

NPRDC TR 86-7

DECEMBER 1985

AD-A162 537

FACTORS AFFECTING ATTRITION AMONG MARINE CORPS WOMEN

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED



DTIC
ELECTE
DEC 19 1985

B

NAVY PERSONNEL RESEARCH
AND
DEVELOPMENT CENTER
San Diego, California 92152

Best Available Copy

FACTORS AFFECTING ATTRITION AMONG MARINE CORPS WOMEN

Marjorie H. Royle

Reviewed by
Ernest A. Koehler

Approved by
Robert E. Blanchard

Released by
H. S. Eldredge
Captain, U.S. Navy
Commanding Officer

DTIC
ELECTE
S **DEC 19 1985** **D**
B

Navy Personnel Research and Development Center
San Diego, California 92152-6800

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED			1b. RESTRICTIVE MARKINGS	
2a SECURITY CLASSIFICATION AUTHORITY			3 DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution unlimited.	
2b DECLASSIFICATION / DOWNGRADING SCHEDULE				
4 PERFORMING ORGANIZATION REPORT NUMBER(S) NPRDC TR 86-7			5 MONITORING ORGANIZATION REPORT NUMBER(S)	
6a NAME OF PERFORMING ORGANIZATION Navy Personnel Research and Development Center		6b OFFICE SYMBOL (If applicable) Code 71		7a NAME OF MONITORING ORGANIZATION
6c ADDRESS (City, State, and ZIP Code) San Diego, CA 92152-6800			7b ADDRESS (City, State, and ZIP Code)	
8a NAME OF FUNDING / SPONSORING ORGANIZATION Headquarters, U.S. Marine Corps		8b OFFICE SYMBOL (If applicable) MPI-20		9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c ADDRESS (City, State, and ZIP Code) Washington, DC 20380			10 SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO 62763N	PROJECT NO CF63- 521-080
			TASK NO 101	WORK UNIT ACCESSION NO 04.23
11 TITLE (Include Security Classification) FACTORS AFFECTING ATTRITION AMONG MARINE CORPS WOMEN				
12 PERSONAL AUTHOR(S) Royle, Marjorie H.				
13a TYPE OF REPORT Technical Report		13b TIME COVERED FROM 81 Sep TO 84 Sep		14 DATE OF REPORT (Year, Month, Day) 1985 December
15 PAGE COUNT 59				
16 SUPPLEMENTARY NOTATION Gerrard, M., & Royle M. (July 1985). Predicting pregnancy and pregnancy attrition in first-term Marine Corps women. (NPRDC Tech. Rep. 85-32). San Diego, CA: NPRDC				
17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD 05	GROUP 09	SUB-GROUP	Women in the military, Marine Corps women, attrition, pregnancy, stress, locus of control, work group climate	
19 ABSTRACT (Continue on reverse if necessary and identify by block number) A representative sample of Marine Corps women in their first enlistments and their supervisors were surveyed to identify factors in their backgrounds and experiences that might be related to attrition. Attrition status was obtained from Marine Corps records both at the time of the survey and 18 months later. Women who attrited were classified into three types: those who were pregnant with a future interest in the Marine Corps, those pregnant with no future interest, and those who left for reasons other than pregnancy. Different factors predicted each type of attrition. Across attrition types, the most important factors were supervisor and work group relationships, family and career orientation, and management of stress. Recruiting, training, and placement practices had a relatively small effect on attrition. To help decrease attrition among women, the Marine Corps should discourage the most traditional women from enlisting, help women develop coping skills, provide sex education, and improve work group climate as well as the climate toward women as a whole in the USMC by emphasizing their achievements, potential, and command support for their participation.				
20 DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS			21 ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a NAME OF RESPONSIBLE INDIVIDUAL Thomas, Patricia J.			22b TELEPHONE (Include Area Code) (619) 225-2396	22c OFFICE SYMBOL Code 62

DD FORM 1473, 84 MAR

33 APR edition may be used until exhausted
All other editions are obsolete.

SECURITY CLASSIFICATION OF THIS PAGE

UNCLASSIFIED

FOREWORD

This research was conducted within work unit CF63521-080-101-04.23: Assessment of First-term Attrition of Women Marines. Its purpose was to identify factors related to the attrition of Marine Corps women and to develop recommendations to address the problems.

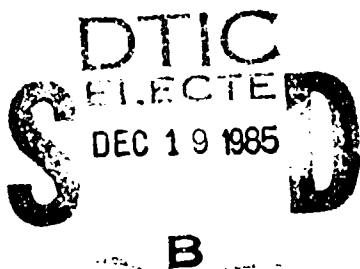
The research effort was conducted in three phases. In the first phase, previous research and existing data sets were examined to identify the problem areas leading to attrition among Marine Corps women. In the second phase, experiences within the work setting of women attrites and nonattrites were compared. In the third phase a sex education counterattrition program was designed and developed.

This is the fourth in a series of reports documenting the research. The first, Technical Report 83-22, describes results from the first phase. The second, Technical Report 84-57, presents initial findings from the second phase, describing the backgrounds and experiences of Marine Corps women. The third, Technical Report 85-32, presents findings from the second phase related to pregnancy and pregnancy attrition. This final report on the second phase examines all types of attrition and summarizes findings related to three major types. An additional report on the third phase documents the need for sex education and describes the development of an experimental curriculum.

Appreciation is extended to LtCol Michael Patrow and Capt David Linnebur of Headquarters, Marine Corps (MPI-20), project officers for this research.

H. S. ELDREDGE
Captain, U.S. Navy
Commanding Officer

J. W. TWEEDDALE
Technical Director



Account No. 1234567890 ✓
 Date 10/10/1954
 To the order of
 Cash
 \$ 100.00
 For
 Balance forward
 \$ 100.00
 \$ 100.00
 Dist. 10/10/1954
 A-1

SUMMARY

Problem

The U.S. Marine Corps (USMC) is currently identifying billets in which greater numbers of women can be placed. In order to successfully utilize more women, however, the high rate of attrition among this group must be reduced.

Purpose

The purpose of this research effort was to identify factors in the women's backgrounds and USMC experiences that are related to attrition so that ways to decrease attrition could be developed.

Method

Factors that are hypothesized to contribute to attrition--inadequate screening, unrealistic expectations, improper placement, lack of acceptance, less effective groups and leaders than others, lack of resources to cope with stress, dissatisfaction with the USMC, vulnerability to pregnancy, and unsatisfactory performance--were tested for their applicability to first-term enlisted Marine Corps women. Women with between 9 and 36 months of service and their supervisors were surveyed about their backgrounds and abilities, their Marine Corps experiences, and their satisfaction with those experiences. Women who attrited were classified into three groups: those who were pregnant with future interest in the USMC, those who were pregnant with no future interest in the USMC, and those who attrited for other reasons. Responses of these women and their supervisors were compared with nonattrites using univariate and multivariate tests.

Findings

1. Compared to nonattrites on background and personality factors, attrites were more traditional in their family and career goals, less likely to have developed active ways of coping with problems or to believe they had influence over what happened to them, and less likely to be black.
2. Recruiting, training, and placement practices had a relatively small effect on attrition. Nonpregnant attrites were most likely to have not received their choice of occupational fields, however, and the most traditional women working in the least traditional settings or at the least traditional tasks were most likely to attrite.
3. Lack of acceptance was strongly related to attrition, with nonattrites feeling most comfortable and nonpregnant attrites feeling most harassed. Nonattrites and pregnant attrites who retained an interest in the USMC had integrated most effectively into their work groups.
4. Women were less likely to attrite if their work groups had good organizational climate, their supervisors established good working relationships with them, and communication was good with Marine friends and supervisors.
5. Stress was also related to attrition, but the presence of social support helped people cope with stressful situations. Women with more support from friends and co-

workers reported less stress and fewer symptoms of stress than other women. Quality of the social contacts was more important than quantity in combating stress.

6. Dissatisfaction with specific aspects of USMC life was not highly related to attrition, although nonattrites were more satisfied with their present jobs, supervisors, and Marine Corps career opportunities than attrites.
7. Pregnant attrites were more traditional in their career and family orientation and were more likely to be married with husbands who wanted them to leave the Marine Corps. They also had fewer, less supportive friends than nonpregnant attrites and nonattrites.
8. Although nonpregnant attrites were the least technically able and cooperative group according to their supervisors, pregnant attrites, particularly those interested in the USMC, were nearly as proficient as nonattrites.

Conclusions

1. The USMC is losing many capable women due to attrition, particularly attrition due to pregnancy.
2. Identification of pregnant and nonpregnant attrites and further identification of pregnant attrites with interest in future USMC ties were useful in understanding the reasons for attrition: Women attriting due to behavior or adjustment problems were not performing well in situations they described as difficult and did not seem to have adequate resources with which to cope with their difficulties. Pregnant attrites were more traditional in career and family outlook than other women. Pregnant attrites with no interest in the USMC solved problems by leaving rather than seeking help from Marine Corps sources. Pregnant attrites who had interest in the USMC and who were good performers resolved conflicting work and family demands by leaving.
3. Although some support was found for each theory of attrition explored, the most important factors were traditional family and career orientation, the woman's lack of acceptance by the group and supervisor, and her exposure to stress without the resources to cope with it.

