau of Labor Statistics (BLS) conducts a regular Employee Benefit Survey (EBS), but the benefit categories (EAP, wellness programs, or recreation centers) provide insufficient information on either the availability or the cost of the service. In addition, this employer information cannot be linked with individual survey records for employees, so it is impossible to estimate trade-offs between wages and nonwage compensation.

As with civilian data, military data are insufficient to address the policy issues involved in building a personnel support agenda. The next chapter addresses the data issues and shows how military databases could collect information needed for the analysis of personnel support programs.

DATA REQUIREMENTS

This chapter analyzes support programs using an existing database. It suggests how future data collection efforts could be augmented to address QOL issues. The analysis relies on the 1992 DoD Survey, which is the most recent version of the large, multipurpose military personnel survey that is conducted periodically by the Defense Manpower Data Center (DMDC). The Survey had 59,930 active-duty respondents from the Army, Navy, Air Force, and Marine Corps.

The 1992 DoD Survey contains useful information about QOL issues, but the instrument was not tailored to address QOL research. Kerce (1995) and Burnam et al. (1992) were able to collect new data that specifically addressed their QOL research. As a result, the Survey treatment of QOL is less comprehensive than Kerce's survey of the Marines and Burnam's survey of the Army. An advantage of the 1992 DoD Survey, however, is that comparable information is collected for all four service branches. This allows comparison of general well-being and program use across services.

The remainder of the chapter is divided into three sections. The first examines the well-being of military members and assesses weaknesses in current data collection efforts. The second section examines members' program use, examines how usage rates vary with member characteristics and situations, and suggests better measures of program use. The final section examines the information on local program accounting (staffing, spending, services offered and delivered) and shows the role of this information in evaluation.

MEMBER WELL-BEING

As discussed earlier, most individuals are satisfied with their life in general. Diener and Diener (1996) show that most civilians rank their life satisfaction somewhere between seven and eight on a ten-point scale (where ten is happiest).

Figure 4.1 shows the satisfaction ratings for military members. As in civilian populations, most members are at least somewhat satisfied with their lives. Enlisted members tend to be less satisfied than officers, but “satisfied” is the modal response for both groups. About 76 percent of officers are at least somewhat satisfied with their lives compared with 55 percent of enlisted personnel.

The DMDC question on general satisfaction is less generic than the question used in civilian research. The DMDC question asks, “Taking all things together, how satisfied are you with the military

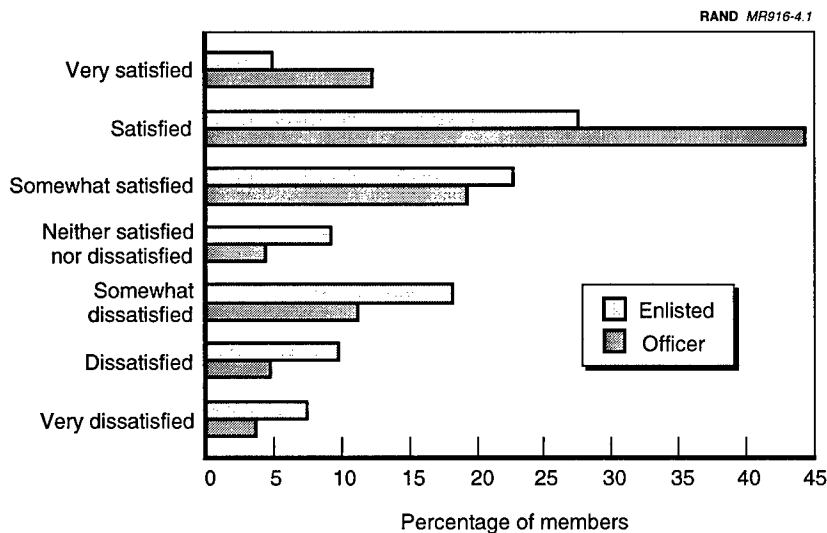


Figure 4.1—Overall Satisfaction with Military Life for Officers and Enlisted Personnel

way of life?" Emphasis on the military may draw disproportionate attention to job-related aspects of one's life situation, so the responses might not be strictly comparable to those of civilians.

How does member satisfaction vary within the military? Table 4.1 shows how demographic characteristics, family situation, and service factors affect general well-being.¹ Older members are slightly happier than younger members, and married members with their spouse present are more satisfied than single members. Single parents or members whose spouses are not currently with them are about as happy as single service members.

Member satisfaction differs across services and military rank. Junior enlisted personnel (E1-E4) are less satisfied than other members, and satisfaction increases with rank for both enlisted and officers. Army members are least happy with their lives, and Marines are the most satisfied. Members with an assignment in the continental United States (CONUS) are happier than those with an assignment outside the continental United States (OCONUS), but the difference is only .07 on a seven-point scale. Members who are deployed or on temporary duty (TDY) are less satisfied than members who are at their permanent duty location, but this difference is also negligible.

Taken as a whole, the results in Table 4.1 are similar to what we might expect for a civilian population. General well-being differs with an individual's demographics or current situation, but the differences are small. These modest differences probably reflect two factors: first, individual satisfaction is a stable measure and insensitive to short-term changes in the individual's life situation (Myers and Diener, 1995); second, service members, like civilians,

¹In other regression specifications, we reestimated the well-being equation with both ordered probit and ordered logit specifications. These procedures are technically more appropriate for this model; the independent variable takes on a small number of discrete values. The pattern of significance and relative magnitude of variables was similar to that for the standard linear model. The linear model has two important advantages over these nonlinear models. First, the regression coefficients are more readily interpretable in the linear model. Second, the linear regression approach is used in virtually all previous studies of well-being (Burnam et al., 1992), so our linear results are more readily comparable with those of earlier studies.

well-being index, and high levels of negative affect may lead to poor functioning in work and social settings.²

These new scale variables have distinct advantages for military research:

- The scales are designed to measure well-being more precisely than simple measures of life satisfaction.
- The measures are based on detailed prior research, so the military research could take advantage of previously developed measures.
- By using common measures, comparisons can be made between the well-being of military members and civilians. These comparisons would highlight whether various stresses were unique to the military or generic to a young, inexperienced workforce.

The scales also would make it much easier to isolate vulnerable military populations or situations. This new information could be used to customize programs to the needs of military members and assess the effectiveness of the programs. Of course, the scale measures might require adjustment or modification to account for inherent differences in measuring well-being and depression for military and civilian populations.

PROGRAM USE

The 1992 DoD Survey provides a comprehensive inventory of program use for military members. Members were asked whether they used any of twenty-four community and family support programs or any of twenty-three MWR programs.³ In addition to use, members

²The 1995 Survey of Health Related Behaviors used a similar depression screener (Bray et al., 1995). A set of questions was used to construct a composite indicator of respondents' "probable need for further assessment for depression." About 20 percent of military members met the criteria on the screener for depression.

³These programs are grouped somewhat differently in the Survey than in other places, and the Survey includes some programs that are not managed through the personnel support system. Childcare services are typically grouped with MWR activities at bases, but they are included with community and family support activities in the Survey. Chaplain services, legal services, and housing services are also included in the community and family support activities, but these services are not controlled by

Table 4.1

Regression Results for Factors Affecting Overall Satisfaction with the Military

Variable	All Members		Enlisted		Officer	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Age	0.008*	0.002	0.005*	0.002	0.010*	0.002
Some college	0.076*	0.020	0.040	0.022		
College	-0.064	0.035	-0.082	0.042		
Female	0.067*	0.017	0.152*	0.023	-0.015	0.024
Black	-0.046*	0.020	-0.030	0.024	-0.058	0.037
Hispanic	0.032	0.028	0.091*	0.034	-0.064	0.049
Married, spouse present	0.152*	0.023	0.181*	0.034	0.073*	0.033
Married, spouse absent	-0.049	0.032	-0.051	0.043	-0.068	0.049
Single parent	0.029	0.031	0.053	0.040	-0.085	0.054
Number of children	-0.026*	0.008	-0.031*	0.011	-0.019	0.011
Child < 5 yrs old	0.034	0.018	0.074*	0.025	-0.028	0.027
Spouse in military	-0.083*	0.025	-0.135*	0.034	-0.023	0.037
Spouse employed	-0.008	0.019	0.026	0.028	-0.045	0.028
Rent	-0.030	0.017	0.021	0.022	-0.131*	0.027
Own home	-0.036	0.020	0.062*	0.029	-0.143*	0.027
Navy	0.130*	0.019	0.095*	0.028	0.154*	0.026
Marine Corps	0.263*	0.021	0.189*	0.029	0.359*	0.032
Air Force	0.201*	0.019	0.295*	0.027	0.091*	0.026
Enlisted, E5-E6	0.579*	0.025	0.584*	0.029		
Enlisted, E7-E9	0.918*	0.035	0.950*	0.044		
Officer, O1-O3	0.991*	0.038				
Officer, O4-O9	1.147*	0.045			0.139*	0.029
Warrant officer	0.973*	0.051			0.002	0.047
CONUS	0.072*	0.017	0.054*	0.023	0.110*	0.025
Deploy or TDY	-0.123*	0.023	-0.139*	0.031	-0.093*	0.035
Constant	3.653*	0.046	3.655*	0.064	4.694*	0.072

NOTE: The data are based on a sample of 55,199 service members in the 1992 DoD survey. *Statistically different from zero at the 95 percent confidence level.

compare their life situation to a social norm or comparison group, and judge their life situation relative to others in comparable circumstances.

In addition to general satisfaction, the 1992 DoD Survey asks questions about the member's satisfaction with various aspects of military life (see Table 4.2). These additional questions provide informa-

Table 4.2
Relationships Between Overall Satisfaction and Satisfaction
with Particular Aspects of Military Life

Quality of Life Issue	Partial Correlation Coefficient
Personal freedom	0.2167
Acquaintances/friendships	0.0126
Work group/coworker	0.0310
Assignment stability	0.0219
Pay and allowances	0.0938
Environment for families	0.0572
Frequency of moves	0.0319
Retirement benefits	0.0738
Opportunity to serve one's country	0.1185
Satisfaction with current job	0.1772
Promotion opportunities	0.0712
Job training/in-service education	0.0367
Job security	0.0349
Working/environmental conditions	0.0802

NOTES: The partial correlation coefficient shows the correlation between the individual's global satisfaction and satisfaction with each issue, while holding constant satisfaction with other issues.

All coefficients are significantly different from zero at the 95 percent confidence level.

tion on how a member's service programs or policies affects his or her overall satisfaction. The strongest predictors of overall satisfaction are satisfaction with personal freedom in the military and satisfaction with the current job.

The Kerce (1995) and Burnam et al. (1992) studies have better indicators of general well-being than the 1992 DoD Survey. Kerce used six distinct measures of member satisfaction with life as a whole. These measures were developed in carefully conducted civilian studies and applied to the military population. Burnam applied a civilian-based measure of general well-being, as well as a depression scale that was developed from mental health research. Measures of negative affect such as the depression screener would be particularly useful for future research; such measures identify different attributes from the

well-being index, and high levels of negative affect may lead to poor functioning in work and social settings.²

These new scale variables have distinct advantages for military research:

- The scales are designed to measure well-being more precisely than simple measures of life satisfaction.
- The measures are based on detailed prior research, so the military research could take advantage of previously developed measures.
- By using common measures, comparisons can be made between the well-being of military members and civilians. These comparisons would highlight whether various stresses were unique to the military or generic to a young, inexperienced workforce.

The scales also would make it much easier to isolate vulnerable military populations or situations. This new information could be used to customize programs to the needs of military members and assess the effectiveness of the programs. Of course, the scale measures might require adjustment or modification to account for inherent differences in measuring well-being and depression for military and civilian populations.

PROGRAM USE

The 1992 DoD Survey provides a comprehensive inventory of program use for military members. Members were asked whether they used any of twenty-four community and family support programs or any of twenty-three MWR programs.³ In addition to use, members

²The 1995 Survey of Health Related Behaviors used a similar depression screener (Bray et al., 1995). A set of questions was used to construct a composite indicator of respondents' "probable need for further assessment for depression." About 20 percent of military members met the criteria on the screener for depression.

³These programs are grouped somewhat differently in the Survey than in other places, and the Survey includes some programs that are not managed through the personnel support system. Childcare services are typically grouped with MWR activities at bases, but they are included with community and family support activities in the Survey. Chaplain services, legal services, and housing services are also included in the community and family support activities, but these services are not controlled by

were asked about their satisfaction with community and family support programs (for users only) and the importance of MWR programs.