Recommendations

To decrease attrition among women, the USMC should investigate ways to:

1. Improve recruiting and screening processes to provide women applicants with a better picture of Marine Corps life and discourage the most traditional women from enlisting.
2. Help women become accepted by providing job-related training, creating flexible work groups with good climates, and encourage supervisors to become involved in helping women solve their problems.
3. Help women develop coping skills and social support to counteract job stresses.
4. Improve the climate toward women in the USMC as a whole by emphasizing their achievements, their potential, and command support for their participation.

5. Provide support for pregnant women so that they can combine parenthood and a USMC career.
6. Help women develop short-term alternatives to marriage and pregnancy for overcoming loneliness.
7. Provide sex education in a setting that encourages exploring life and career goals to help prevent unplanned pregnancies and help women and men make thoughtful choices about marriage and parenthood.

CONTENTS

	Page
INTRODUCTION	1
Problem	1
Background	1
Purpose	3
METHOD	3
Survey and Sample	3
Analysis	4
Attrition Criterion	4
Contributors to Attrition	5
Multivariate Analyses	5
RESULTS	6
Contributors to Attrition	6
Inadequate Screening	6
Unrealistic Expectations	8
Improper Placement	10
Lack of Acceptance	11
Less Effective Groups and Leaders	14
Lack of Resources to Cope With Stress	16
Dissatisfaction With the USMC	21
Vulnerability to Pregnancy	21
Unsatisfactory Job Performance	21
Multivariate Prediction of Attrition	25
Discriminant Analyses	25
Multiple Regression Analyses	27
DISCUSSION	29
Predicting Different Categories of Attrition	29
Predicting Attrition Among Single and Married Women	31
Hypothesized Contributors to Attrition	31
CONCLUSIONS	34
RECOMMENDATIONS	34
REFERENCES	35
APPENDIX--VARIABLES USED IN ANALYSES	A-0
DISTRIBUTION LIST	

LIST OF TABLES

		Page
1.	Survey Sample Sizes	4
2.	Differences in Background Variables Between Attrites and Nonattrites	7
3.	Differences Between Attrites and Nonattrites in Prior Knowledge of the USMC	9
4.	Differences Between Attrites and Nonattrites in Measures of Appropriate Placement	10
5.	Differences in Attrition as Affected by Traditionality in Person-Job Match	11
6.	Differences Between Attrites and Nonattrites in Acceptance Into the Work Group	12
7.	Differences Between Attrites and Nonattrites in Measures of Group and Supervisory Effectiveness	15
8.	Differences in Stress Between Attrites and Nonattrites	17
9.	Differences in Social Support Measures Between Attrites and Nonattrites	18
10.	Correlations Between Social Support and Stress Measures for Two Levels of Locus of Control	19
11.	Correlations Between Social Support and Symptoms of Stress For Two Levels of Perceived Stress and Locus of Control	20
12.	Differences Between Attrites and Nonattrites in Satisfaction With Various Aspects of USMC Life	22
13.	Differences Between Attrites and Nonattrites in Marital Status	23
14.	Differences Between Attrites and Nonattrites in Performance Effectiveness	24
15.	Results of Discriminant Analyses	26
16.	Results of Multiple Regression Analyses to Predict Attrition	28
17.	Summary of Differences Between Attrites and Nonattrites	30

INTRODUCTION

Problem

The U.S. Marine Corps (USMC) is currently identifying billets in both support and Fleet Marine Force units in which greater numbers of women can be placed. This action will enable the USMC to effectively utilize an additional source of high quality personnel. One problem with increasing the numbers of women, however, is their relatively high attrition rate. Of the women who first entered the USMC in Fiscal Year 1981, 42 percent failed to complete their first enlistments. This high attrition rate must be decreased if women are to contribute meaningfully to meeting the USMC's personnel requirements.

Background

For men, almost all premature discharges from the USMC occur at the instigation of the military authority because of behavior problems, unsuitability, and the convenience of the government. For women, however, many premature discharges occur at the instigation of the individual woman when she becomes pregnant. Although pregnancy is not an automatic reason for discharge, a pregnant woman may request an early discharge, which is almost always granted. The pregnancy itself may be intended or unintended. Some women may become pregnant in order to obtain early discharges, although previous research (Royle, 1983) suggests that this number is not large. Some of the women, upon becoming pregnant, probably prefer to remain in the service, but request a discharge because they believe that combining the responsibilities of motherhood and a military career would be too difficult. Thus, for women, attrition may reflect several situations:

1. Women who are identified by the military as unsuited for a military career;
2. Women who, although suited for a military career, would prefer to be civilians and take advantage of the opportunity to attrite when they become pregnant; and
3. Women who, although suited for and interested in a military career, attrite when pregnant to become full-time mothers.

Because the situations and motivations of these women differ from one another, the antecedents and causes of attrition for them may differ as well.

Attrition, particularly attrition of military personnel, has engendered considerable research (Goodstadt & Yedlin, 1979; Hand, Griffith, & Mobley, 1977; Sinaiko & Marshall, 1980; Wiskoff, Atwater, & Houle, 1980). Most studies have not included women, however, and have not distinguished among different types of attrition.

From the literature, several factors that contribute to possible attrition can be hypothesized. Each highlights different problem areas, sometimes occurring at different points in a military career, and each suggests different potential solutions. These factors are discussed below.

1. Unsuitability for military life may contribute to attrition. Much attrition research has been based on this assumption, predicting attrition using demographic and other background variables available at the time of enlistment (Goodstadt & Yedlin, 1979; Sinaiko & Marshall, 1980; Wiskoff, Atwater, & Houle, 1980). According to this hypothesis, several background variables may predict attrition, particularly among women. Women

who have had more experience in male groups, with brothers, or with sports may be more comfortable in a mostly male atmosphere and therefore be less likely to attrite. Conversely, women who hold traditional views about the role of women in society may be less comfortable and more likely to attrite. Attrition among both men and women may be related to lack of maturity, as measured by variables such as age, years of education, failure to complete activities in the past or to cope actively with problems, and an external locus of control (a belief that external events control the individual, whose own efforts have little effect). This approach to attrition proposes improving screening so that persons with a high risk of attriting can be eliminated at enlistment (Wilcove, Thomas, & Blankenship, 1979).

2. USMC experiences that differ greatly from expectations may contribute to attrition. Expectations have been found to be important in both military and civilian settings, and efforts have been undertaken to develop more realistic job previews, to help persons both to select an appropriate job and to cope with what is encountered after hiring (Louis, 1980; Porter & Steers, 1973; Reilly, Tenopir, & Sperling, 1979; Wanous, 1978). People with greater knowledge of the military through experiences of a family member, through effective and accurate recruiting, or through thorough preparation during recruit training for what they will encounter should be less likely to attrite than those lacking such knowledge.

3. Being placed in the wrong job may contribute to attrition. Attrites may have been placed in a job for which they were inadequately trained, placed in a different job from that for which they were trained, or placed in a job that they do not like. Much of the interest in preapprenticeship programs for women and minorities entering the skilled trades, for example, assumes that compensatory skill training will reduce attrition in this way (Briggs, 1978; Kane, Dee, & Miller, 1977; Women's Bureau, 1974).

4. Lack of acceptance by the work group may contribute to attrition. Organizational commitment has been found to be an important factor in retention (Mowday, Steers, & Porter, 1978), and acceptance may be important in developing organizational commitment. Several studies have found unsatisfactory peer group interactions to be related to turnover (see Porter & Steers, 1973, for a summary). Better ways of incorporating women into their units or increasing their acceptance in military settings should lead to decreased attrition, according to the organizational socialization model (Feldman, 1980; Van Maanen & Schein, 1979).

5. Groups with poor interpersonal climate or with ineffective leadership may contribute to attrition. Research on the role of group climate and leadership in turnover has found that group climate factors such as role clarity and the quality of the interactions between leaders and members predict turnover (Dansereau, Cashman, & Graen, 1973; Graen, Liden, & Hoel, 1982; Krackhardt, McKenna, Porter, & Steers, 1981; Porter & Steers, 1973). For example, subordinates who are not clear about what to do to receive rewards and who do not see their supervisors as sources of help are more likely to attrite than other subordinates in the same group.

6. Lack of resources to cope with a stressful environment may contribute to attrition. Women may act out their distress by using alcohol or drugs, by taking unauthorized leave or by becoming depressed and apathetic or involved in an intense interpersonal relationship which then may lead to early marriage, pregnancy, and attrition. One way to combat such attrition would be to help women learn positive techniques for coping with stress such as those used by Sarason and Novaco (1982) with male Marine recruits.

7. Dissatisfaction with Marine Corps experiences may contribute to attrition. When the level of dissatisfaction reaches a certain threshold, women may consider ways to get out, such as through pregnancy or drug use. Improvements in conditions that lead to dissatisfaction should lead to decreased attrition under this model (Porter & Steers, 1973).

8. Vulnerability to unplanned pregnancy may contribute to attrition, even among women who are not having difficulty in the USMC. Adler (1981) suggests that several factors explain this vulnerability. Women who become pregnant accidentally often have weak feelings of self-competence and control, a conflict over their own sexuality, a desire to demonstrate their adulthood, are in an environment that reinforces motherhood as a female role, and lack career goals. In addition, they have often had recent exposure to stressful events. Particular women, then, may be especially prone to pregnancy, and counterattrition efforts could concentrate on providing them with both adequate sex education and contraception, if needed, and extra support and help in developing confidence and establishing career goals.

9. Unsatisfactory performance may contribute to attrition. The bulk of attrition for women may be those who are marginal performers or people with behavior problems, even though the official reason for discharge may be pregnancy. From the organization's viewpoint, such attrition would not be a problem but the solution to a problem (Dalton, Krackhardt, & Porter, 1981). An organization's goal should be to discharge them as soon as possible or keep them from being hired.

Of the factors that are hypothesized to contribute to attrition, only vulnerability to pregnancy is unique to women. Men as well as women may be influenced by the other factors and want to leave the USMC before the end of their first enlistments. Because honorable discharges are more difficult for men to obtain before the end of their enlistments, the effect of these factors may not be seen for men until the opportunity for reenlistment occurs (Royle, 1983; Thomas, 1978). Therefore, efforts to decrease attrition among women by altering the factors that contribute to it may also increase retention of both men and women.

Purpose

The purpose of this research effort was to identify factors in the women's backgrounds and USMC experiences that are related to attrition so that ways to decrease attrition could be developed.

METHOD

Survey and Sample

A survey was used to collect data on two samples of Marine Corps women and their work settings. One sample included women who were attriting before the end of their first enlistments. These women had been Marines for 9 to 36 months. A second sample included women on active duty with between 9 and 24 months of enlisted service. Similar surveys were also administered to their supervisors. The women's surveys provided information about family background, personality variables, job descriptions, social climate in work groups and living quarters, experiences of harassment or discrimination, stress measures, and measures of satisfaction. Supervisor's surveys provided information on the women's functioning within the work group and their acceptance by other Marines.

Surveys were administered between 1 September 1981 and 30 June 1982. In October 1983, the Historical Master File (HMF) was examined to identify women who completed the survey while on active duty and subsequently attrited. The official reason given for discharge was also extracted from the HMF and added to the woman's survey data. Table 1 displays the number of women in the sample who attrited or who remained as well as the number for whom both women's and supervisors' surveys were completed. Further information on the survey itself, sampling techniques used, and response rates is available in the Kerce and Royle (1984) technical report.

Table 1
Survey Sample Sizes

Attrition Outcome	Number of Surveys Returned			Total
	Woman and Supervisor	Supervisor Only	Woman Only	
Attrited at survey	47	39	11	97
Attrited later	71	--	21	92
Did not attrite	365	76	73	514
Total	483	115	105	703

Analysis

Attrition Criterion

To distinguish among different attrition situations, the criterion of attrition was divided into four categories on the basis of information from the surveys and the HMF. Women who completed their service obligation and those who were still on active duty as of October 1983 were categorized as nonattrites. Women were classified as attrites if they were attriting at the time of the survey or were subsequently identified as attrites on the HMF. Based on the reason for attriting given on the HMF or their survey, they were classified as pregnant attrites or as attrites leaving for other reasons (mostly for behavior problems or unsuitability).

In order to distinguish pregnant attrites with some future interest in the USMC from those with no future interest, responses to three survey questions were examined--interest in joining the reserves, in returning to active duty when their children were older, and in remaining in the USMC if better child care were available. Because responses to these items were highly correlated, interest in joining the reserves was selected. Those women responding at least possibly interested were classified as pregnant with interest, while those responding maybe interested later or less were classified as pregnant with no interest. Pregnant attrites who had not answered this question were omitted from further analyses. (This classification does not distinguish between those women who may have become pregnant intentionally in order to attrite and other women because, although women with interest in the USMC would probably not have become pregnant in order to

attrite, all women without interest in the USMC would not necessarily have become pregnant intentionally.)

Contributors to Attrition

For each of the possible factors contributing to attrition discussed in the introduction--inadequate screening, unrealistic expectations, improper placement, lack of acceptance, less effective groups and leaders than others, lack of resources to cope with stress, dissatisfaction with the USMC, vulnerability to pregnancy, and unsatisfactory performance--relevant questions were selected from the women's and supervisors' surveys. In many cases, single-item measures were used, such as usefulness of recruit training, number of women in the working group, and number of USMC training courses attended. In others, composite scales were developed from individual items to measure factors such as perceived job stress, mature coping strategies, and ability to talk with others about problems. For variables included in both the women's and supervisors' surveys, such as group climate and acceptance of the woman by the group, separate composites were constructed on the woman's and the supervisor's responses so that two points of view were available. A mean of the two was also calculated. Table A-1 in the Appendix contains names and brief descriptions of the variables included. Details of scale construction and descriptive data for all Marines surveyed can be found in the Kerce and Royle (1984) report.

For each hypothesized contributor to attrition, one-way analyses of variance were performed for all relevant variables and scales to determine whether the four attrition groups differed significantly on each variable. Scheffe' tests of the significance of the difference between all pairs of means were calculated when the overall F statistic was significant at the .05 level or greater. One-way analyses of variance were also performed omitting the women who took the survey at the time of premature discharge. This procedure tested for any effects that might have been related to their taking the survey at that time, that is, at a time when the decision to leave had already been made and might color perceptions accordingly. When this group is omitted, results can be considered predictive.

To examine the interaction between social support and stress, correlations between measures of social support and stress were calculated, both for the group as a whole and for women who responded as internals and externals on a locus of control measure. Correlations between social support measures and symptoms of stress were also calculated for internals and externals under conditions of both high and low perceived stress.

Multivariate Analyses

Several statistical analyses were used to examine the relative usefulness of survey items in discriminating among attrition groups. First, when significant differences were found in several variables relevant to a hypothesized cause of attrition, their combined usefulness was examined using discriminant analysis. This technique provided a measure of the proportion of the total variance explained by including in a prediction equation all variables that differentiated significantly among criterion groups. This measure was the sum of the squares of the canonical correlations for each significant canonical discriminant function.

Second, a series of multiple regression analyses was performed to determine the percentage of variance accounted for when measures of all the hypothesized contributors to attrition were used together. Variables were selected for the multiple regression

analyses using several criteria. Variables were selected if they differed significantly in univariate analyses of variance and provided useful, nonredundant information in discriminant analyses. For variables such as men's attitudes toward women in their group for which women's, supervisors', and mean ratings were available, the mean ratings were used because they incorporated two different points of view. Composite variables such as ability to communicate with Marine Corps personnel in general were used rather than individual variables (e.g., the ability to talk with women officers) for greater stability. The variables used in the regression analyses included race, marriage plans, coping strategies, locus of control, traditional role view, the ability to communicate composite, women's ratings of satisfaction with a USMC career and the job, number of friends, supportiveness of friends, woman-supervisor mean ratings of centrality in the work group, group climate, amount of nonwork contact with group members, and attitudes of the men, the supervisor, and the command toward having women in the group, the supervisor's overall rating of the woman's performance, and the discrepancy between how the woman and her supervisor described the work group climate.

Each of these analyses used a stepwise procedure and a dichotomous nonattrite/attrite criterion. Four regression analyses were performed, one grouping all attrites into one category, and the other three comparing the nonattrite category with the attrition categories, one at a time. These four multiple regression analyses were performed separately for single and married women as well as for the group as a whole. For the analyses on married women, the marriage plans item was replaced with one that asked about husband's opinion of whether the woman should remain in the USMC. Because of the relatively small numbers in some of the attrition groups and because of the descriptive nature of the study, cross-validations were not performed.

Finally, the items that were most related to attrition were also used to predict the four attrition categories in an overall discriminant analysis. Because the discriminant analysis program required complete data for each person, the women's responses to climate and acceptance questions were used in place of the woman-supervisor mean to avoid unacceptably low sample sizes. Also, two variables with more incomplete data than others (use of other people for help and supportiveness of friends) were omitted because they contributed little in the regression analyses and would have decreased the sample size further.

RESULTS

Contributors to Attrition

Inadequate Screening

The hypothesis that inadequate screening contributes to attrition received some support, but only for variables related to race, locus of control, coping strategies, and traditional female roles, as can be seen in Table 2. For most background variables that might prepare women for Marine Corps living, such as having brothers, being active in sports or mostly male activities, or being from a lower social class, differences between attrites and nonattrites were not significant. Black women were significantly less likely to attrite than white, Hispanic, Asian or Native American women.