Use is assessed by whether the members ever used the service or program at their present permanent duty location. This definition has three important limitations. First, it does not account for frequency or intensity of use; regular users would presumably benefit more from a program than infrequent users, but the 1992 DoD Survey does not distinguish between these groups. Second, use depends on time at one's current location. The average survey respondent had been at his or her current location only 18 months. Therefore, usage rates are distorted because new arrivals have lower usage rates than earlier arrivals, since they have had fewer opportunities to use some programs. Third, members may have civilian alternatives for many of the military programs; nonusers were not necessarily members who did not need or want the activity. For example, nonusers of military fitness centers may choose a civilian alternative that is more convenient or less crowded.⁴

The analysis uses two models to adjust program use for the member's time at the current location: the Kaplan-Meier and Cox regression models. The Kaplan-Meier model (Lawless, 1982) adjusts program use measurement for the time that an individual has been assigned to a particular base. This adjustment accounts for the increasing likelihood that the member will use programs the longer he or she is assigned to a base. Measuring usage rates across members without consideration for disparate base tenures can be misleading.

The Cox regression model (Lawless, 1982) is a more complex method for adjusting program usage rates according to tenure at a given base. This multivariate regression approach adjusts for individual characteristics that affect program use by dividing the underlying "risk" of program use into two parts: The first is a baseline risk and

community and family support management. Our analysis leaves programs in the groups defined by DMDC and reports all programs.

⁴The usage measure is problematic for both user and nonusers. Some nonusers may not be interested in the support program or not need it at this time. Others may need the service, but they may believe that they will receive better service in the civilian sector. Similarly, some users may have tried a program once and quit.

the second is a function of individual characteristics (x_1, \dots, x_k). Let the instantaneous usage function be represented as

$$h(t) = h_0(t) \exp(b_1x_1 + \dots + b_kx_k)$$

where $h_0(t)$ is a common baseline risk function that applies to all members; b_1, \dots, b_k are a set of shift parameters that move $h(t)$ upward or downward in all periods; and t is the number of months that the member has been at their present base. The Cox regression model assesses how member characteristics such as age, gender, and rank affect the likelihood of program use.

The Cox model is proportional in that the effect of a particular variable such as gender is assumed to shift the attrition risk in proportion across all time periods. For example, if men were 5 percent more likely to use the fitness center than women, the assumption that risk is proportional would restrict the predicted effect to being 5 percent higher in the first quarter of service and for each successive quarter.

The advantage of the Cox approach over the Kaplan-Meier approach is its ability to hold many factors constant. A potential weakness of the formulation is the possibility that the relative effects of some variables might change over time. Our Kaplan-Meier analysis provided evidence that the data do not conflict with the proportionality assumption.

Community and Family Support Programs

Table 4.3 shows the predicted two-year usage rate for community and family support programs as well as the average user satisfaction with these programs. The four most-used programs are housing (33 percent), legal assistance (30 percent), family support center (23 percent), and chaplain (23 percent). The much lower usage rate of other programs reflects that the programs address a specific problem, whereas the family support center is an umbrella organization for various services.

Many members have not used community or family support programs, and others only a few; the median number of programs used

Table 4.3
Community and Family Support Programs:
Usage Rates and User Satisfaction

Program or Service	Percentage Use	User Satisfaction (five-point scale)
	After Two Years at Location	
Family Support Center	22.58	4.07
Individual counseling	6.49	3.70
Marriage and family counseling	4.81	3.60
Separation/deployment services	7.58	3.80
Chaplain services	22.58	4.12
Parent education	4.39	4.05
Youth programs	11.58	4.01
Childcare	19.79	3.65
Financial counseling	7.15	3.85
Single-parent programs	4.82	3.92
Premarital programs	1.80	3.91
Services for special needs	1.69	3.75
Crisis referral services	1.78	3.71
Spouse employment services	15.93	2.88
Spouse/child abuse programs	1.52	3.22
Alcohol/drug programs	3.68	3.76
Rape counseling services	0.64	3.58
Legal assistance	30.12	4.02
Relocation assistance	9.36	3.73
Information/referral services	13.32	3.91
Stress management programs	3.99	3.79
Suicide prevention programs	1.59	3.79
Transition assistance program	5.94	3.97
Housing office services	33.37	3.50

NOTES: In several cases, usage rates were computed for the subset of the population that was eligible to use the program and not for all service members. Parent education and youth/adolescent programs were restricted to members with children. Childcare use was based on service members with a child less than five years old. Single-parent programs were restricted to unmarried members with children. Premarital programs use was measured for single members only. Spouse employment and spouse/child abuse program use was based on married members.

is two. About 25 percent of members have used none. The usage rate rises with time at the base, but the increase is small; 21 percent of those who have been at the base for more than two years have not used any community and family support program, compared with 29 percent of members who have been at the base for less than two years. Twenty-five months was the median time at a base in the 1992 survey.

User satisfaction is high for most programs. These high satisfaction levels reflect some self-selection bias—i.e., members who are prone to be dissatisfied may choose not to participate. Spouse employment services is the only program that generally is rated less than satisfactory; military spouses frequently have difficulty finding employment after a move, and members are dissatisfied with program assistance results. Users are also critical of spouse and child abuse programs. Finally, the housing office is given relatively low satisfaction marks; long waiting lists for military housing and poor information on local rentals are common complaints.

Members are most satisfied with chaplain services, family support, parent education, youth programs, and legal assistance. The parent education program is very lightly used (only 4 percent of those surveyed), but those users were satisfied with the program.

Tables 4.4–4.6 show how program use differs across demographic characteristics, family situations, and service factors. The comparison groups for the regression are single nonparent, White non-Hispanic, male, no child less than 5 years old, on-base, Army, enlisted in grade E1–E4, OCONUS, and not currently deployed or TDY. For example, in the tables below, we compare the usage of Blacks and Hispanics with those of the reference category of White non-Hispanics. The data come from the 1992 DoD Survey, and the sample size is 53,230. Complete regression coefficients and standard errors are reported in the Appendix.

The tables report the odds that a member with a specific characteristic will use the program, while holding constant other factors. For example, Table 4.4 shows that the odds of a Navy member using the family support center is 1.28 times that of an Army member (the reference category), while holding constant the mix of demographics and other factors. We know from Table 4.3 that the average probability of using the family support center is 23 percent. Therefore, Navy use is predicted to be about 6 percentage points higher (0.28 times 0.23) than Army use.

Demographic characteristics have a consistent effect on use across most programs. Other things being equal, older members are more self-reliant and less likely to use community and family support programs. Members with either some college or college degrees are

more likely to use programs than members with no college. Female members have much higher program usage rates than males; for example, women are 1.8 times more likely than men to use individual counseling and stress management programs. Usage rates also differ by ethnicity: Blacks have usage rates about 30 percent higher than white non-Hispanics for most programs. Hispanics have higher usage rates than white non-Hispanics for about half the programs.

The members' marital/family situation also had an important bearing on program use. Members were categorized as single nonparent, single parent, married spouse present, and married spouse absent.⁵ Married members are much more likely than single members to use family support, marriage and family counseling, separation/deployment, special needs, legal, relocation assistance, information/referral, and housing. Among married members, the spouse-absent group has a much higher use rate than the spouse-present group. These separated family members are much more likely than other married members to use individual counseling, marriage and family counseling, and financial counseling.

Among single members, single parents have higher program use than single nonparents. The program usage pattern for single parents mirrors that of married members and diverges sharply from that of single nonparents. Controlling for other factors, single nonparents have the lowest usage rates for most programs.

Program use differs with the number and ages of children. Use of services like separation/deployment, youth programs, and relocation services increase with the number of children, but members with large families also use more counseling services for individual, marital, financial, and stress problems. Members with young children have lower usage rates for several counseling programs.

Increasing numbers of spouses are employed in the labor force, and these changes in spouse employment patterns affect the demand for support programs. About 11 percent of spouses are employed full time in the armed forces, and 31 percent are employed full time in a civilian job. Members with working spouses have usage rates about

⁵About 13 percent of married members are living separately from their spouse at their current permanent duty location.

Table 4.4
Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 1

Variable	Family Support Center	Individual Counseling	Marriage and Family Counseling	Separation/Deployment Services	Chaplain Services	Parent Education	Youth Programs	Childcare
Age	0.99		0.97		0.98	0.98	0.98	0.99
Some college	1.22		1.13	1.16	1.24	1.39	1.39	1.12
College	1.38		1.17	1.33	1.50	1.61	1.57	1.17
Female	1.38	1.77	1.10		1.23	1.44	1.56	1.53
Black	1.26	0.79		1.28	1.24	1.51	1.15	1.29
Hispanic	1.12	0.88		1.15	1.24			1.10
Married, spouse present	1.78	0.88	2.33	1.59		0.84	1.20	
Married, spouse absent	2.02	1.66	4.30	1.97	1.25			
Single parent	1.56	1.32	2.86	1.15				
Number of children	1.08	1.19	1.17	1.05	1.02		1.25	
Child < 5 yrs old	1.06	0.87	0.91	0.92		1.17	0.58	
Spouse in military	0.88		1.38		1.08	1.18		1.28
Spouse employed	0.82	0.89		0.79	0.83		0.80	
Rent	0.88	0.87		0.89	0.74	0.84	0.57	0.76
Own home	0.52	0.62	0.68	0.66	0.48	0.60	0.29	0.49
Navy	1.28	1.46	1.62	1.14	1.20	1.22	1.15	1.24
Marine Corps	0.86		1.26		1.07			
Air Force	0.90	0.63	0.64	0.49	0.75	0.61	0.89	0.86
Enlisted, E5-E6	0.93	0.74	0.88		0.80		1.97	1.21
Enlisted, E7-E9	0.92	0.60	0.69	0.83	0.88		2.21	
Officer, O1-O3		0.54	0.71		1.42		2.84	1.95
Officer, O4-O9		0.46	0.65		1.51	0.59	3.24	1.98

Table 4.4—continued

Variable	Family Support Center	Individual Counseling	Marriage and Family Counseling	Separation/Deployment Services	Chaplain Services	Parent Education	Youth Programs	Childcare
Warrant officer		0.52	0.69				3.00	1.69
CONUS	0.63	0.84	0.78	0.75	0.68	0.56	0.62	0.66
Deployed or TDY				1.28				
Overall satisfaction		0.92		0.93	1.03			1.02

Table 4.5
Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 2

Variable	Financial Counseling	Single-Parent Programs	Premarital Programs	Special Needs Services for Referral	Crisis Services	Spouse Employment Services	Spouse/Child Abuse Programs	Alcohol/Drug Programs
Age	0.96	0.96	0.94	1.02	1.02	0.97		
Some college						1.21		0.77
College				1.41		1.34		
Female	1.38	2.36		1.52	1.42	1.34	1.73	0.79
Black	1.55				1.33	1.52	1.31	
Hispanic			1.49					
Married, spouse present				3.06		1.80		0.61
Married, spouse absent	1.57			2.63	1.53		1.88	
Single parent	1.31			2.14				
Number of children	1.15			1.37	1.15		1.18	
Child < 5 yrs old						0.81		0.80
Spouse in military	0.76			0.55		0.07		
Spouse employed	0.89			0.54	0.72	1.22	0.77	
Rent				0.81		0.86		0.87
Own home	0.59	0.52		0.52	0.61	0.44	0.57	0.58
Navy	1.68	1.56		0.76	1.37	0.90	1.39	1.63
Marine Corps				0.53		0.72		
Air Force	0.70		0.58	0.48	0.48	0.59	0.34	0.35
Enlisted, E5-6	0.61			0.69				0.66
Enlisted, E7-E9	0.38			0.49				0.50
Officer, O1-O3	0.40			0.47		1.16		0.45
Officer, O4-O9	0.18			0.39				0.39

Table 4.6
Regression Results of Factors Affecting the Use of Community and Family Support Programs: Part 3

Variable	Rape Counseling Services	Legal Assistance	Relocation Assistance	Information/Referral Services	Stress Management Programs	Suicide Prevention Programs	Transition Assistance Program	Housing Office Services
Age		0.98	0.99	0.99			1.04	0.98
Some college	0.76	1.24	1.32	1.31			1.19	1.14
College		1.32	1.49	1.49			1.34	1.22
Female	1.56	1.22		1.23	1.77		1.20	1.16
Black	1.39	1.07	1.36	1.38	1.27	1.38	1.15	1.13
Hispanic	1.54		1.12	1.27				
Married, spouse present	0.71	1.26	1.63	1.22	0.85	0.69	1.44	1.78
Married, spouse absent		1.65	1.88	1.42	1.32	1.32		1.80
Single parent		1.29	1.21					1.44
Number of children			1.05	1.04	1.05	0.80	1.05	
Child < 5 yrs old	0.74				0.88		0.90	
Spouse in military			0.75	0.90			0.89	0.88
Spouse employed		0.86	0.76	0.84		0.77		0.82
Rent		0.94	1.23		0.84			
Own home	0.69	0.68	0.67	0.57	0.61	0.64	0.69	0.48
Navy		1.11	1.43	1.21	1.42	1.20	0.86	1.30
Marine Corps	0.70		0.89	0.92	0.67			
Air Force	0.26	0.84	0.76	0.60	0.56	0.24	0.53	0.90
Enlisted, E5-E6	0.61		1.41			0.80	0.73	1.26
Enlisted, E7-E9	0.47		1.29				0.65	1.37
Officer, O1-O3	0.47	1.45	1.81	1.15	0.71		0.84	2.12
Officer, O4-O9	0.27	1.52	1.62		0.59	0.49	0.76	2.12

Table 4.6—continued

Variable	Rape Counseling Services	Legal Assistance	Relocation Assistance	Information/ Referral Services	Stress Management Programs	Suicide Prevention Programs	Transition Assistance Program	Housing Office Services
Warrant officer	0.33	1.29	1.54	0.43	0.43	0.48	0.64	1.79
CONUS	0.79	0.69	0.76	0.68	0.74	0.66	0.77	0.71
Deployed or TDY	1.40	1.06	1.14					
Overall satisfaction			0.98	1.01	0.95	0.93	0.85	1.01

20 percent lower than those of members with nonemployed spouses. The lower usage rates occur in counseling services as well as large service programs like separation/deployment, legal, and housing services. These lower usage rates may reflect lower program needs in these families or a greater focus on nonmilitary programs to meet those needs. As expected, the employed-spouse group has a 22 percent higher use of spouse employment services.