Table 2
Differences in Background Variables Between Attrites and Nonattrites

Variable	Attrition Category				Significance Test	
	Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
					F	p
Variables Related to Marine Corps Living						
Number of brothers	1.78	2.15	1.77	1.68	.86	.46
Number of siblings	3.43	3.95	3.68	3.20	.96	.41
Race (percent black)	15.13	9.76	4.35	4.88	3.08	.03
Social class	3.03	3.10	2.98	3.07	.22	.88
Time spent in mostly male groups	3.14	3.18	2.74	3.09	1.63	.18
Group participation	2.56	2.30	2.90	2.85	1.86	.14
Hours in sports activities	10.25	11.54	8.72	12.95	1.49	.22
Weight/height ratio	6.35	5.97	6.42	6.59	.09	.97
Variables Related to Maturity						
Percent in two-parent households	72.10	73.17	78.26	70.73	.41	.75
Years of education	12.29	12.16	12.25	12.43	.79	.50
Number of classes failed to complete	.48	.49	.46	.48	.01	.99
Age at enlistment	19.28	19.07	18.97	19.56	.71	.54
Internal locus of control	2.92	2.92	2.76 ^a	2.70 ^a	6.34	.0003
Mature coping strategies	2.40	2.38	2.20	2.18	3.47	.02
Variables Related to Traditional Female Roles						
Percent with mother with traditional job	88.44	83.78	90.32	92.75	.63	.60
Number of children desired	2.45	2.70	2.59	2.23	1.43	.23
Marital plans	3.33	4.27 ^{a,b}	3.84 ^a	3.53	5.91	.0000
Percent married	18.91	60.98 ^{a,b}	42.03 ^a	24.39	17.04	.0000
Balancing career-family demands	2.85	3.76 ^{a,b}	3.70 ^{a,b}	3.03	17.17	.0000
Traditional role view	2.50	2.78	2.82	2.93	4.36	.005
Not volunteer for combat if possible	1.26	1.34	1.36	1.37	.58	.63
Traditionality composite	3.15	3.90 ^a	3.85 ^a	3.36	10.03	.0000

Note. Variables are mean values for each group except where percentages are indicated. Variables related to Marine Corps living and maturity were coded so that higher numbers indicate higher levels of the trait (e.g., higher social class, more mature coping strategies). Higher weight/height ratios indicate overweight. Variables related to traditional female roles were coded so that higher numbers indicate more traditional views (e.g., more likely to plan to be married, less likely to volunteer for combat). Refer to Table A-1 of the Appendix for more detail on variable content and scales.

^aThis group mean differs significantly from that for nonattrites.

^bThis group mean differs significantly from that for attrites leaving for other reasons.

Most variables related to maturity were not associated with attrition. Older, more educated women were no less likely to attrite than were other women. The scores for locus of control and coping strategies, however, were significantly lower for pregnant attrites with no future interest in the USMC and for attrites leaving for other reasons. These women were less likely to feel that they themselves influenced what happened to them and were also less likely to have used more mature coping strategies (i.e., discussing problems, asking for help). They were more likely to have done nothing in the face of a problem, hoping it would solve itself. Pregnant attrites with interest in the USMC did not differ significantly from nonattrites on these measures.

Women who attrited were clearly more traditional in their views of women's roles than nonattrites. They were significantly more likely to be married or plan to marry and to put family responsibilities over career demands. Although differences between nonpregnant attrites and nonattrites were not significant, the attrites consistently were more traditional than nonattrites. The aspect of traditionality most relevant to attrition seemed to be marriage and family roles and not the larger roles of women in society. The groups did not differ significantly on their views of volunteering for combat, having a mother in a nontraditional job, or even in the size of family they desired. They differed more in how they personally were able to balance traditional and nontraditional roles at that time, a situation that may not be predictable from background variables at enlistment.

When the four most significant background variables (locus of control, coping strategies, the traditionality composite, and race) were used together in a discriminant analysis, they predicted about 12 percent of the variance in attrition (canonical correlations of .31 and .15 for the first two functions with p 's of .00004 and .02, respectively), a significant, although not large, amount. The woman's race added little to the prediction, suggesting that differences between black women and other women on other variables account for the differences in attrition between them. The greatest difference was in marital status, with 26.6 percent of nonblack women married, but only 16.4 percent of black women married.

Thus, although background variables accounted for 12 percent of the variance, they were not demographic variables that could be used in screening. Most of the significant variables were ones that could change after entry, either through changed circumstances (marriage or facing a choice between motherhood and a military career) or by interventions (affecting locus of control and coping strategies).

Unrealistic Expectations

The data provided little support for the hypothesis that lack of prior knowledge causes unrealistic expectations that lead to attrition (see Table 3). An indirect measure of prior knowledge, having a relative in the USMC or other branch of the armed services, was not related to attrition. A more direct measure, the woman's rating of her prior knowledge, also did not differ significantly. Women who attrited did report having less accurate information about the Marine Corps when they joined than did other women. When women who completed the survey at attrition were omitted, however, differences in information were no longer significant, suggesting more of a "sour grapes" effect than an actual difference in information presented to the women at recruitment. Use of all these variables in a discriminant analysis produced no significant discriminant functions.

Table 3

Differences Between Attrites and Nonattrites in Prior Knowledge of the USMC

Variable	Attrition Category				Significance Test	
	Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
						F
Relative in USMC	37.44%	52.50%	35.82%	41.46%	1.29	.28
Relative in other service	75.30%	79.49%	87.30%	80.00%	1.61	.19
Female relative in military service	3.13%	5.13%	6.45%	0.00%	1.20	.31
Good idea of USMC preenlistment	2.96	2.93	2.84	2.66	1.09	.35
Recruiter well- informed	2.60	2.49	2.70	2.46	.54	.66
Recruiter accurate Entire sample	2.66	2.58	2.67	2.32 ^a	3.07	.03
Attrites at time of survey omitted ^b	2.66	2.68	2.79	2.47	1.31	.27
Usefulness of recruit training						
Entire sample	4.00	4.00	3.67 ^a	3.65	4.07	.007
Attrites at time of survey omitted ^b	4.00	3.96	3.67	3.56	3.62	.01

Note. Scores for the first three variables are percentages of those having relatives in the military. Scores on the remaining items are means on a 5-point scale (4-point scale for "Recruiter accurate") with 5 = the most positive response.

^aThis group mean differs significantly from that for nonattrites.

^bSample sizes for this analysis were 421, 22, 43, and 32 for the four attrition categories.

Pregnant attrites with no interest in the USMC and attrites leaving for other reasons rated recruit training as significantly less useful in preparing them for the USMC than did nonattrites and pregnant attrites with interest in the USMC. Unlike ratings of recruiter accuracy, these differences remained significant when women completing the survey at discharge were omitted. If this difference is due to recruit training that has given nonattrites and pregnant attrites with interest in the USMC more realistic expectations, it provides some support for the hypothesis that realistic expectations are important in combating attrition.

Improper Placement

The relationship of improper placement to attrition was also very limited, and then only for reasons unrelated to pregnancy. Women did not seem to be attriting because they were placed in jobs for which they had not been trained (see Table 4). Differences in the amount of total training received were related to attrition, but in a direction opposite to that expected, and elimination of women taking the survey at attrition eliminated this effect.

Table 4
Differences Between Attrites and Nonattrites in
Measures of Appropriate Placement

Variable	Attrition Category				Significance Test	
	Nonattrites (<u>n</u> =423)	Pregnant Attrites With Interest (<u>n</u> =41)	Pregnant Attrites With No Interest (<u>n</u> =68)	Attrites Leaving for Other Reasons (<u>n</u> =41)		
					F	p
Training						
Mean number of training experiences (USMC and prior)	.71	.89	.97	.94	3.14	.025
Mean number of USMC courses taken	.26	.26	.29	.12	1.43	.23
Percent who got choice of field	77.26	82.76	89.09	52.94 ^a	5.59	.0009
Percent who tried to change field	33.82	45.00	46.15	32.43	1.79	.15
Percent successful in changing field ^b	49.15	22.22	38.46	28.57	1.06	.37

^aThis group mean differs significantly from all other group means.

^bBecause this group included only those trying to change their fields, sample sizes were 59, 9, 13, and 7 for the four attrition categories.

Placement in a chosen occupational field, honoring either an enlistment guarantee or a preference, was significantly related to nonpregnancy attrition, as Table 4 indicates. Only about half of the nonpregnant attrites were placed in jobs of their choice, while over three-fourths of nonattrites and over 80 percent of pregnant attrites received jobs of their choice. Once women were in an occupational field, differences in attempts to change their field and the success of those attempts were not significant. Because only those who tried to change their fields were asked if they were successful, the sample sizes for the latter question were quite small. Both the pregnant attrites with interest in the USMC and the nonpregnant attrites reported much less success in changing their fields than nonattrites, differences that might have been significant with larger sample sizes.

A person-job mismatch appeared to affect attrition (see Table 5), with the most traditional women in the least traditional jobs being somewhat more likely to attrite for reasons other than pregnancy. Differences were not significant, however (chi square of 4.68, $p < .25$). For the least traditional women, job placement was not related to attrition.

Table 5
Differences in Attrition as Affected by
Traditionality in Person-Job Match

Attrition Category	Women Attrites (%)			
	Most Traditional Women		Least Traditional Women	
	Most Traditional Jobs	Least Traditional Jobs	Most Traditional Jobs	Least Traditional Jobs
Pregnant with interest in USMC	12	9	1	4
Pregnant with no interest	20	18	5	6
Leaving for other reasons	7	21	6	6

Lack of Acceptance

Acceptance of a woman by the group was strongly related to attrition. Acceptance was measured in several ways from both the woman's and her supervisor's perspective. The surveys contained items on attitudes toward women in general, negative behaviors toward the particular woman, and positive behaviors related to giving her a central position in the group. Women's surveys also measured the woman's feelings of acceptance and her perceptions of her ability to communicate with others in the USMC about her problems. Differences among attrition groups were significant for most of these variables.

As Table 6 illustrates, attitudes of the men, the supervisor, and the command toward having women in the unit did not differ significantly as perceived by women attrites and nonattrites. Supervisors of attrites, especially pregnant attrites with an interest in the

Table 6

Differences Between Attrites and Nonattrites in Acceptance Into the Work Group

Variable	Source ^a	Attrition Outcome				Significance Test	
		Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
						F	p
Attitudes Toward Women							
Men's attitudes	W	3.02	3.24	3.24	3.19	1.32	.27
	S	3.39	2.81	3.43 ^c	3.30	3.56	.07
	M	3.18	2.73 ^b	3.13	3.03	3.18	.03
Supervisor's attitude	W	2.52	2.78	2.56	2.91	1.68	.17
	S	3.74	3.43	3.78	3.37	1.46	.23
	M	3.61	3.31	3.70	3.23	2.41	.07
Command attitude	W	2.81	3.05	2.98	2.89	1.06	.37
	S	3.59	3.27	3.29	3.41	2.20	.08
	M	3.38	3.06	3.16	3.18	3.05	.03
Change in men's attitude	S	3.36	2.94 ^b	3.14	2.90 ^b	6.35	.0002
Change in supervisor's attitude	S	3.29 ^c	2.84	3.30 ^c	3.20	4.43	.004
Negative Behaviors							
Percent reporting:							
Incidence of exclusion	W	40.25	34.21	44.12	55.00	1.43	.23
Incidence of discrimination	W	36.78	34.21	44.78	51.28	1.33	.21
Incidence of favoritism	W	35.91	41.03	32.84	35.00	.24	.87
On-job harassment	W	1.92	2.21	2.17	2.18	2.52	.06
	S	1.88	1.91	2.00	2.27	2.21	.09
	M	1.91	2.02	2.07	2.32 ^b	3.45	.02
Specific sexual harassment	W	.32	.32	.33	.61	1.85	.14
On-job							
Unwanted touching	W	2.00 ^d	2.10	1.94 ^d	2.68	4.78	.003
Unwanted sexual jokes or repeated comments of a sexual nature	W	3.06	3.08	3.34	3.27	1.07	.36
Off-job							
Unwanted touching	W	2.43	2.49	2.24	2.93	2.64	.05
Unwanted sexual jokes or repeated comments of a sexual nature	W	3.37	3.13	3.31	3.37	.46	.71
Woman's Feelings of Acceptance							
Comfort in USMC	W	3.85	3.60	3.75	3.43	2.92	.04
Acceptance	W	3.85	3.61	3.70	3.62	2.58	.05
Integration Into the Unit							
Woman helped	W	4.02	4.04	3.90	4.01	.80	.49
	S	3.87	3.85	3.92	3.74	.64	.59
	M	3.94	3.93	3.93	3.80	.64	.59
Woman given central place	W	3.61	3.57	3.30 ^b	3.50	3.76	.01
	S	3.72	3.45	3.59	3.30 ^b	4.68	.004
	M	3.65	3.59	3.40 ^b	3.32	4.75	.003
Woman included in non-work activities	W	3.62	3.61	3.35	3.71	1.59	.19
	S	3.82	3.38	3.64	3.57	3.46	.02
	M	3.72	3.49	3.44	3.61	2.84	.04

Note. All variables are means on a 5-point scale with 5 = the positive or high end. See Table A-1 in the Appendix for specific scale descriptors.

^aW = from woman's survey; S = from supervisor's survey; M = mean of woman's and supervisor's responses. Because means were calculated only when data for both women and their supervisors were available, sample sizes are lower on M items.

^bGroup mean differs significantly from that of nonattrites.

^cGroup mean differs significantly from that of pregnant attrites with interest in USMC.

^dGroup mean differs significantly from that of attrites leaving for other reasons.

USMC, reported that the men in the groups, the supervisors themselves, and the commands held less positive attitudes toward women in the USMC than did supervisors of nonattrites. The effect of the supervisor's feelings on the woman-supervisor mean generally caused these means to differ significantly as well. When women completing the survey at attrition were omitted, the difference in men's attitudes as perceived by the supervisors were no longer significant, and the differences in supervisor and command attitudes were only marginally significant (p 's of .05 and .06, respectively). When asked the effect of the particular woman on the men's and the supervisor's attitudes about women, supervisors of pregnant attrites with interest in the USMC reported the attitudes became less positive toward women as a result of the particular women, in spite of rating them as good performers. This effect decreased in significance when the women who completed the survey at attrition were omitted, suggesting that part of the effect may have been due to the supervisors' disappointment that these good workers were leaving, thus confirming their negative stereotypes about women.

Attrites, particularly nonpregnant ones, were more likely than nonattrites to report having been harassed, although they were not more likely to label this harassment as exclusion or discrimination. Nonpregnant attrites were also more likely than pregnant attrites or nonattrites to report sexual harassment in the form of unwanted touching, both on and off the job.

Women who stayed in the USMC also reported significantly higher feelings of acceptance than did attrites. When women who completed the survey at attrition were omitted, however, differences were nonsignificant, suggesting that some of the relationship was due to negative feelings associated with leaving.

Finally, attrites were less likely than nonattrites to have been accepted into the working group as central, contributing members, a behavioral measure of acceptance. Attrites and nonattrites did not differ significantly in how much help they had received or had been refused at first, as reported by both the women and their supervisors. Both the women and their supervisors, however, reported that nonattrites were given central positions with important tasks significantly more often than attrites, particularly pregnant attrites with no interest in the USMC and attrites who left for other reasons. When women who took the survey at attrition were excluded from the analysis, this relationship decreased in magnitude but was still statistically significant. Nonattrites were also more likely than attrites to be included in the group's activities outside of work. Nonpregnant attrites saw themselves as less likely to be included, while supervisors saw pregnant attrites with interest in the USMC as less often included.

Discriminant analysis that included the most significant variables in the initial analyses of variance using variables from the women's surveys (attitudes toward women, acceptance, sexual harassment, on-job harassment, centrality and nonwork contact) yielded one function that accounted for 4 percent of the variance (canonical correlation of .19, $p = .10$), with centrality and nonwork contact contributing the most to correctly classifying the women into attrition groups. Because removal of the acceptance variable resulted in no change in the canonical correlation, this variable was not included in later multivariate analyses. When woman-supervisor mean variables (attitudes toward women, on-job harassment, centrality, nonwork contact) were used in place of women's variables in the discriminant analyses, 10 percent of the variance was accounted for (canonical correlation of .32, $p = .0007$), with harassment on the job also contributing to classification.

Because of the importance of integration into the work group as a means of combating attrition, survey responses were further analyzed to discover the factors in a woman's background or Marine Corps experience that were most related to such integration. Women who contradicted common stereotypes by being technically proficient were better integrated and accepted, as were those who worked well with others. Groups with supportive social climates in general, supportive climates toward women, and flexibility in performing their work were better able to integrate women. The most important factor in whether a group accepted women was the general climate in the group itself, not the group's attitude toward having women in it. Results are reported in detail in Royle (1984).

Less Effective Groups and Leaders

Women who remained in the USMC rated the climate of their work groups as significantly better than did attrites (see Table 7). Climate, as measured by these scales, did not pertain specifically to women but to the general climate in the group. Among the individual work group climate measures, the variables that were most highly related to attrition were those measuring good work group functioning--member involvement, officer support, personal status, order and organization, clarity, and non-punitive officer control.

Discriminant analysis using the work group climate measures accounted for 7 percent of the variance using both the woman's climate ratings (canonical correlation of .27, $p = .001$) and the woman-supervisor mean climate ratings (canonical correlation of .26, $p = .04$). A mean climate measure was calculated for use in further analysis.

When women were asked how easy it would be to talk to different people in the USMC organization about their problems, attrites, particularly pregnant attrites with no interest in the USMC, reported more difficulty in doing so. Differences were largest for ability to talk to the company, battalion, or squadron commander. They were also significant for the first sergeant, other enlisted women, and women officers. Problems talking to other women could have been due to having no other women available with whom to talk as well as to communication difficulties. Results of discriminant analysis of the variables measuring the woman's perceptions of how easy it was to talk to various people were nonsignificant, explaining about 4 percent of the variance (canonical correlation of .20, $p = .10$), with ability to talk to the company, battalion, or squadron commander and to other enlisted women making the largest contribution.

Women who had good relations with their supervisors were less likely to attrite than other women. Pregnant attrites reported more conflicts with their supervisors than nonattrites and that supervisors' policies were more unclear. Nonattrites were significantly more satisfied with their supervisors than attrites. When asked what they had done in the past when encountering problems, pregnant attrites with no interest in the USMC were less likely than other groups to report going to a supervisor or other Marine Corps sources of help when they first arrived, although differences were only marginally significant.