Families with military spouses have a mixed effect on usage rates, as those families show inconsistent usage patterns. Members with military spouses are 10 to 12 percent less likely to use family support centers, financial counseling, and housing services.⁶ These families have better access to military childcare, so it is not surprising that their childcare use is 28 percent higher than families with nonemployed spouses. Joint military families are 38 percent more likely to use marriage and family counseling services than other military members.

Program use is much higher among members who live in military housing than for members living in civilian housing; renters have usage rates about 10 to 15 percent lower than members in military housing. Homeowners are 30 to 40 percent less likely to use support programs than members in military housing. These lower usage rates have important implications for the staffing and cost of support programs, since 33 percent of members rent and another 18 percent own their homes.

Why are renters and homeowners less likely to use support programs? The answer is difficult to sort out with current data. One possible explanation is that the renter and homeowner groups are underserved. Renters and homeowners may have less program access than members in military housing, since programs are typically on-base or in military housing areas. Because access is more difficult, renters and homeowners may forgo some "needed" programs or possess limited information about them. Support managers organize outreach efforts to inform off-base members of military programs, but often with limited success.

⁶Joint military couples are eligible for two military housing allowances and are unlikely to exchange these allowances for military housing.

Renters and homeowners may have fewer needs for programs. Off-base members may inherently have few problems, or may be integrated into a functioning civilian community. For some members, local community life may be a respite from the pressures of military life. Also, civilian neighborhoods may provide support and a healthy community atmosphere for these families. Alternatively, renters and homeowners may have similar problems to those in military housing, but also may have alternatives to military support programs; civilian communities often have a wide range of support activities.⁷

Residential housing choices may also reflect how members value support programs. Members have some discretion in choosing military housing versus civilian housing, but many in civilian housing are on waiting lists for military housing. Some in civilian housing may have chosen that alternative in part because they did not need or want military support services; others may prefer military housing because it provides greater access to support programs. If members have chosen their housing based on expected use of support programs, then greater outreach to off-base members will do little to program use.

Community and family support program use differs markedly across service branches after controlling for other factors. Navy use is at least 20 percent higher than the Army's for most programs. Air Force use is much lower than the Army's. For example, family support use is 28 percent higher in the Navy than in the Army, while use in the Marine Corps and Air Force is 14 and 10 percent lower than in the Army. Similarly, if we consider relocation assistance, Navy use is 43 percent higher than the Army, whereas Marine Corps and Air Force use is 11 and 24 percent lower than the Army's. It is unclear whether these differences reflect the extent of problems, access to programs, or the nature of the programs.

Comparable members have much different counseling use across services branches. Individual counseling is 43 percent more common in the Navy than in the Army or Marine Corps, while individual counseling is 37 percent less likely in the Air Force than in the Army or Marine Corps. Similarly, financial counseling is used by 68 per-

⁷Many off-base members are on waiting lists for base housing, but Ackerman et al. (1997) show that most off-base members prefer living in civilian housing.

cent more sailors than soldiers or Marines, while airmen are 30 percent less likely to use financial counseling than soldiers or Marines.

Do sailors need more counseling services than other members? Alternatively, does the Navy reach at-risk members that are not served in other military branches? In part, the Navy mission is complicated by long sea deployments that are disruptive to families and create additional stress.⁸ The regressions control for whether the member is currently deployed, but Navy members are more likely than other members to face future deployments. Indeed, one reason why deployment programs are more widely used in the Navy is that long deployments are more common.

Another viable explanation for differences in counseling rates is the structure of the programs. Counseling and family advocacy (spouse and child abuse programs) are provided through the family support centers in the Navy and Marine Corps, but the Army and Air Force offer these programs through mental health services. Many members are reluctant to seek counseling through mental health because they attach a stigma to such treatment or because they are concerned about their military records. Counseling through the family support center is potentially more informal, so counseling participation is generally not reported through the chain of command.

These differences between the branches mean that sailors and Marines may get counseling for relatively minor problems that airmen or soldiers would not pursue through the mental health professionals. This early access in the Navy and Marines may help resolve problems before they escalate. In any event, higher counseling rates for the Navy and Marine Corps are predictable because of the institutional differences. It is unclear which approach is best, however, since little information is available on which members need counseling or how successful counseling is.

Officers and senior enlisted personnel are much more likely than junior enlisted personnel to use service programs. E5–E9 personnel

⁸The regression also controls for whether members are currently deployed or TDY. At the time of the Survey, the percentages of members deployed or TDY are 16, 28, 17, and 11 for the Army, Navy, Marine Corps, and Air Force, respectively.

are twice as likely as E1–E4 personnel to use youth services, and officers are about three times as likely as junior enlisted personnel to use this program. Childcare use is twice as high among officers as among enlisted personnel. Relocation programs are used about 30 and 70 percent more by E5–E9 and officer personnel than by junior enlisted personnel. Similarly, housing office use is 30 percent higher for mid- and senior-grade enlisted personnel than for junior enlisted, while officers are more than twice as likely to use the services as junior enlisted.

Junior enlisted personnel use counseling programs more than other personnel. Individual counseling is 26 percent lower for mid-grade enlisted personnel than for junior personnel; use is lower for senior enlisted personnel and lowest for officers. Financial counseling rates are 39 percent lower for mid-grade enlisted personnel than for junior members, and the rate is much lower yet for senior enlisted personnel and officers. Higher counseling usage rates for junior enlisted personnel do not necessarily mean that this group has more problems; senior enlisted members and officers may be more reluctant to seek counseling than junior enlisted members because the former are concerned that participation may have an adverse effect on their careers.

As expected, program use is much lower among members with CONUS assignments than for those with OCONUS assignments. Foreign assignments inherently isolate members from extended family and social support networks, so they may face more problems in adjusting to stress than CONUS members. In addition, language and cultural differences may limit nonmilitary program alternatives at many locations. The usage rates of military programs are about 25 to 40 percent lower for CONUS members than for others, even after controlling for other factors in the regression model.

Program use is weakly related to whether the member is currently deployed or TDY. These members are about 30 percent more likely to receive deployment services than others, but typically use programs about the same as nondeployed members.

The final variable in the regression model is member well-being or satisfaction. Other things being equal, members who are more satisfied with their lives would seem less likely to use problem-

oriented support programs such as counseling. This hypothesis generally is supported, but that propensity is negligible.

Note in Tables 4.4–4.6 that blank entries indicate that the coefficient is not significantly different from zero.

MWR Programs

Table 4.7 shows that the usage rate for MWR programs differs widely across programs. The programs predicted to be used most by members who have been on-base two years are the main exchange

Table 4.7
Morale, Welfare, and Recreation Programs:
Usage Rates and Importance

Program or Service	Percentage Use After Two Years at Location	Program Importance (five-point scale)
Bowling	40.40	3.04
Golf courses	18.39	2.85
Marinas	11.69	2.87
Stables	6.08	2.68
Fitness centers	50.54	4.31
Youth activities	21.55	3.51
Libraries	43.18	4.12
Arts and crafts center	19.04	3.34
Tours and tickets	37.82	3.91
Recreation gear issue	32.19	3.74
Main exchange	56.17	4.49
7-Day Store/Shoppette	52.55	4.29
Clubs	45.14	3.59
Temporary lodging facilities	33.06	4.04
Cabins, cottages, and cabanas	9.24	3.26
Laundry/dry cleaning	44.10	3.90
Photo hobby shop	11.29	2.95
Auto repair centers	31.52	3.66
Auto hobby shop	28.68	3.52
Rentals/equipment	25.99	3.49
Animal care clinics	13.55	3.35
Auto/truck rental	12.13	3.18
Commissary	54.03	4.61

NOTE: The usage rate for youth activities is based on the members who have children.

(56 percent), the commissary (54 percent), the 7-day store/shoppette (53 percent), and the fitness center (51 percent). MWR use is much higher than the use of community and family support activities, because many of the community and family support programs are designed to address problems that occur infrequently. Less than 1 percent of members have not used an MWR program at their current base, and the average number of MWR programs used is 11.

In addition to usage, the 1992 DoD Survey also collected information on how members evaluate the importance of MWR programs. The importance of an MWR program can reflect the availability of civilian alternatives, and members may rank an unused activity as important if it contributes to the military community. In general, the importance rankings mirror those of use, but with interesting exceptions. As with usage, the most important activities are the commissary, exchange, 7-day store/shoppette, and fitness center. Bowling is widely used at 40 percent, but MWR bowling has civilian alternatives and was not important. Golf courses are only used by 18 percent of members, but these members rate the activity as important, so it has more importance than is suggested by the usage rate.

MWR program use varied substantially with member characteristics and situations. Tables 4.8–4.10 show how the odds of program use vary according to member characteristics. The programs can be grouped into three broad classes:

- Services—main exchange; 7-day store/shoppette; temporary lodging; cabins, cottages, and cabanas; laundry/dry cleaning; rentals/equipment; animal care clinics; auto/truck rental; commissary; and housing office services
- Recreation—bowling, golf courses, marinas, stables, fitness centers, and recreation gear issue
- Leisure activities—arts and crafts, tickets and tours, clubs, photo hobby shop, auto repair centers, and auto hobby shop.

Demographics have similar effects on MWR use across programs, and the usage patterns are similar to those for community and family support programs. Use declines with age for nearly all programs. Better-educated members have much higher usage rates than members with only a high school diploma—usage rates are 20–30

Table 4.8
Regression Results of Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part I

Variable	Bowling	Golf Courses	Marinas	Stables	Fitness Centers	Youth Activities	Libraries	Arts and Crafts
Age	0.96	0.96	0.97	0.98	0.97	0.98	0.98	0.98
Some college	1.05	1.36	1.25	1.12	1.11	1.20	1.23	1.22
College		1.50	1.21		1.21	1.30	1.33	1.39
Female	1.04	0.57	0.90	1.34		1.29	1.08	1.17
Black	1.12	0.49	0.73	0.77	1.12	1.42	1.13	1.14
Hispanic		0.80			1.06	1.10	1.06	1.11
Married, spouse present	0.95		0.88		0.91	1.21	1.19	1.19
Married, spouse absent	1.14			1.19	1.13		1.21	1.30
Single parent	0.94	0.85	0.82		0.87	1.20	0.88	
Number of children	1.07	0.97		1.08		0.67	1.02	1.02
Child < 5 yrs old	0.81	0.93	0.85	0.83	0.90		0.90	0.89
Spouse in military		1.17	1.11			0.83		
Spouse employed	0.90	0.94	0.92	0.80	0.90	0.72	0.85	0.80
Rent	0.80	0.92	0.92	0.85	0.89	0.41	0.84	0.77
Own home	0.57	0.68	0.71	0.64	0.65	1.32	0.59	0.55
Navy	1.30	1.75	2.65		1.22	1.07	1.08	0.81
Marine Corps	1.10	1.58	2.80	1.85	1.11	0.79	1.04	0.62
Air Force	0.85	1.15		0.34	0.76	1.55	0.82	0.95
Enlisted, E5-E6	0.84			0.87	0.87	1.63	0.86	
Enlisted, E7-E9	0.89			0.78	0.92	1.96	0.88	1.15
Officer, O1-O3	1.07	2.47	1.75	1.26	1.30	2.15	1.21	1.61
Officer, O4-O9		2.85	1.71	1.35	1.45	2.02	1.32	1.62

Table 4.8—continued

Variable	Bowling	Golf Courses	Marinas	Stables	Fitness Centers	Youth Activities	Libraries	Arts and Crafts
Warrant officer		2.11	1.60		1.17	0.70	1.13	1.52
CONUS	0.70	0.85	0.72	1.16	0.81	1.07	0.72	0.60
Deployed or TDY				1.16		1.02		1.09
Overall satisfaction	1.03	1.04	1.05	1.02	1.02		1.01	1.01

Table 4.9
Regression Results of Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 2

Variable	Tours and Recreation		Main Exchange	7-Day Store/ Shoppette	Clubs	Temporary Lodging Facilities		Cabins, Cottages and Cabanas	Laundry/ Dry Cleaning
	Tickets	Gear Issue				Facilities	Cabanas		
Age	0.98	0.96	0.98	0.98	0.97	0.98			0.98
Some college	1.17	1.14	1.04	1.06	1.07	1.15		1.21	1.07
College	1.26	1.19	1.09	1.11	1.12	1.23		1.31	1.13
Female	1.12	0.87	1.04	1.04	1.03	1.06			1.09
Black	1.08		1.04	1.05	1.14	1.20		1.24	1.18
Hispanic	1.11	1.08				1.09			
Married, spouse present	0.96	0.91	0.95	0.94	0.88	1.08		0.91	0.87
Married, spouse absent	1.09	1.06	1.16	1.16	1.14	1.32			1.10
Single parent	0.94	0.86	0.87	0.88	0.90	0.94			0.86
Number of children		1.04			0.98	1.02		1.05	0.99
Child < 5 yrs old	0.90	0.85	0.94	0.94	0.93	0.95		0.93	0.92
Spouse in military	1.10	1.08			1.08			1.20	1.10
Spouse employed	0.94	0.93	0.89	0.87	0.91	0.83			0.91
Rent	0.95	0.86	0.95	0.90	0.86	0.93		0.85	0.85
Own home	0.67	0.65	0.69	0.65	0.64	0.59		0.68	0.60
Navy	1.64	1.83	1.34	1.23	1.47	1.30		1.61	1.39
Marine Corps	1.21	1.55	1.08	1.14	1.28	1.06		1.93	1.21
Air Force	0.82	1.04	0.76	0.79	0.89	1.04		0.77	0.82
Enlisted, E5-E6	0.93		0.85	0.86	0.84				0.83
Enlisted, E7-E9		1.09	0.91	0.92		1.14		1.20	0.93
Officer, O1-O3	1.47	1.53	1.26	1.28	1.56	1.84		1.63	1.28
Officer, O4-O9	1.67	1.57	1.41	1.42	1.84	1.84		1.79	1.48

Table 4.9—continued

Variable	Tours and Recreation		Main Exchange	7-Day Store/ Shoppette	Clubs	Temporary Lodging Facilities		Cabins, Cottages and Cabanas		Laundry/ Dry Cleaning
	Tickets	Recreation Gear Issue				Cabins	Cottages and Cabanas			
Warrant officer	1.32	1.33	1.11	1.13	1.38	1.56	1.40	1.14		
CONUS	0.76	0.72	0.83	0.79	0.74	0.80	0.52	0.71		
Deployed or TDY	1.04					1.09	1.10			
Overall satisfaction	1.02	1.04	1.01	1.01	1.03	1.01	1.02	1.03		

Table 4.10
Regression Results of Factors Affecting the Use of Morale, Welfare, and Recreation Programs: Part 3

Variable	Photo Shop	Hobby Shop	Auto Repair Centers	Auto Hobby Shop	Rentals/ Equipment	Animal Care Clinics	Auto/Truck Rental	Commissary
Age	0.99	0.97	0.98	0.97	0.97	0.98	0.98	0.98
Some college		1.11	1.11	1.13	1.15	1.22	1.09	1.04
College	1.26	1.17	1.20	1.17	1.20	1.25	1.16	1.10
Female	1.09	0.66	0.86	0.66	0.88	1.42		1.07
Black	1.90	1.28	1.33	1.28	1.14	0.63	1.56	1.05
Hispanic	1.51	1.11	1.15	1.11	1.14	0.92	1.31	
Married, spouse present	0.79	1.10	1.07	1.10		2.45		
Married, spouse absent		1.26	1.21	1.26	1.17	2.07	1.22	1.20
Single parent	0.81				0.93	1.37		0.89
Number of children		1.03		1.03	1.04	1.03		
Child < 5 yrs old	0.87	0.87	0.91	0.87	0.88	0.77	1.09	0.94
Spouse in military		0.94		0.94	1.08	0.86		
Spouse employed		0.88	0.89	0.88	0.92	0.77		0.88
Rent	0.84	0.84	0.85	0.84	0.83	0.74		0.95
Own home	0.60	0.56	0.56	0.56	0.63	0.53	0.61	0.69
Navy		1.42	1.42	1.87	1.50	0.86	1.54	1.32
Marine Corps	0.80	1.39	1.09	1.39	1.24	0.86	1.33	1.06
Air Force	0.56	1.22	0.84	1.22		0.76	0.78	0.77
Enlisted, E5-E6	0.69	0.89	0.93	0.89		1.19		0.86
Enlisted, E7-E9	0.67	0.90		0.90		1.24		0.92
Officer, O1-O3	0.77	1.32	1.32		1.43	1.72	1.16	1.28
Officer, O4-O9	0.62	1.30	1.30		1.29	1.70		1.42

Table 4.10—continued

Variable	Photo Hobby Shop	Auto Repair Centers	Auto Hobby Shop	Rentals/ Equipment	Animal Care Clinics	Auto/Truck Rental	Commissary
Warrant officer	0.79	1.18	1.14	1.25	1.43		1.12
CONUS	0.50	0.65	0.68	0.65	0.75	0.45	0.81
Deployed or TDY	1.24						
Overall satisfaction	1.03	1.02	1.01	1.03			1.01

percent higher in recreational and leisure activities, but only 5–10 percent higher in key service activities such as the exchange or commissary. Women tend to use different recreational programs than men (more use of bowling and stables, but less use of golf, marinas, and recreation gear issue), but they use leisure activities and services at higher rates than men. Recreational activities also vary substantially with ethnicity: Black members are twelve percent more likely to use the fitness center and much less likely to use golf courses, marinas, and stables than their white, non-Hispanic counterparts. Blacks and Hispanics are more likely than white non-Hispanics to use services and leisure-activity programs.

MWR use varies with marital status. The so-called geographic bachelors (members living separately from their families) are the heaviest users of MWR programs, with usage rates 20–30 percent higher for most programs than for single nonparents. The usage pattern for intact married couples and single parents is quite similar—use is generally 5–15 percent higher than for single nonparents. As expected, animal care clinics and the housing office are much less used by single nonparents, since many are restricted to living in barracks.

Family composition also affects program use. Members with children younger than five have usage rates that are 10–15 percent lower for recreational and leisure programs than for those without young children. Service use is about 5 percent lower for those with young children. Program use varies slightly with the number of children; members' use of youth activities declines sharply as their families grow. This may show that children in large families are expected to care for one another instead of participating in youth-activity programs.

As shown above, members with employed spouses are less likely to participate in support programs than one-wage families. MWR use is typically 10–15 percent lower in most programs when the spouse works outside the home. Families with employed spouses are 28 percent less likely to use youth activities than otherwise comparable families where the spouse does not work.

Members from joint military families have usage patterns similar to those of married members with nonemployed spouses. Joint military members tend to use certain recreational and leisure programs

at above-average rates (golf courses, marinas, recreational gear issue, tickets and tours, and clubs). Joint members use the commissary and exchange at the same rates as members with nonemployed spouses.

Several hypotheses may explain why MWR use differs with spouse employment status. First, spousal employment may mean that civilian alternatives are more convenient. The spouse is more integrated into the civilian community and is therefore more likely to find civilian alternatives for military support programs. Second, these families may face time pressures that make access to military programs more difficult. Finally, the higher income of dual-earner families means that they will purchase more and higher-quality services, because these families are wealthier than those with an unemployed spouse. This income effect will draw members with employed spouses into the civilian economy and away from MWR programs.

Other things being equal, the highest usage rates are associated with members who live in military housing, followed by those who rent, and finally by those who are homeowners. Homeowners have deeper roots in the local community, and are likely to have better knowledge and access regarding local community programs. Homeowners are about 40 percent less likely to use MWR programs than members who live in military housing; renters are about 10 percent less likely.

As with community and family support programs, the lower use of MWR programs by renters and homeowners may mean several things. First, renters and homeowners may have better civilian alternatives than members who live on-base and are somewhat isolated from the local civilian community. Second, renters and homeowners may have lower needs for MWR programs than members in military housing. The statistical model controls for many factors that affect program needs, but off-base members may be different in some unmeasured dimension than on-base members. Finally, on-base members may value MWR programs more than off-base members, so they may wait for available military housing precisely because it provides better access to support programs.

The usage rates of otherwise comparable members differ substantially from one service branch to another. Usage rates are generally

much higher in the Navy than in the other branches, and generally much lower in the Air Force. Marine Corps use resembles that of the Navy; Army use falls in the middle.

Navy use of the exchange, the commissary, and housing services is 30 percent higher than the use of comparable programs in other services. Air Force use of the exchange and commissary is about 25 percent lower than the Army, and housing service use is 10 percent lower in the Air Force than in the Army. The implication is that airmen are less than half as likely as sailors to use the exchange and commissary. Similarly, housing services are used about 45 percent less by airmen than by sailors. These wide differences are difficult to explain after controlling for residential housing patterns and member characteristics. It is unclear whether the Navy is providing better programs than the Air Force, whether airmen simply have better civilian alternatives for these programs, or whether some unidentified factor is involved.

Officers are much heavier users of MWR programs than junior enlisted personnel, and senior officers (O4–O9) are heavier users than junior officers (O1–O3). Junior and senior officers are 30 and 45 percent, respectively, more likely to use fitness centers than junior enlisted personnel. Use rate differences occur for libraries, exchange, shoppette, clubs, laundry/dry cleaning, and the commissary. Officer MWR use is about twice that of junior enlisted personnel for several programs, including golf (2.6 times greater), youth activities (2.1 times greater), temporary lodging (1.8 times greater), and housing services (2.1 times greater).

Among enlisted personnel, mid- and senior-grade personnel are generally less likely to use MWR programs than junior personnel. Usage rates for most MWR programs are 10–15 percent lower for E5–E9 personnel than for E1–E4 personnel. The main exceptions are that junior personnel are much less likely to use youth activities and the housing office than mid- and senior-grade personnel.

Members with a CONUS assignment are about 25 percent less likely to use MWR programs than members with an OCONUS assignments. OCONUS members have fewer civilian alternatives to MWR programs, so they are more likely to rely on MWR programs than their CONUS counterparts.

Deployed or TDY members use MWR programs at comparable rates with other members.

Member satisfaction is positively related to MWR use. Members who are more satisfied with life are more likely to use the recreational, leisure time, and services programs. The increase in use is negligible, however: a one point improvement in life satisfaction (measured on a five-point scale) only increases MWR program use by 1–5 percent.

Developing Better Measures of Program Use

Current databases have weaknesses that severely limit their usefulness in assessing personnel support programs. New data collection efforts should focus on five areas: the extent of member problems, program use, civilian alternatives to military programs, reasons for use of program alternatives, and the tracking of member use over time.

Extent of Member Problems. Current databases collect little information on member problems or on underlying interest in programs or services. Usage data provide very limited insight into whether programs are adequately addressing member problems. For example, greater background data would be important for addressing how well financial management programs are meeting member problems. Are programs reaching members with financial problems? Users are composed of several groups: supervisors order some to attend financial counseling,⁹ others voluntarily participate because of ongoing financial problems, and still others may want financial advice but have no immediate problems. A careful evaluation would require information on the extent of financial problems among program participants, since the success rate of the counseling program may vary across these groups.

Program Use Data. An important limitation of the 1992 DoD Survey is that program use does not include a measure of frequency. Some programs are used infrequently, whereas others may be used several times per week. Future surveys should collect this information.

⁹Burnam et al. (1992) reported that 23 percent of soldiers who used Army financial counseling programs were sent by their supervisors.

Frequency-of-use information should be collected for some fixed interval. For example, the survey should ask whether the member has used the fitness center in the past year and how many times per week he or she used it. Data on use "since arriving at this base" are difficult to interpret, since the probability of use is apparently tied to the time at the base.

Civilian Alternatives. Future surveys should include more information on civilian alternatives to military support programs. This information is needed to assess the underlying demand for these services. For example, the usage data showed that off-base members had much lower use of military programs than on-base members. Yet, it is unclear whether the off-base group is "underserved" or is receiving similar or preferred services in the civilian economy. With data on civilian program use, policy makers would be better able to understand whether programs should be adjusted for usage differences across various groups.