When women and their supervisors described the climate in their work groups and specific behaviors toward the women, disagreements about those descriptions were greater between attrites and their supervisors than between nonattrites and their supervisors. These disagreements were highly significant for work group climate and marginally so for current behaviors toward the women. Such disagreements may have been due to differences in perspective or to the supervisor's lack of awareness of what

Table 7
Differences Between Attrites and Nonattrites in Measures of
Group and Supervisory Effectiveness

Variable	Source ^a	Attrition Category				Significance Test	
		Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
						F	p
Work Group Climate							
Openness to newcomers	W	3.80	3.61	3.52	3.67	1.23	.30
	S	4.16	4.33	4.45	4.07	1.32	.27
	M	4.09	3.97	4.05	3.80	1.38	.25
Involvement	W	2.80	2.54	2.55 ^b	2.38 ^b	7.69	.0000
	S	3.08	2.95	3.04	2.97	.86	.46
	M	2.55	2.73	2.78	2.66 ^b	6.15	.0004
Peer cohesion	W	2.82	2.73	2.79	2.82	.52	.67
	S	3.06	2.86	3.00	2.95	2.07	.10
	M	2.94	2.81	2.91	2.89	1.57	.19
Officer support	W	2.78	2.36 ^b	2.56	2.54	.58	.0002
	S	3.22	3.11	3.22	3.00	1.45	.23
	M	3.00	2.74 ^b	2.91	2.71 ^b	5.41	.001
Personal status	W	2.72	2.32 ^b	2.45 ^b	2.53	8.06	.0000
	S	3.11	3.00	3.12	2.95	.92	.43
	M	2.91	2.62 ^b	2.78	2.67	5.48	.001
Order and organization	W	2.67	2.46	2.38 ^b	2.44	6.28	.0003
	S	2.80	2.83	2.85	2.72	.29	.83
	M	2.75	2.61	2.62	2.59	2.68	.05
Clarity	W	2.78	2.50 ^b	2.51 ^b	2.56	7.22	.0001
	S	3.01	2.92	3.07	2.92	.66	.57
	M	2.89	2.72	2.78	2.73	3.12	.03
Nonpunitive officer control	W	2.73	2.58	2.57	2.41 ^b	4.35	.005
	S	3.13	3.15	3.25	3.17	1.02	.38
	M	2.94	2.84	2.95	2.72	2.92	.03
Overall climate	W	2.75	2.51 ^b	2.55 ^b	2.53 ^b	9.66	.0000
	S	3.05	2.98	3.05	2.96	1.03	.38
	M	2.91	2.71 ^b	2.79	2.72 ^b	7.80	.0000
Ability to Communicate							
Woman able to talk to:							
Male coworkers	W	3.57	3.34	3.51	3.32	1.11	.34
Enlisted women	W	3.79	3.54	3.45	3.49	3.30	.02
Male NCOs	W	3.38	3.10	3.07	3.12	2.33	.07
Female NCOs	W	3.37	3.29	3.04	3.02	2.55	.06
First sergeant	W	3.25	2.85	2.84	3.12	2.96	.03
Commander	W	2.77	2.68	2.22 ^b	2.47	4.62	.003
Women officers	W	2.76	2.63	2.23 ^b	2.62	3.76	.01
Chaplain	W	3.80	3.65	3.64	3.62	.64	.59
Ability to talk, composite	W	3.34	3.12	3.02 ^b	3.08	4.66	.003
Relations With Supervisor							
Satisfaction with supervisor	W	3.90	3.54	3.65	3.61	2.65	.05
Conflicts with supervisor	W	2.15	2.61 ^b	2.37	2.41	3.69	.01
Unclear policies	W	2.31	2.73	2.58	2.64	4.71	.003
Unsure of duties	W	2.38	2.68	2.31	2.62	2.28	.08
Percent turning to supervisor for help with:							
Job problems	W	53.01	41.94	48.15	69.70	1.92	.13
Other problems	W	10.34	5.26	14.29	5.88	.92	.43
Newcomer problems	W	30.34	30.00	12.24	25.00	2.36	.07
Woman-supervisor disagreement in:							
Group actions when woman arrived	D	12.65	13.41	13.08	11.87	.41	.74
Group actions now	D	13.10	13.91	14.42	14.88	2.31	.08
Work group climate	D	10.10	12.76	12.26 ^b	13.71 ^b	8.09	.0000

Note. All variables except "Supervisor helps with" variables are means on a 5-point scale with 5 = the positive or high end. The "Supervisor helps with" variables are percentages of women who reported going to the supervisor for help in each incident. See Table A-1 of the Appendix for specific scale descriptors.

^a W = from woman's survey; S = from supervisor's survey; M = mean of woman's and supervisor's responses; D = discrepancy between woman's and supervisor's responses. Because means were calculated only when data for both women and their supervisors were available, sample sizes are lower on the M and D items.

^b Group mean differs significantly from that for nonattrites.

was happening in the group. Regardless of the cause, they reflect a lack of communication between the women and their supervisors.

Lack of Resources to Cope With Stress

Stress was related to attrition, but the presence of social support helped women deal with stressful situations. Stress measures included both intrinsically stressful situations and interpersonal stressors. Intrinsically stressful situations included women holding positions in less traditional occupations or in field settings or holding positions in which the woman was the only or the first woman present. Understaffed situations or those rated as stressful by the women and their supervisors were also included. As indicated in Table 8, women in these types of positions, however, were not significantly more likely to attrite than other women. The only condition in which a woman was more likely to attrite was when she was the first woman in a group, and then attrition was due to behavior problems or unsuitability, not pregnancy.

Women who attrited for reasons other than pregnancy reported more interpersonal stress than nonattrites. When women completing the survey at discharge were omitted, this relationship increased, perhaps because the decision to obtain an early discharge had acted to decrease the stress. Pregnant attrites with interest in the USMC reported more stress than other pregnant attrites, perhaps because they cared about their USMC relationship while other pregnant women no longer did. The types of stress that were related to attrition are worthy of note. Nonattrites reported being given responsibility for work-related decisions more often than attrites. Although this may have been stress-producing, it also is a measure of acceptance by the work group. Attrites were more likely than nonattrites to report conflicts with their supervisors, unclear policies of their supervisors, and performance difficulties. Attrites, particularly those with interest in the USMC, were much more likely to report conflicts between family and Marine Corps demands.

Physical symptoms of stress were also higher among the attrites, both work-related symptoms, such as inability to concentrate or nervousness at work, and nonwork-related symptoms, such as depression and headaches. Although some of these latter symptoms are symptoms of pregnancy, the nonpregnant attrites were equally likely to suffer from them.

Social support was related to the ability to cope with stress and to attrition, although the relationship was complex. The number of contacts with family and friends did not differ significantly among attrition groups (see Table 9), and correlations between contacts and stress were positive (see Table 10), with those in more stressful positions turning to their support networks more often than those who perceived less stress.

The quality of the support was more often related to stress and attrition than the quantity. Women who rated their Marine Corps friends as more competitive were more likely to attrite than other women (see Table 9). Also, women who sought help from others and those who found both their friends to be supportive and their work group to be cohesive reported less perceived stress and fewer symptoms than others (see Table 10). Seeking help from others and having supportive friends were also related to attrition, but only for women with an external locus of control, that is, women who felt they personally had little control over what happened to them.

Table 8
Differences in Stress Between Attrites and Nonattrites

Variable	Source ^a	Attrition Category				Significance Test	
		Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
		F	p				
Intrinsically Stressful Situations							
Percent in nontraditional jobs and settings	W	26.48	24.39	33.33	36.59	1.08	.36
Percent of women in group	M	47.19	44.48	50.19	48.77	.27	.85
Percent of women seen daily	W	47.33	51.54	45.14	49.31	.28	.84
Percent who were sole woman	W	23.17	29.27	20.29	29.27	.64	.59
Percent who were first woman	W	25.60	19.51	23.89	47.37 ^{b,c}	3.35	.02
	S	19.83	27.27	21.43	22.58	.37	.78
Percent having women in chain of command	S	37.43	46.88	33.93	42.86	.59	.62
Staffing level	S	-.41	-1.24	-.25	-1.00	.22	.88
Perceived understaffing	W	2.81	2.90	3.21	2.90	2.03	.11
	S	3.03	3.18	3.09	3.00	.24	.87
	M	2.94	3.02	3.16	2.95	.89	.45
Perceived stress rating of job	W	3.22	3.32	3.41	3.38	.62	.60
	S	3.12	3.15	2.93	3.50	1.41	.24
	M	3.16	3.27	3.10	3.43	.91	.43
Interpersonal Stress							
Unsure of duties	W	2.38	2.68	2.31	2.62	2.28	.08
Unsure of leadership role	W	2.43	2.46	2.37	2.62	.55	.65
Responsibility	W	3.03	2.85	2.62 ^b	2.77	3.48	.02
Conflicts with supervisors	W	2.15	2.61 ^b	2.37	2.41	3.69	.01
Conflicts with coworkers	W	2.29	2.56	2.41	2.54	1.92	.12
Conflicts with subordinates	W	2.05	2.33	1.75	2.67	2.05	.11
Unclear policies	W	2.31	2.73	2.58	2.64	4.71	.003
Group pressures	W	2.64	3.05	2.64	2.87	2.08	.10
Family conflicts	W	2.09	2.90 ^b	2.32	2.38	6.26	.0004
Performance difficulties	W	1.73	2.00	1.84	2.05	2.68	.05
Job stressors, composite	W	2.34	2.63 ^b	2.37	2.55	4.73	.003
Symptoms of Stress							
Symptoms at work	W	2.59	2.90	2.76	2.79	3.83	.01
Other symptoms	W	2.77	3.25 ^b	3.05 ^b	3.19 ^b	9.88	.0000
Total symptoms	W	2.68	3.08 ^b	2.90	2.98	7.84	.0000

Note. All variables except the first seven were rated on a 5-point scale with 5 = high levels of the problem or symptom. See Table A-1 of the Appendix for specific scale descriptors.