Reasons for Use of Program Alternatives. Better information is needed regarding why members choose a civilian or military program. These reasons help adjust the implementation of military programs. For example, if confidentiality was a factor in members choosing civilian counseling, then military counseling policies could be revised. Alternatively, if quality or convenience were the reasons for civilian preference, then other changes would be more appropriate.

Tracking Member Use over Time. A important improvement in usage data would be the accumulation of longitudinal data on military members and their families. Usage patterns may vary over time as local conditions change, or the member moves from base to base. Tracking members over time would allow a more complete accounting of individual-specific and military environmental factors affecting use.

LOCAL PROGRAM SPENDING AND WORKLOADS

Unified Base Accounting System

An important tool for tracking and assessing personnel support programs would be an accounting system that recorded how funds were

spent at individual bases and what they bought. A unified accounting system would provide information regarding what resources were available at different bases, how those resources were used, and how resourcing and use changed over time. These data would be useful to diagnose how local programs are changing, and would provide knowledge of how base support programs compare with one another.

The current budgeting system for personnel support funding is decentralized, so tracking program expenditures is difficult. Funds are frequently diverted at the major command or installation level (DoD, 1993). OSD has attempted to earmark funds for Family Advocacy, Relocation, and Transition programs, but other funds may be reprogrammed away from (or toward) the purposes specified in the Service budget.

Evidence shows that patterns of local expenditure on support programs vary widely, as do accounting practices. Bolten et al. (1996) examined expenditures at several Army bases and found that expenditures per soldier on support programs vary widely from base to base. For example, they found that annual library expenditures per soldier are \$11, \$22, and \$44 at Forts Hood, Carson, and Lewis, respectively. These differences suggest that local decisions may play significant roles in how resources are applied to particular programs. Significantly, they also reported that program costs are reported differently from base to base. For example, about 30 percent of the bases reported no expenditures for educational counseling; these bases had counselors, but the expenditures were apparently reported under different categories. Until uniform accounting procedures are implemented, expenditure rates on programs cannot be compared across bases.

These accounting problems are compounded by the practice of Defense Business Operating Fund (DBOF) procedures at some bases and not at others. DBOF procedures specify how to allocate costs across business units at a base. While these new accounting procedures may have great merit, they increase the difficulty of comparing program support costs across bases. Those bases that use DBOF procedures allocate base overhead costs across other functions, so their program costs will inappropriately appear higher than at bases that do not use DBOF procedures.

An additional problem with the cost data is that the costs do not include key elements like capital cost, depreciation, and land costs (Way-Smith, 1994). Comprehensive accounting for these costs, as well as for operating costs, is needed so that managers can better allocate funds between programs and evaluate potential for outsourcing program activities.

A new accounting system should also record how NAF money was spent. NAF support a large share of MWR, but these funds are not systematically reported in current accounts (Bolten et al., 1996). Bases in areas with a large retiree population have a comparative advantage in raising NAF funds through commercial MWR activities. A meaningful comparison of MWR programs across bases must include NAF and APF expenditures.

Program Availability and Workloads

Better information is needed both on program availability and member workloads across bases. A widespread impression, based on formal and informal observations, is that program facilities and access vary widely from place to place and over time. An important reason why program use may vary across bases is that members are offered substantially different products; for example, fitness facilities differ greatly from base to base, and some members are deterred by long queues at their facilities. A careful analysis of usage rates and program effectiveness requires information on specific program features offered.

Accurate recording of local workloads would provide a valuable accounting of what functions were performed at a specific base. Bases have inherent differences in local problems and contingencies, so they cannot be expected to perform the same functions. A database of workloads would provide important information on how bases adapt to local conditions and how program activities change as conditions (e.g., mission, deployment rates) change.

Local Conditions

As discussed earlier, specific information is needed on what conditions exist at a particular base that may affect the QOL or general

personnel environment. The information should include local demographics (number of families, single parents, geographic bachelors) and the work environment (deployments, PERSTEMPO, average work hours per week). This information would provide input for a "community index" that would describe local features or characteristics for each base.

Problems with Collecting Local Base Information

The measurement of local cost and workload is critical for evaluating personnel support programs, but this measurement also poses risks. A truism of management literature (Simons, 1995) is that this type of measurement will motivate program managers to devote too much time to producing anything that is measured. An initial reporting system should be designed to minimize the incentives to "game the system." Policymakers need fundamental information on activities and what they cost. So little information is currently available that it would be premature to assume that initial measures would be sufficient to capture all activities or all costs. Improving the initial measures would improve the collection of measures in the future.

As a more sophisticated data system is developed, the collection of base information would serve several goals. First, the system would provide a diagnostic tool for senior managers to assess current programs and consider new programs to meet emerging needs. This tool would also help the allocation of funds between programs and justify budget requests. Second, the tool would provide authorities with information on how changes in their programs could address local contingencies. A major result of inconsistent reporting is that local authorities cannot learn from the experiences of other bases. For example, if a major deployment occurs at a base, the local commander could benefit from detailed information on how similar bases adjusted support programs during a deployment.

**CONCLUSIONS AND DIRECTIONS FOR FUTURE
RESEARCH**

This report illustrates the complexity of designing an efficient personnel support agenda. It verifies the lack of a simple approach to designing programs or weighing their effectiveness. This complex issue will require several actions to derive a coherent personnel support agenda.

First, DoD must clearly specify its policy goals for the overall agenda and the operational goals or standards for specific problems. Second, DoD needs a more comprehensive research approach to identify the types of programs that can meet these goals and to evaluate their effectiveness. Finally, more data are required to assess the problems of military members and their families.

Evaluation of a particular program will also require careful analysis program implementation and support by the base community. Support programs are not simple entities that can be turned on or off; how a program operates will influence its success. An important aspect of any support program is its potential to reach members who need it. In some cases, members might be reluctant to participate in a program because they do not appreciate its efficacy. In other cases, members might avoid participation because others view the programs as ineffective or attach a stigma to them. A successful program must incorporate a workable implementation strategy for attracting users and a strategy for broadening community support for program participation. Program evaluation must address these concerns as well, since they will provide insights into why programs succeed or fail, and how program effectiveness can be improved.

Future work will address personnel support issues with many of the tools described in this study.

- **Improved data.** Two new types of data will be collected and analyzed. First, a recent RAND survey (the 1997 DoD Career Intentions Survey) has been designed to provide a more complete description of the use of some support programs. These data, along with the service's "leisure needs" surveys,¹ will be used to explain why program use varies across service branches, on- and off-base locations, and military pay grades. Second, a base-level survey is planned to collect information on base program activities and expenditures along with information about the base community. This information will be used to examine program availability and resource variation across bases, and will help compose a community index for military bases.
- **Understanding goals.** A set of base visits will clarify how base officials, program managers, and military members assess objectives for personnel support programs. These visits will be followed by meetings with senior personnel officials to unify the different actors in the support arena with a common direction and sense of purpose.
- **Evaluate specific programs.** Careful evaluation of a few specific programs is planned in order to clarify the activities that comprise analysis. The evaluation will involve several base visits and surveys of base program participants and nonparticipants.

These analyses and the methodological structure developed in this report will catalyze improved programs that address member problems more effectively, furthering overall military goals.

¹The leisure needs or needs assessment surveys are conducted every few years and include information on program alternatives in the local community, as well as reasons for not using military programs (Caliber, 1996).

COX REGRESSION RESULTS FOR PROGRAM USE

This appendix reports the coefficients and standard errors for the program-use regressions in Chapter 4. The results are based on a Cox regression that adjusts program use for how long the service member has been stationed at the current base.

The reference or comparison groups for the regression are single nonparent, White non-Hispanic, male, no child less than 5 years old, on-base, Army, enlisted in grade E1–E4, OCONUS, and not currently deployed or TDY. In several cases, program use was relevant for a subset of members and the comparison group was adjusted accordingly:

- Parent education, youth programs, childcare, and youth activities are only relevant for members with children, so the measurement of program use is restricted to the population of members with children. Childcare use is restricted to those parents with young children.
- Use of single-parent programs was based on the group of single members with children.
- Premarital program use was based on single members only.
- Spouse employment and spouse/child abuse program use was based on married members only.

Coefficients are marked not applicable (na) where the reference category was adjusted in accord with the appropriate population group. In addition, the number of warrant officers using premarital programs was too small (16 members) to estimate a coefficient in the

regression equation for their use of premarital programs, so this cell is also marked "na".

The analysis is based on the 1992 DoD Survey. The sample size is 53,230.

Table A.1
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Community and Family Support Programs: Part 1

Variable	Family Support Center		Individual Counseling		Marriage and Family Counseling		Separation/Deployment Services	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.015	0.002	0.000	0.003	-0.030	0.004	-0.005	0.003
Some college	0.197	0.023	0.067	0.038	0.118	0.045	0.148	0.042
College	0.319	0.037	0.090	0.065	0.161	0.079	0.288	0.065
Female	0.324	0.019	0.568	0.035	0.094	0.043	-0.059	0.036
Black	0.228	0.021	-0.235	0.040	-0.009	0.046	0.243	0.038
Hispanic	0.115	0.029	-0.123	0.056	0.051	0.062	0.138	0.053
Married, spouse present	0.574	0.029	-0.123	0.052	0.847	0.073	0.464	0.052
Married, spouse absent	0.704	0.037	0.508	0.061	1.458	0.081	0.680	0.065
Single parent	0.443	0.034	0.280	0.056	1.050	0.081	0.143	0.068
Number of children	0.079	0.008	0.173	0.015	0.154	0.017	0.044	0.014
Child < 5 yrs old	0.055	0.019	-0.139	0.037	-0.091	0.041	-0.084	0.036
Spouse in military	-0.130	0.026	0.029	0.049	0.323	0.055	0.043	0.049
Spouse employed	-0.204	0.021	-0.113	0.042	-0.088	0.046	-0.236	0.038
Rent	-0.133	0.018	-0.140	0.035	-0.067	0.041	-0.112	0.035
Own home	-0.656	0.022	-0.478	0.042	-0.384	0.048	-0.420	0.039
Navy	0.244	0.022	0.381	0.040	0.481	0.048	0.133	0.039
Marine Corps	-0.154	0.026	-0.053	0.046	0.232	0.051	0.077	0.041
Air Force	-0.108	0.020	-0.459	0.040	-0.446	0.049	-0.716	0.039
Enlisted, E5-E6	-0.075	0.027	-0.295	0.045	-0.133	0.054	-0.086	0.050
Enlisted, E7-E9	-0.079	0.038	-0.509	0.068	-0.366	0.081	-0.184	0.069
Officer, O1-O3	0.044	0.040	-0.623	0.074	-0.341	0.090	0.069	0.073

Table A.1—continued

Variable	Family Support Center		Individual Counseling		Marriage and Family Counseling		Separation/ Deployment Services	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Officer, O4-O9	-0.001	0.049	-0.774	0.091	-0.426	0.110	-0.140	0.089
Warrant officer	0.058	0.057	-0.661	0.116	-0.371	0.129	-0.159	0.100
CONUS	-0.465	0.018	-0.180	0.036	-0.244	0.042	-0.281	0.035
Deployed or TDY	-0.011	0.026	0.003	0.049	0.044	0.055	0.249	0.043
Overall satisfaction	-0.001	0.005	-0.085	0.009	-0.019	0.010	-0.077	0.008

Table A.2
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Community and Family Support Programs: Part 2

Variable	Chaplain Services		Parent Education		Youth Programs		Childcare	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.023	0.002	-0.019	0.006	-0.017	0.003	-0.009	0.004
Some college	0.214	0.024	0.331	0.067	0.329	0.043	0.114	0.038
College	0.408	0.038	0.476	0.104	0.448	0.060	0.155	0.067
Female	0.210	0.018	0.366	0.060	0.447	0.033	0.424	0.033
Black	0.215	0.020	0.412	0.056	0.136	0.035	0.256	0.033
Hispanic	0.216	0.028	0.030	0.088	-0.011	0.048	0.098	0.048
Married, spouse present	-0.014	0.025	-0.178	0.077	0.180	0.052	-0.020	0.047
Married, spouse absent	0.227	0.034	-0.044	0.102	na	na	-0.071	0.064
Single parent	-0.031	0.033	na	na	-0.006	0.064	na	na
Number of children	0.024	0.008	0.042	0.025	0.220	0.011	-0.017	0.014
Child < 5 yrs old	-0.024	0.020	0.158	0.057	-0.549	0.030	na	na
Spouse in military	0.078	0.026	0.165	0.077	-0.054	0.045	0.246	0.040
Spouse employed	-0.183	0.022	-0.071	0.062	-0.223	0.031	0.003	0.036
Rent	-0.298	0.018	-0.178	0.058	-0.570	0.033	-0.274	0.031
Own home	-0.737	0.021	-0.504	0.064	-1.234	0.034	-0.705	0.035
Navy	0.182	0.021	0.201	0.066	0.138	0.037	0.214	0.037
Marine Corps	0.069	0.023	-0.080	0.071	-0.024	0.039	0.020	0.039
Air Force	-0.286	0.020	-0.487	0.062	-0.111	0.032	-0.155	0.034
Enlisted, E5-E6	-0.224	0.027	-0.041	0.079	0.678	0.066	0.188	0.044
Enlisted, E7-E9	-0.127	0.038	-0.032	0.109	0.792	0.076	0.098	0.070
Officer, O1-O3	0.354	0.040	-0.193	0.124	1.042	0.082	0.670	0.075
Officer, O4-O9	0.411	0.048	-0.526	0.148	1.175	0.090	0.681	0.087

Table A.2—continued

Variable	Chaplain Services		Parent Education		Youth Programs		Childcare	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	0.098	0.056	0.083	0.155	1.097	0.093	0.523	0.100
CONUS	-0.389	0.017	-0.577	0.055	-0.472	0.029	-0.411	0.031
Deployed or TDY	0.033	0.025	0.049	0.076	-0.018	0.044	-0.055	0.045
Overall satisfaction	0.031	0.005	0.016	0.015	0.010	0.008	0.024	0.008

Table A.3
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Community and Family Support Programs: Part 3

Variable	Financial Counseling		Single-Parent Programs		Premarital Programs		Special Needs	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.040	0.004	-0.041	0.014	-0.064	0.016	0.015	0.006
Some college	0.053	0.042	0.203	0.137	-0.192	0.153	0.119	0.087
College	0.062	0.085	0.368	0.245	0.135	0.314	0.344	0.129
Female	0.324	0.041	0.861	0.145	0.139	0.122	0.420	0.075
Black	0.436	0.040	0.046	0.120	-0.132	0.159	0.107	0.080
Hispanic	0.094	0.063	0.043	0.199	0.402	0.188	-0.171	0.118
Married, spouse present	0.014	0.061	na	na	na	na	1.120	0.139
Married, spouse absent	0.450	0.073	na	na	na	na	0.968	0.170
Single parent	0.268	0.066	na	na	-0.562	0.318	0.760	0.153
Number of children	0.142	0.020	0.056	0.077	0.231	0.148	0.315	0.024
Child < 5 yrs old	-0.026	0.046	0.198	0.131	0.007	0.266	-0.126	0.070
Spouse in military	-0.268	0.061	0.137	1.007	1.207	1.006	-0.596	0.109
Spouse employed	-0.120	0.052	0.813	0.724	1.266	0.728	-0.614	0.079
Rent	-0.045	0.039	-0.126	0.120	-0.151	0.150	-0.213	0.073
Own home	-0.527	0.056	-0.648	0.190	-0.039	0.213	-0.658	0.080
Navy	0.521	0.048	0.447	0.158	0.020	0.165	-0.269	0.082
Marine Corps	-0.083	0.055	0.092	0.182	0.114	0.169	-0.635	0.097
Air Force	-0.363	0.050	0.006	0.145	-0.543	0.170	-0.728	0.074
Enlisted, E5-E6	-0.487	0.050	0.041	0.156	-0.109	0.193	0.149	0.113
Enlisted, E7-E9	-0.973	0.090	-0.128	0.265	-0.044	0.358	-0.118	0.144
Officer, O1-O3	-0.926	0.095	-0.226	0.302	-0.176	0.331	-0.386	0.160
Officer, O4-O9	-1.688	0.137	-0.426	0.389	-0.173	0.443	-0.231	0.179

Table A.3—continued

Variable	Financial Counseling		Single-Parent Programs		Prenatal Programs		Special Needs	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	-1.698	0.220	-0.239	0.621	na	na	-0.289	0.207
CONUS	-0.146	0.042	-0.615	0.129	-0.508	0.130	-0.520	0.069
Deployed or TDY	-0.023	0.057	0.014	0.181	-0.253	0.204	0.231	0.090
Overall satisfaction	-0.004	0.011	-0.029	0.032	0.047	0.035	-0.048	0.018

Table A.4
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Community and Family Support Programs: Part 4

Variable	Crisis RefErr.al		Spouse Employment		Spouse/Child Abuse		Alcohol/Drug	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	0.017	0.007	-0.027	0.003	0.005	0.010	0.006	0.006
Some college	-0.128	0.082	0.192	0.040	-0.008	0.112	-0.257	0.061
College	0.052	0.140	0.292	0.062	-0.198	0.200	-0.217	0.114
Female	0.353	0.077	0.292	0.032	0.548	0.109	-0.240	0.060
Black	0.284	0.079	0.416	0.035	0.273	0.109	-0.003	0.066
Hispanic	0.138	0.114	0.087	0.051	0.182	0.149	0.004	0.091
Married, spouse present	-0.159	0.111	0.587	0.054	na	na	-0.487	0.084
Married, spouse absent	0.427	0.130	na	na	0.631	0.109	0.184	0.100
Single parent	-0.069	0.127	na	na	na	na	-0.089	0.099
Number of children	0.136	0.033	-0.016	0.013	0.165	0.039	0.039	0.028
Child < 5 yrs old	-0.064	0.082	-0.209	0.032	0.056	0.101	-0.218	0.068
Spouse in military	-0.028	0.109	-2.625	0.094	-0.172	0.129	0.094	0.094
Spouse employed	-0.323	0.094	0.200	0.028	-0.266	0.104	-0.116	0.073
Rent	-0.053	0.075	-0.153	0.032	-0.095	0.104	-0.140	0.058
Own home	-0.502	0.095	-0.817	0.037	-0.554	0.120	-0.543	0.076
Navy	0.316	0.084	-0.101	0.037	0.328	0.109	0.490	0.065
Marine Corps	0.020	0.094	-0.323	0.040	-0.175	0.128	-0.001	0.072
Air Force	-0.730	0.091	-0.521	0.035	-1.071	0.128	-1.049	0.078
Enlisted, E5-E6	-0.370	0.099	-0.012	0.050	-0.181	0.140	-0.409	0.076
Enlisted, E7-E9	-0.709	0.150	0.019	0.065	-0.362	0.197	-0.702	0.117
Officer, O1-O3	-0.758	0.161	0.152	0.070	-0.240	0.231	-0.802	0.132
Officer, O4-O9	-0.952	0.197	-0.065	0.085	-0.432	0.276	-0.946	0.162

Table A.4—continued

Variable	Crisis Referral		Spouse Employment		Spouse/Child Abuse		Alcohol/Drug	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	-0.937	0.255	0.213	0.086	-1.026	0.365	-1.197	0.213
CONUS	-0.277	0.076	-0.421	0.031	-0.318	0.102	-0.314	0.058
Deployed or TDY	0.141	0.098	-0.043	0.044	0.337	0.124	0.011	0.076
Overall satisfaction	-0.055	0.019	-0.026	0.008	-0.057	0.026	-0.056	0.015

Table A.5
 Cox Regression Coefficients and Standard Errors for Factors Affecting
 the Use of Community and Family Support Programs: Part 5

Variable	Rape Counseling		Legal Assistance		Relocation Assistance		Information/Referral	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	0.009	0.011	-0.018	0.001	-0.006	0.003	-0.009	0.002
Some college	-0.273	0.123	0.213	0.020	0.278	0.042	0.267	0.033
College	-0.055	0.217	0.277	0.031	0.398	0.063	0.398	0.052
Female	0.447	0.115	0.199	0.015	0.048	0.031	0.208	0.026
Black	0.327	0.118	0.064	0.018	0.311	0.035	0.320	0.028
Hispanic	0.432	0.155	0.045	0.024	0.116	0.050	0.241	0.040
Married, spouse present	-0.344	0.165	0.233	0.022	0.486	0.045	0.195	0.038
Married, spouse absent	0.070	0.198	0.503	0.028	0.631	0.059	0.353	0.049
Single parent	-0.355	0.201	0.256	0.027	0.191	0.059	0.033	0.048
Number of children	0.060	0.056	0.006	0.007	0.046	0.013	0.041	0.012
Child < 5 yrs old	-0.297	0.135	0.027	0.016	-0.015	0.032	-0.035	0.028
Spouse in military	0.195	0.167	-0.005	0.021	-0.289	0.046	-0.109	0.038
Spouse employed	-0.101	0.151	-0.148	0.017	-0.272	0.034	-0.170	0.030
Rent	0.055	0.114	-0.065	0.015	0.208	0.031	-0.035	0.026
Own home	-0.366	0.152	-0.382	0.017	-0.403	0.036	-0.565	0.032
Navy	-0.054	0.122	0.107	0.018	0.361	0.034	0.190	0.029
Marine Corps	-0.351	0.140	0.017	0.020	-0.118	0.042	-0.078	0.033
Air Force	-1.331	0.148	-0.176	0.016	-0.272	0.034	-0.506	0.029
Enlisted, E5-E6	-0.487	0.150	-0.030	0.022	0.344	0.051	-0.008	0.038
Enlisted E7-E9	-0.749	0.234	0.013	0.031	0.256	0.067	0.001	0.053
Officer, O1-O3	-0.750	0.243	0.368	0.033	0.595	0.070	0.139	0.056
Officer, O4-O9	-1.299	0.317	0.419	0.040	0.483	0.083	0.022	0.069

Table A.5—continued

Variable	Rape Counseling		Legal Assistance		Relocation Assistance		Information/Referral	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	-1.116	0.408	0.253	0.045	0.431	0.095	0.112	0.077
CONUS	-0.237	0.114	-0.376	0.015	-0.273	0.031	-0.380	0.025
Deployed or TDY	0.340	0.138	0.057	0.021	0.132	0.040	0.049	0.035
Overall satisfaction	-0.040	0.029	-0.005	0.004	-0.018	0.008	0.014	0.007

Table A.6
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Community and Family Support Programs: Part 6

Variable	Stress Management		Suicide Prevention		Transition Assistance		Housing Office	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.003	0.004	0.004	0.008	0.036	0.003	-0.021	0.001
Some college	0.076	0.052	-0.120	0.093	0.172	0.046	0.132	0.019
College	0.105	0.087	0.143	0.153	0.294	0.067	0.201	0.030
Female	0.571	0.046	0.103	0.083	0.179	0.036	0.148	0.014
Black	0.241	0.048	0.323	0.087	0.142	0.041	0.119	0.017
Hispanic	0.033	0.074	0.121	0.128	-0.012	0.060	0.013	0.024
Married, spouse present	-0.164	0.067	-0.367	0.119	0.004	0.052	0.575	0.021
Married, spouse absent	0.277	0.081	0.279	0.141	0.364	0.066	0.587	0.028
Single parent	-0.060	0.077	-0.114	0.141	-0.071	0.065	0.365	0.027
Number of children	0.046	0.021	0.072	0.038	0.048	0.015	0.012	0.006
Child < 5 yrs old	-0.125	0.051	-0.229	0.095	-0.105	0.039	0.029	0.015
Spouse in military	0.023	0.066	-0.081	0.130	-0.023	0.053	-0.130	0.020
Spouse employed	-0.028	0.056	-0.174	0.102	-0.111	0.040	-0.202	0.016
Rent	-0.170	0.046	-0.260	0.084	-0.037	0.037	0.011	0.014
Own home	-0.492	0.056	-0.449	0.103	-0.371	0.041	-0.740	0.017
Navy	0.348	0.051	0.183	0.088	-0.155	0.042	0.266	0.017
Marine Corps	-0.404	0.066	-0.057	0.097	-0.003	0.044	-0.032	0.019
Air Force	-0.581	0.052	-1.421	0.115	-0.638	0.038	-0.102	0.016
Enlisted, E5-E6	-0.087	0.061	-0.228	0.115	-0.319	0.054	0.229	0.023
Enlisted, E7-E9	-0.173	0.089	-0.248	0.164	-0.434	0.071	0.312	0.031
Officer, O1-O3	-0.342	0.097	-0.273	0.173	-0.173	0.075	0.752	0.033
Officer, O4-O9	-0.529	0.121	-0.710	0.220	-0.277	0.089	0.751	0.039

Table A.6—continued

Variable	Stress Management		Suicide Prevention		Transition Assistance		Housing Office	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	-0.843	0.182	-0.730	0.273	-0.448	0.103	0.584	0.044
CONUS	-0.299	0.046	-0.412	0.080	-0.263	0.038	-0.342	0.014
Deployed or TDY	0.079	0.062	0.180	0.103	-0.075	0.052	-0.014	0.020
Overall satisfaction	-0.053	0.011	-0.077	0.020	-0.159	0.008	0.009	0.004

Table A.7

Cox Regression Coefficients and Standard Errors for Factors Affecting the Use of Morale, Welfare, and Recreation Programs : Part I