^aW = from woman's survey; S = from supervisor's survey; M = mean of woman's and supervisor's responses. Because means were calculated only when data for both women and their supervisors were available, sample sizes are lower on M items.

^bGroup mean differs significantly from that of nonattrites.

^cGroup mean differs significantly from that of pregnant attrites with interest in USMC.

Table 9
Differences In Social Support Measures Between Attrites and Nonattrites

Variable	Attrition Category				Significance Test	
	Nonattrites (<u>n</u> =423)	Pregnant Attrites With Interest (<u>n</u> =41)	Pregnant Attrites With No Interest (<u>n</u> =68)	Attrites Leaving for Other Reasons (<u>n</u> =41)		
					F	p
Sources of Support						
Number of contacts with:						
Family	5.77	4.38	4.89	5.88	1.25	.29
Friends at home	3.18	2.88	2.62	4.10	.97	.41
Local friends	1.99	3.88	1.95	3.24	2.18	.09
Total	10.97	11.15	9.61	12.86	.80	.50
Male friends	5.46	5.03	4.02	5.46	.69	.56
Female friends	3.39	3.85	2.68	3.32	.80	.50
Total	8.60	8.63	6.52	8.65	.86	.46
Turn to people for help	2.25	2.17	2.10	2.23	.60	.61
Social Climate						
Barracks:						
Involvement	2.62	2.72	2.58	2.64	.29	.84
Order and organization	2.57	2.50	2.56	2.50	.20	.90
Resident influence	2.08	1.98	2.03	2.13	.41	.74
Innovativeness	2.34	2.31	2.26	2.30	.42	.74
Marine Corps friends:						
Support	2.66	2.68	2.61	2.44	2.24	.08
Social emphasis	2.69	2.64	2.64	2.69	.21	.89
Competitiveness	2.52	2.67	2.82 ^a	2.73	4.03	.008
Independence	2.65	2.67	2.77	2.70	1.12	.34

Note. Social climate variables were measured on a 5-point scale, with 5 = high levels of the variable. "Turn to people for help" is measured by the number of times, out of three situations, the woman sought help from other people. See Table A-1 of the Appendix for specific scale descriptors and definitions.

^aGroup mean differs significantly from that for nonattrites.

Table
Correlations Between Social Support and Stress Measures for
Two Levels of Locus of Control

Social Support Measure	Stress Measure		
	Attrite	Perceived Stress	Symptoms
Overall (<u>N</u> =574)			
Number of friends	-.03	-.01	.00
Contacts with family and friends	-.03	.09*	.13**
Turn to people for help	-.05	-.22***	-.14**
Support from friends	-.07	-.11*	-.17***
Peer cohesion	-.05	-.26***	-.33***
Internals (<u>n</u> =285)			
Number of friends	.05	.02	.04
Contacts with family and friends	.06	.04	.06
Turn to people for help	.11	-.18*	-.13
Support from friends	.02	-.14*	-.15*
Peer cohesion	-.03	-.19**	-.23***
Externals (<u>n</u> =287)			
Number of friends	-.10	-.1	.01
Contacts with family and friends	-.10	.15	.20**
Turn to people for help	-.15*	-.25**	-.13
Support from friends	-.12*	-.06	-.16*
Peer cohesion	-.04	-.29***	-.32***

Note. Sample sizes are slightly smaller for particular variables and for the internal and external subgroups due to missing data.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Further evidence that social support helped women cope with stressful situations is presented in Table 11. Under conditions of low perceived stress, more contact with friends and family was associated with more symptoms for women with an internal locus of control. Women with an external locus of control and membership in cohesive work groups reported fewer symptoms than those in less cohesive groups. Under conditions of high perceived stress, relationships were somewhat different. Women with an external locus of control with more stress symptoms reported greater contact with family and friends than those with fewer symptoms. Women with supportive friends and cohesive

work groups reported fewer stress symptoms than other women, with larger correlations for externals than internals. Again, the quality of the relationship, rather than the quantity, helped the women cope with stress.

Table 11
Correlations Between Social Support and Symptoms of Stress For Two
Levels of Perceived Stress and Locus of Control

Social Support Measure	<u>Correlation Between Symptoms of Stress and Social Support</u>	
	Internal Locus of Control	External Locus of Control
<u>Low Perceived Stress</u>		
Contacts with family and friends	.21*	.10
Turn to people for help	.10	.21
Support from friends	-.05	-.10
Peer cohesion	-.08	-.43***
<u>High Perceived Stress</u>		
Contacts with family and friends	-.07	.22*
Turn to people for help	-.25	-.14
Support from friends	-.25*	-.31**
Peer cohesion	-.14	-.24*

Note. Sample sizes for internal and external locus of control groups under low perceived stress were 106 and 76, respectively. Sample sizes for internal and external locus of control groups under high perceived stress were 72 and 94, respectively. These groups were formed by omitting women with scores near the means of the distributions, making sample sizes smaller for this analysis.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Dissatisfaction With the USMC

Dissatisfaction with Marine Corps living was not highly related to attrition, as Table 12 illustrates. Measures of satisfaction with supervisors, the job, and one's USMC career in general were related to attrition, but satisfaction with coworkers was not. Among the many specific aspects of Marine Corps life that were examined, only satisfaction with off-duty recreation and with uniforms were related to attrition. Because the uniform is a symbol of the USMC, dissatisfaction with it may have represented dissatisfaction with a USMC career. The results gave little support to the hypothesis that dissatisfaction with specific aspects of USMC life contributes to attrition. Rather, attrition was related more to their feelings of being accepted and part of the organization.

Vulnerability to Pregnancy

The hypothesis that women who are more vulnerable to becoming pregnant will be more likely to attrite than women who are less vulnerable was supported by the data. Marriage was highly related to pregnancy attrition (see Table 13). Pregnant attrites with an interest in the USMC were the most likely to be married at the time of the survey, but had been married the shortest period of time. They also had husbands who were much more likely to want them to leave than husbands of married nonattrites. Pregnant attrites with no interest in the USMC also were more likely to be married than attrites who left for other reasons and nonattrites and to have husbands who wanted them to leave the USMC as soon as possible.

Factors associated with unintended pregnancy in the Adler (1981) model--external locus of control, poor coping skills, exposure to stressful events, and an environment supporting traditional roles for women--were higher among pregnant attrites as well. Those pregnant attrites with no future interest in the USMC were less likely than nonattrites to have an internal locus of control and good coping skills (see Table 2), and pregnant attrites with an interest in the USMC reported more interpersonal stress and symptoms of stress than other women (see Table 7). Pregnant attrites, especially those with no interest in the USMC, tended to be more isolated, having fewer friends and placing greater emphasis on one relationship (see Table 8), although differences were not significant. They were much more likely to have traditional values about women's roles (see Table 2).

Unsatisfactory Job Performance

Women who were less proficient and motivated were more likely to attrite than better workers, especially for reasons other than pregnancy. Supervisors rated nonpregnant attrites significantly lower than nonattrites in traits such as technical ability, leadership, effort, and the ability to get along with others, as indicated in Table 14. Pregnant attrites, however, included many trained, experienced women who performed as well as the nonattrites. Supervisors rated pregnant attrites as intermediate performers, not as good as nonattrites, but better than nonpregnant attrites. A discriminant analysis using the eight traits rated by supervisors explained over 5 percent of the variance (canonical correlation of .23, $p = .03$). Differences were greatest for leadership ability and for traits in which motivation was a component (personal appearance, effort, and willingness to do extra work); they were smallest for technical ability and speed of learning. Because all items differed significantly, they were all included in a composite to be used in further multivariate analyses.