Variable	Bowling		Golf Courses		Marinas		Stables	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.040	0.001	-0.040	0.002	-0.028	0.002	-0.025	0.004
Some college	0.053	0.017	0.309	0.030	0.223	0.032	0.110	0.044
College	-0.003	0.030	0.403	0.044	0.191	0.052	0.129	0.075
Female	0.041	0.014	-0.569	0.021	-0.101	0.026	0.293	0.037
Black	0.117	0.016	-0.721	0.035	-0.318	0.036	-0.264	0.047
Hispanic	0.032	0.023	-0.222	0.037	0.025	0.041	-0.083	0.060
Married, spouse present	-0.049	0.020	-0.038	0.027	-0.124	0.035	-0.084	0.051
Married, spouse absent	0.134	0.027	0.126	0.040	0.052	0.048	0.177	0.067
Single parent	-0.065	0.026	-0.165	0.043	-0.199	0.050	-0.056	0.066
Number of children	0.063	0.007	-0.027	0.009	0.012	0.012	0.076	0.017
Child < 5 yrs old	-0.207	0.016	-0.075	0.022	-0.161	0.028	-0.190	0.041
Spouse in military	0.038	0.021	0.161	0.031	0.104	0.038	0.025	0.054
Spouse employed	-0.109	0.017	-0.058	0.022	-0.086	0.029	-0.227	0.044
Rent	-0.227	0.014	-0.084	0.021	-0.085	0.026	-0.162	0.037
Own home	-0.563	0.018	-0.382	0.022	-0.337	0.030	-0.443	0.043
Navy	0.263	0.017	0.558	0.025	0.973	0.033	0.069	0.043
Marine Corps	0.094	0.018	0.458	0.026	1.029	0.033	0.616	0.040
Air Force	-0.167	0.016	0.140	0.023	-0.049	0.035	-1.087	0.048
Enlisted, E5-E6	-0.170	0.020	0.058	0.035	0.001	0.039	-0.139	0.053
Enlisted, E7-E9	-0.117	0.030	0.322	0.045	0.102	0.054	-0.244	0.079
Officer, O1-O3	0.068	0.032	0.904	0.047	0.562	0.057	0.234	0.082
Officer, O4-O9	0.076	0.040	1.046	0.056	0.537	0.070	0.299	0.100

Table A.7—continued

Variable	Bowling		Golf Courses		Marinas		Stables	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	0.003	0.045	0.749	0.060	0.471	0.073	0.001	0.106
CONUS	-0.353	0.014	-0.158	0.021	-0.323	0.025	0.152	0.040
Deployed or TDY	0.008	0.020	-0.042	0.028	0.035	0.034	0.145	0.049
Overall satisfaction	0.025	0.004	0.042	0.005	0.046	0.007	0.023	0.009

Table A.8
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Morale, Welfare, and Recreation Programs: Part 2

Variable	Fitness Centers		Youth Activities		Libraries		Arts and Crafts	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.036	0.001	-0.020	0.002	-0.023	0.001	-0.018	0.002
Some college	0.108	0.015	0.182	0.030	0.204	0.017	0.201	0.027
College	0.187	0.025	0.262	0.045	0.289	0.027	0.328	0.041
Female	0.017	0.012	0.256	0.026	0.078	0.013	0.158	0.020
Black	0.116	0.014	0.348	0.026	0.120	0.015	0.127	0.023
Hispanic	0.055	0.019	0.094	0.037	0.063	0.021	0.104	0.032
Married, spouse present	-0.097	0.016	0.189	0.035	-0.014	0.018	0.173	0.028
Married, spouse absent	0.125	0.022	0.063	0.048	0.188	0.025	0.259	0.039
Single parent	-0.141	0.022	na	na	-0.130	0.024	-0.056	0.038
Number of children	0.004	0.006	0.185	0.009	0.021	0.006	0.024	0.009
Child < 5 yrs old	-0.103	0.013	-0.406	0.023	-0.107	0.014	-0.114	0.021
Spouse in military	0.033	0.018	-0.026	0.035	-0.019	0.019	0.001	0.028
Spouse employed	-0.101	0.014	-0.188	0.024	-0.158	0.015	-0.221	0.023
Rent	-0.115	0.012	-0.328	0.025	-0.169	0.013	-0.265	0.020
Own home	-0.426	0.014	-0.881	0.026	-0.532	0.015	-0.600	0.023
Navy	0.200	0.014	0.279	0.028	0.080	0.016	-0.215	0.025
Marine Corps	0.100	0.015	0.067	0.030	0.040	0.016	-0.477	0.029
Air Force	-0.275	0.013	-0.230	0.026	-0.195	0.014	-0.053	0.020
Enlisted, E5-E6	-0.136	0.017	0.439	0.045	-0.148	0.019	0.041	0.031
Enlisted, E7-E9	-0.089	0.025	0.489	0.053	-0.123	0.027	0.137	0.042
Officer, O1-O3	0.265	0.027	0.675	0.059	0.189	0.028	0.473	0.044
Officer, O4-O9	0.370	0.032	0.766	0.066	0.280	0.034	0.483	0.052

Table A.8—continued

Variable	Fitness Centers		Youth Activities		Libraries		Arts and Crafts	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	0.156	0.037	0.703	0.069	0.122	0.039	0.418	0.059
CONUS	-0.213	0.012	-0.364	0.024	-0.322	0.013	-0.507	0.019
Deployed or TDY	-0.001	0.016	0.068	0.032	-0.018	0.018	0.088	0.027
Overall satisfaction	0.022	0.003	0.017	0.006	0.014	0.003	0.013	0.005

Table A.9
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Morale, Welfare, and Recreation Programs: Part 3

Variable	Tours and Tickets		Recreation Gear Issue		Main Exchange		7-Day Store/ Shoppette	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.023	0.001	-0.037	0.002	-0.025	0.001	-0.025	0.001
Some college	0.153	0.017	0.129	0.019	0.037	0.014	0.057	0.014
College	0.233	0.028	0.174	0.032	0.087	0.023	0.100	0.024
Female	0.113	0.013	-0.134	0.016	0.042	0.011	0.042	0.011
Black	0.077	0.016	0.014	0.019	0.041	0.013	0.052	0.014
Hispanic	0.107	0.021	0.073	0.025	0.003	0.018	0.013	0.019
Married, spouse present	-0.040	0.019	-0.097	0.022	-0.050	0.015	-0.058	0.016
Married, spouse absent	0.088	0.026	0.060	0.030	0.145	0.021	0.146	0.022
Single parent	-0.067	0.025	-0.145	0.030	-0.139	0.021	-0.125	0.021
Number of children	0.007	0.006	0.040	0.007	-0.003	0.005	0.000	0.005
Child < 5 yrs old	-0.108	0.015	-0.159	0.017	-0.060	0.012	-0.066	0.013
Spouse in military	0.097	0.019	0.077	0.023	-0.001	0.016	0.017	0.017
Spouse employed	-0.067	0.016	-0.078	0.018	-0.118	0.013	-0.135	0.014
Rent	-0.049	0.014	-0.156	0.016	-0.050	0.011	-0.105	0.012
Own home	0.405	0.016	-0.437	0.018	-0.367	0.013	-0.433	0.014
Navy	0.497	0.015	0.607	0.019	0.292	0.013	0.207	0.014
Marine Corps	0.188	0.018	0.439	0.020	0.080	0.014	0.132	0.014
Air Force	-0.200	0.015	0.041	0.019	-0.273	0.012	-0.236	0.013
Enlisted, E5-E6	-0.070	0.020	0.005	0.023	-0.164	0.016	-0.147	0.017
Enlisted, E7-E9	-0.007	0.028	0.088	0.033	-0.098	0.023	-0.085	0.024
Officer, O1-O3	0.384	0.030	0.428	0.035	0.233	0.024	0.245	0.026

Table A.9—continued

Variable	Tours and Tickets		Recreation Gear Issue		Main Exchange		7-Day Store/ Shoppette	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Officer, O4-O9	0.514	0.036	0.451	0.043	0.343	0.030	0.352	0.031
Warrant officer	0.281	0.041	0.283	0.049	0.106	0.034	0.124	0.035
CONUS	-0.280	0.013	-0.335	0.016	-0.191	0.011	-0.239	0.012
Deployed or TDY	0.040	0.018	0.034	0.021	-0.008	0.015	-0.008	0.016
Overall satisfaction	0.022	0.003	0.035	0.004	0.008	0.003	0.011	0.003

Table A.10
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Morale, Welfare, and Recreation Programs: Part 4

Variable	Clubs		Temporary Lodging Facilities		Cabins, Cottages and Cabanas		Laundry/ Dry Cleaning	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.029	0.001	-0.019	0.001	-0.002	0.002	-0.022	0.001
Some college	0.069	0.016	0.143	0.020	0.192	0.036	0.070	0.016
College	0.113	0.026	0.207	0.031	0.270	0.054	0.125	0.027
Female	0.029	0.012	0.061	0.014	0.041	0.028	0.086	0.013
Black	0.133	0.015	0.180	0.017	-0.024	0.034	0.162	0.015
Hispanic	0.025	0.020	0.084	0.024	0.213	0.041	0.033	0.021
Married, spouse present	-0.131	0.017	0.078	0.020	-0.100	0.038	-0.140	0.018
Married, spouse absent	0.127	0.023	0.275	0.028	0.068	0.052	0.096	0.024
Single parent	-0.107	0.023	-0.062	0.027	-0.090	0.051	-0.149	0.024
Number of children	-0.017	0.006	0.021	0.006	0.048	0.011	-0.013	0.006
Child < 5 yrs old	-0.069	0.014	-0.055	0.016	-0.074	0.029	-0.080	0.015
Spouse in military	0.080	0.018	-0.018	0.021	0.183	0.039	0.093	0.019
Spouse employed	-0.094	0.015	-0.182	0.017	-0.050	0.030	-0.097	0.016
Rent	-0.147	0.012	-0.074	0.015	-0.159	0.028	-0.164	0.013
Own home	-0.440	0.015	-0.535	0.017	-0.392	0.031	-0.514	0.016
Navy	0.387	0.015	0.260	0.017	0.479	0.032	0.329	0.015
Marine Corps	0.250	0.016	0.056	0.019	0.657	0.032	0.190	0.017
Air Force	-0.113	0.014	0.035	0.016	-0.263	0.032	-0.201	0.015
Enlisted, E5-E6	-0.173	0.018	-0.015	0.023	0.046	0.043	-0.184	0.019
Enlisted, E7-E9	-0.003	0.026	0.132	0.031	0.186	0.057	-0.076	0.027
Officer, O1-O3	0.444	0.028	0.609	0.033	0.487	0.060	0.245	0.029

Table A.10—continued

Variable	Clubs		Temporary Lodging Facilities		Cabins, Cottages and Cabanas		Laundry/Dry Cleaning	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Officer, O4–O9	0.608	0.034	0.611	0.039	0.583	0.072	0.391	0.035
Warrant officer	0.320	0.038	0.446	0.044	0.336	0.078	0.133	0.040
CONUS	-0.296	0.012	-0.225	0.015	-0.658	0.025	-0.340	0.013
Deployed or TDY	0.000	0.017	0.083	0.020	0.097	0.036	0.012	0.018
Overall satisfaction	0.029	0.003	0.015	0.004	0.023	0.007	0.028	0.003

Table A.11
 Cox Regression Coefficients and Standard Errors for Factors Affecting
 the Use of Morale, Welfare, and Recreation Programs: Part 5

Variable	Photo Hobby Shop		Auto Repair Centers		Auto Hobby Shop		Rentals/ Equipment	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.015	0.003	-0.023	0.002	-0.030	0.002	-0.033	0.002
Some college	-0.021	0.037	0.106	0.020	0.124	0.021	0.136	0.022
College	0.231	0.062	0.182	0.033	0.161	0.036	0.180	0.036
Female	0.086	0.031	-0.154	0.016	-0.420	0.019	-0.133	0.018
Black	0.640	0.032	0.282	0.018	0.244	0.021	0.133	0.021
Hispanic	0.414	0.045	0.138	0.025	0.106	0.028	0.130	0.028
Married, spouse present	-0.231	0.045	0.064	0.023	0.098	0.026	0.035	0.025
Married, spouse absent	-0.037	0.059	0.190	0.031	0.231	0.035	0.154	0.035
Single parent	-0.215	0.056	-0.039	0.030	-0.047	0.035	-0.076	0.034
Number of children	0.023	0.015	0.009	0.007	0.027	0.008	0.036	0.008
Child < 5 yrs old	-0.141	0.036	-0.093	0.018	-0.138	0.020	-0.129	0.019
Spouse in military	0.041	0.047	0.009	0.024	-0.064	0.028	0.073	0.026
Spouse employed	-0.056	0.039	-0.117	0.018	-0.129	0.021	-0.084	0.020
Rent	-0.180	0.031	-0.161	0.016	-0.169	0.018	-0.183	0.018
Own home	-0.509	0.040	-0.574	0.019	-0.583	0.022	-0.463	0.021
Navy	-0.020	0.036	0.348	0.019	0.628	0.023	0.407	0.022
Marine Corps	-0.222	0.039	0.083	0.021	0.327	0.024	0.219	0.023
Air Force	-0.572	0.036	-0.178	0.018	0.195	0.022	-0.008	0.020
Enlisted, E5-E6	-0.376	0.043	-0.071	0.024	-0.115	0.026	-0.043	0.026
Enlisted, E7-E9	-0.397	0.065	-0.025	0.033	-0.109	0.037	0.018	0.037
Officer, O1-O3	-0.266	0.067	0.280	0.035	0.023	0.040	0.359	0.039

Table A.11—continued

Variable	Photo Hobby Shop		Auto Repair Centers		Auto Hobby Shop		Rentals/ Equipment	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Officer, O4–O9	-0.473	0.084	0.264	0.043	-0.067	0.050	0.256	0.048
Warrant officer	-0.232	0.094	0.168	0.048	0.128	0.054	0.221	0.054
CONUS	-0.685	0.029	-0.435	0.016	-0.390	0.018	-0.436	0.017
Deployed or TDY	0.217	0.040	0.042	0.022	0.041	0.024	0.046	0.024
Overall satisfaction	0.029	0.008	0.022	0.004	0.014	0.005	0.034	0.005

Table A.12
Cox Regression Coefficients and Standard Errors for Factors Affecting
the Use of Morale, Welfare, and Recreation Programs: Part 6

Variable	Animal Care Clinics		Auto/Truck Rental		Commissary	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Age	-0.015	0.002	-0.017	0.003	-0.024	0.001
Some college	0.200	0.030	0.083	0.032	0.041	0.014
College	0.220	0.045	0.149	0.055	0.092	0.023
Female	0.352	0.023	-0.030	0.028	0.064	0.011
Black	-0.458	0.032	0.442	0.029	0.049	0.013
Hispanic	-0.082	0.037	0.268	0.041	0.014	0.018
Married, spouse present	0.898	0.035	0.033	0.039	0.000	0.015
Married, spouse absent	0.728	0.048	0.198	0.052	0.179	0.021
Single parent	0.318	0.047	0.001	0.051	-0.115	0.021
Number of children	0.027	0.009	0.021	0.013	0.001	0.005
Child < 5 yrs old	-0.261	0.023	-0.033	0.030	-0.057	0.012
Spouse in military	-0.154	0.031	0.087	0.040	-0.013	0.016
Spouse employed	-0.257	0.024	-0.034	0.032	-0.128	0.013
Rent	-0.307	0.023	-0.021	0.027	-0.051	0.011
Own home	-0.637	0.025	-0.497	0.034	-0.370	0.013
Navy	-0.153	0.027	0.433	0.032	0.276	0.013
Marine Corps	-0.146	0.029	0.283	0.035	0.059	0.014
Air Force	-0.280	0.023	-0.250	0.033	-0.261	0.013
Enlisted, E5-E6	0.173	0.036	-0.058	0.039	-0.154	0.016
Enlisted, E7-E9	0.216	0.047	-0.104	0.056	-0.083	0.023
Officer, O1-O3	0.543	0.050	0.149	0.060	0.248	0.025
Officer, O4-O9	0.532	0.059	0.002	0.075	0.351	0.030

Table A.12—continued

Variable	Animal Care Clinics		Auto/Truck Rental		Commissary	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Warrant officer	0.358	0.065	-0.041	0.085	0.113	0.034
CONUS	-0.286	0.023	-0.798	0.025	-0.217	0.011
Deployed or TDY	-0.049	0.033	0.060	0.036	-0.001	0.016
Overall satisfaction	0.006	0.006	0.007	0.007	0.010	0.003

REFERENCES

Ackerman, Glenn H., *An Alternative Approach for Housing Military Personnel*, Alexandria, VA: Center for Naval Analysis, 1996.

Ackerman, Glenn H., Alan J. Marcus, and Christine Baxter, "Navy Family Housing: Costs, Benefits, and Requirements," Center for Naval Analysis, paper presented at the Western Economics Association Meetings, 1997.

Army and Air Force Exchange Service, *Our Second Century of Service*, 1997.

August, Debra S. *Army Life and Life in the Army*, Santa Monica, CA: RAND, RGSD-125, 1996.

Barber, Alison E., Randall B. Dunham, and Roger A. Formisano, "The Impact of Flexible Benefits on Employee Satisfaction: A Field Study," *Personnel Psychology*, Vol. 45, 1992.

Bolten, Joseph G., John M. Halliday, and Edward G. Keating, *Understanding and Reducing the Costs of FORSCOM Installations*, Santa Monica, CA: RAND, MR-730-A, 1996.

Bray, Robert M., Larry A. Kroutil, Sara C. Wheelless, Mary Ellen Marsden, Susan L. Bailey, John A. Fairbank, and Thomas C. Harford, *Highlights 1995 Department of Defense Survey of Health Related Behaviors Among Military Personnel*, Research Triangle Park, NC: Research Triangle Institute, 1995.

Bryk, Anthony S., and Mary Erina Driscoll, *The High School as Community: Contextual Influences, and Consequences for Students*

and Teachers, Madison, WI: National Center on Effective Secondary Schools, 1988.

Buddin, Richard, *Enlistment Effects of the 2+2+4 Recruiting Experiment*, Santa Monica, CA: RAND, R-4097-A, 1991.

Bureau of Labor Statistics (BLS), "BLS Reports on Employee Benefits in Medium and Large Private Establishments, 1995," U.S. Department of Labor, pub. no. 97-246, 1997.

Burnam, M. Audrey, Lisa S. Meredith, Cathy Donald Sherbourne, R. Burciaga Valdez, and Georges Vernez, *Army Families and Soldier Readiness*, Santa Monica, CA: RAND, R-3884-A, 1992.

Caliber Associates, *Leisure Needs Survey, Army MWR: U.S. Army 1992-1995 Consolidated Report*, Fairfax, VA: 1996.

Congressional Budget Office (CBO), *Military Family Housing in the United States*, September 1993.

Department of Defense, *Family Status and Initial Term of Service*, December 1993.

Department of Defense, *Report of the Commission on Roles and Missions of the Armed Forces*, 1995a.

Department of Defense, *Quality of Life Task Force*, 1995b.

Department of Defense, *Goals and Measures for Community and Family Support Programs*, 1996.

Department of Defense, *Report of the Quadrennial Defense Review*, May 1997.

Diener, Ed, and Carol Diener, "Most People Are Happy," *Psychological Science*, Vol. 7, No. 3, 1996.

Famulari, Melissa, and Marilyn E. Manser, "Employer-Provided Benefits: Employer Cost Versus Employee Value," *Monthly Labor Review*, Vol. 112, No. 12, 1989.

Fujita, Frank, Ed Diener, and Ed Sandvik, "Gender Differences in Negative Affect and Well-Being," *Journal of Personality and Social Psychology*, Vol. 61, No. 3, 1991.

General Accounting Office (GAO), *Military Family Housing: Opportunities Exist to Reduce Costs and Mitigate Inequities*, GAO/NSIAD-26-203, 1996.

Greenley, James R., Jan Steven Greenberg, and Roger Brown, "Measuring Quality of Life: A New and Practical Survey Instrument," *Social Work*, Vol. 42, No. 3, May 1997.

Hamermesh, Daniel S. and Albert Rees, *The Economics of Work and Pay*, 5th ed., New York: Harper-Collins, 1993.

Hamermesh, Daniel S. and John Wolfe, "Compensating Wage Differentials and the Duration of Wage Loss," *Journal of Labor Economics*, Vol. 8, 1990.

Harris, J.H., M.D. Blair, and H. O'Neil, *MWR Programs and Readiness Links*, Fairfax, VA: Caliber Associates, 1995.

Harrison, David A., and Laurie Z. Liska, "Promoting Regular Exercise in Organizational Fitness Programs: Health-Related Differences in Motivational Building Blocks," *Personnel Psychology*, Vol. 47, 1994.

Hartwell, Tyler D., Paul Steele, Michael T. French, Frank J. Potter, Nathaniel F. Rodman, and Gary A. Zarkin, "Aiding Troubled Employees: The Prevalence, Cost, and Characteristics of Employee Assistance Programs in the United States," *American Journal of Public Health*, Vol. 86, No. 6, 1996.

Heckman, James J., and Richard Robb, Jr., "Alternative Methods for Evaluating the Impact of Interventions," *Journal of Econometrics*, Vol. 30, 1985.

Heckman, James J., and V. Joseph Hotz, "Choosing Among Alternative Nonexperimental Methods for Estimating the Impact of Social Programs: The Case of Manpower Training," *Journal of the American Statistical Association*, Vol. 84, No. 408, 1989.

Keating, Edward G., Frank Camm, and Christopher Hanks, *Sourcing Decisions for Air Force Support Services*, Santa Monica, CA: RAND, DB-193-AF.

Kerce, Elyse, *Quality of Life in the U.S. Marine Corps*, San Diego, CA: Navy Personnel Research and Development Center, 1995.

Koopmans, Martha E., and Dan D. Goldhaber, *Return on Quality-of-Life Investment*, Alexandria, VA: Center for Naval Analysis, 1997.

Lawless, Jerald F., *Statistical Models and Methods for Lifetime Data*, New York: Wiley, 1982.

Marcus, Alan J., and Glenn H. Ackerman, *CNA Overview of Housing Solutions*, Alexandria, VA: Center for Naval Analysis, CAB-96-023, 1996.

Martin, James A., and Dennis K. Orthner, "The 'Company Town' in Transition: Rebuilding Military Communities," in Gary L. Brown and Dennis K. Orthner (eds.), *The Organization Family: Work and Family Linkages in the U.S. Military*, Praeger, New York, 1989.

McConnell, Campbell R. and Stanley L. Brue, *Contemporary Labor Economics*, 3rd ed., New York: McGraw-Hill, 1992.

Meisenheimer, Joseph R., and William J. Wiatrowski, "Flexible Benefit Plans: Employees Who Have a Choice," *Monthly Labor Review*, Vol. 112, No. 12, 1989.

Milne, Stuart H., Terry C. Blum, and Paul M. Roman, "Factors Influencing Employees' Propensity to Use an Employee Assistance Program," *Personnel Psychology*, Vol. 47, 1994.

Motowidlo, Stephan J., and James R. Van Scotter, "Evidence that Task Performance Should Be Distinguished from Contextual Performance," *Journal of Applied Psychology*, Vol. 79, No. 4, 1994.

Mullis, Randolph J., "Measures of Economic Well-Being as Predictors of Psychological Well-Being," *Social Indicators Research*, Vol. 26, 1992.

Myers, David G. and Ed Diener, "Who is happy?" *Psychological Science*, Vol. 6, No. 1., 1995.

Nelson, Michael A., "Municipal Government Approaches to Service Delivery: An Analysis from a Transactions Cost Perspective," *Economic Inquiry*, Vol. 35, 1997.

Newhouse, Joseph P., *Free for All? Lessons from the RAND Health Insurance Experiment*, Cambridge, Massachusetts: Harvard, University Press, 1993.

Phelps, Charles E., *Health Economics*, 2nd edition, Reading, Massachusetts: Addison-Wesley, 1997.

Rosen, Sherwin, "Hedonic Price and Implicit Markets," *Journal of Political Economy*, Vol. 82, 1974.

Schank, John F., Margaret C. Harrell, Harry J. Thie, Monica M. Pinto, and Jerry M. Sollinger, *Relating Resources to Personnel Readiness: Use of Army Strength Management Models*, Santa Monica, CA: RAND, MR-790-OSD, 1997.

Simons, Robert, *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*, Boston, Massachusetts: Harvard Business School Press, 1995.

U.S. Army Community and Family Support Center, *1996 MWR Annual Report*, 1997.

U.S. House of Representatives, House Committee on National Security, *Military Readiness 1997: Rhetoric and Reality*, April 1997.

U.S. House of Representatives, *National Defense Authorization Act for Fiscal Year 1997*, H.R. 104-724, 1996.

Warner, John T., and Gary Solon, "First-Term Attrition and Reenlistment in the U.S. Army," in David K. Horne, Curtis L. Gilroy, and D. Alton Smiths (eds.), *Military Compensation and Personnel Retention: Models and Evidence*, Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA: 1991.

Way-Smith, Susan, Edward G. Keating, Peter A. Morrison, and Michael T. Childress, *Army Morale, Welfare and Recreation Programs in the Future*, Santa Monica, CA: RAND, MR-491-A, 1994.

Wiatrowski, William J., "Family-Related Benefits in the Workplace," *Monthly Labor Review*, Vol. 113, No. 3, 1990.

Woodbury, Stephen A., "Substitution between Wage and Nonwage Benefits," *American Economic Review*, Vol. 73, No. 1, 1983.