Table 12
Differences Between Attrites and Nonattrites in Satisfaction
With Various Aspects of USMC Life

Aspect of USMC Life	Attrition Category				Significance Test	
	Nonattrites (n=423)	Pregnant Attrites With Interest (n=41)	Pregnant Attrites With No Interest (n=68)	Attrites Leaving for Other Reasons (n=41)		
					F	p
Present job	3.64	3.15	3.34	3.03 ^a	6.27	.0003
Coworkers	3.80	3.76	3.69	3.74	.37	.78
Supervisor	3.90	3.54	3.65	3.61	2.65	.05
Marine Corps life	3.45	3.30	3.36	3.27	1.35	.26
Leave policies	3.60	3.38	3.51	3.44	1.32	.27
Promotion	3.31	3.03	3.21	3.00	2.06	.10
Request mast procedures	3.46	3.51	3.34	3.37	.55	.65
Marine Corps career	3.51	2.90 ^a	2.90 ^a	2.59 ^a	12.24	.0000
Uniforms	3.29	3.44	3.14	2.95 ^b	3.80	.01
Dress uniform style	3.54	3.69	3.35	3.32	1.48	.22
Work uniform ("cammies")	3.63	3.80	3.38	3.05 ^{a,b}	4.63	.003
Uniform availability	2.70	2.80	2.71	2.49	.54	.65
Services	3.20	3.07	3.11	3.18	.69	.56
Housing	2.96	2.81	2.88	3.03	.59	.62
Exchange	3.44	3.33	3.43	3.41	.17	.92
Commissary	3.54	3.54	3.44	3.49	.26	.85
Dining facilities	2.85	2.82	2.81	2.39	2.04	.11
Child care	3.17	2.97	3.16	3.31	1.79	.15
Health	3.28	3.11	3.21	3.31	.92	.43
Health care	3.23	3.08	3.04	3.12	.75	.52
Birth control services	3.45	3.28	3.44	3.35	.54	.65
Off-duty activities	3.39	3.22	3.30	3.24	1.20	.31
Clubs	2.98	3.08	3.01	3.15	.43	.73
Sports activities	3.38	3.26	3.33	3.29	.29	.84
Educational opportunities	3.72	3.48	3.66	3.48	1.70	.17
Other off-duty recreation	3.47	3.08	3.18	3.10	3.93	.009
Attractiveness of single life	2.95	2.90	2.91	2.86	.20	.90

Note. All entries are mean satisfaction ratings using a 5-point scale with 1 = very dissatisfied and 5 = very satisfied.

^aThis group mean differs significantly from that for nonattrites.

^bThis group mean differs significantly from that for pregnant attrites with interest in the USMC.

Table 13
Differences Between Attrites and Nonattrites in Marital Status

Variable	Attrition Category				Significance Test	
	Nonattrites (<u>n</u> =423)	Pregnant Attrites With Interest (<u>n</u> =41)	Pregnant Attrites With No Interest (<u>n</u> =68)	Attrites Leaving for Other Reasons (<u>n</u> =41)		
					F	
					p	
All Women						
Percent married at survey	18.91	60.98 ^a	42.03 ^a	24.39 ^b	17.04	.0000
Percent married in first year	7.11	16.22	22.58 ^a	11.43	5.62	.0009
Married Women Only ^c						
Time married (in months)	9.53	7.13	8.05	7.35	.30	.83
Time living apart (in months)	2.85	2.85	3.34	1.18	.29	.83
Percent with Marine husbands	72.15	72.00	66.67	71.43	.11	.95
Percent whose husbands wanted them to leave USMC	13.04	60.61 ^a	55.26 ^a	30.00	15.24	.0000

^aGroup mean differs significantly from that for nonattrites.

^bGroup mean differs significantly from that for pregnant attrites with interest in the USMC.

^cSample sizes for married women are 80, 25, 30, and 10, respectively.

Table 14
Differences Between Attrites and Nonattrites in Performance Effectiveness

Variable	Source ^a	Attrition Category				Significance Test	
		Nonattrites (<u>n</u> =423)	Pregnant Attrites With Interest (<u>n</u> =41)	Pregnant Attrites With No Interest (<u>n</u> =68)	Attrites Leaving for Other Reasons (<u>n</u> =41)		
						F	p
Technical ability	W	4.79	4.93	4.60	4.57	1.08	.36
	S	4.76	4.53	4.69	4.07 ^b	3.01	.03
	M	4.78	4.80	4.65	4.43	1.34	.26
Speed of learning	S	5.51	5.16	5.35	4.73 ^b	3.28	.02
Training for the job	W	4.95	5.10	4.64	4.97	1.27	.29
	S	5.10	4.88	4.77	4.31 ^b	4.33	.005
	M	5.03	4.97	4.75	4.69	1.95	.12
Leadership ability	S	4.44	3.88	4.00	3.50 ^b	5.05	.002
Personal appearance	W	5.68	5.61	5.37	5.39	2.23	.08
	S	5.42	5.12	5.23	4.27 ^{b,c}	6.38	.000
	M	5.52	5.36	5.25	4.84 ^b	4.66	.001
Effort	W	5.67	5.61	5.42	5.31	2.28	.08
	S	5.32	4.64	5.09	4.37 ^b	5.71	.000
	M	5.47	5.12	5.23	4.77 ^b	5.67	.001
Ability to get along with others	W	5.79	5.85	5.39 ^b	5.78	3.25	.02
	S	5.72	5.64	5.34	4.93 ^b	4.18	.00
	M	5.76	5.77	5.33 ^b	5.38	4.61	.00
Willingness to do extra work	S	5.44	4.55 ^b	5.07	4.23 ^b	7.73	.00
Ability to work with men	W	5.84	5.76	5.61	5.67	1.11	.35

Note. All variables were rated on a 7-point scale, from 1 = lowest to 7 = highest, based on comparison with other Marines the same rank and occupational specialty.

^aW = from woman's survey; S = from supervisor's survey; M = mean of woman's and supervisor's responses. Because means were calculated only when data for both women and their supervisors were available, sample sizes are lower on M items.

^bGroup mean differs significantly from that of nonattrites.

^cGroup mean differs significantly from that of pregnant attrites with no interest in USMC.

When women who took the survey at attrition were omitted from the analysis, supervisors were found to rate the pregnant attrites even closer in performance to nonattrites, although their ratings of other attrites remained low. Results of a discriminant analysis using all eight traits were no longer significant. This finding could have occurred for several reasons. The supervisors may have allowed their views of the women's performance to be colored by the fact that they were pregnant and attriting, or, once pregnant and attriting, the women may have put forth less effort or have been less able to physically perform their work.

Differences between attrites and nonattrites on the women's self-ratings of their performance were not significant, although generally nonpregnant attrites rated themselves lowest, pregnant attrites with no interest in the USMC rated themselves next lowest, and pregnant attrites with interest in the USMC rated themselves as high as or higher than the nonattrites.

Multivariate Prediction of Attrition

Results from multiple regression and discriminant analyses suggest that both the traditionality of the woman and the interpersonal situation in which she finds herself in the USMC are important in predicting attrition.

Discriminant Analyses

A discriminant analysis to differentiate among the attrition categories explained about 24 percent of the variance, with canonical correlations of .41 and .27 for the first two statistically significant functions. The variables loading on these two functions are displayed in Table 15. Marital status and group climate were the most important variables, with internal locus of control, satisfaction, support from friends, and men's attitudes also important.

The discriminant functions were not particularly useful in predicting attrition, however. Although they placed 76.5 percent of the women in their correct attrition categories, 76.2 percent would have been placed correctly if all cases had been placed in the nonattrite category, based on no knowledge of their responses to survey questions. The percentage placed correctly increased to 78.5 percent if all categories of attrition were combined, still not a great improvement.

Results were similar for single women, with the discriminant function performing about the same as if it had placed all women in the nonattrite group. Although a somewhat smaller percentage of variance was explained (12.7%) and only one function was significant, the same variables were included in the function as for the group as a whole.

Prediction for married women was better, explaining 39.9 percent of the variance. If all women were placed in the nonattrite category, 59.8 percent would have been placed correctly. The function placed 65.5 percent correctly, 74.4 percent if attrition categories were collapsed. The function correctly placed 80 percent of the attrites who left for other reasons and 50 percent of the pregnant attrites with no future interest in the USMC, while for single women and the group as a whole, no more than 14 percent of the attrites were correctly placed. Because of the small sample size of married women, however, results are unstable and would probably not be as high in a different sample.

Table 15
Results of Discriminant Analyses

Measure	Function 1	Function 2	Percent Correct
Total Sample (N=353)			
Eigenvalue	.203***	.081*	
Canonical correlation	.411	.274	
Standardized canonical discriminant function coefficients greater than .30			
Marriage plans	-.430	.494	
Group climate	.431	--	
USMC satisfaction	.338	.319	
Nonwork contact	--	-.368	
Internal locus of control	--	.409	
Support from friends	--	.415	
Men's attitudes	--	.410	
Correct classification			76.5
Single Women (n=263)			
Eigenvalue	.146*		
Canonical correlation	.356		
Standardized canonical discriminant function coefficients greater than .30			
Job satisfaction	.560		
Support from friends	.484		
Nonwork contact	-.419		
Internal locus of control	.373		
Race (percent black)	.349		
Correct classification			81.4
Married Women (n=87)			
Eigenvalue	.664**		
Canonical correlation	.632		
Standardized canonical discriminant function coefficients greater than .30			
USMC satisfaction	.624		
Internal locus of control	.392		
Active coping style	.358		
Nonwork contacts	-.343		
Correct classification			65.5

*p < .05.
 **p < .01.
 ***p < .001.

Multiple Regression Analyses

Variables that differed significantly among attrite and nonattrite categories, when combined in multiple regression analyses to predict the types of attrition, accounted for from 3 to 37 percent of the variance depending on attrition category and marital status, considerably more than any variable or group of variables alone (see Table 16). Because the criteria were dichotomous, however, the maximum possible R^2 s are not 1.00 (Nunnally, 1967, pp. 131-133), but are as presented in the table. If these numbers are used as maxima, from 9 to 67 percent of the maximum possible variance is explained, indicating a substantial improvement. As in the discriminant analyses, prediction was best for married women and worst for single women.

All Categories of Attrition. When categories of attrition were combined, several variables were useful in predicting attrition. Satisfaction with the USMC, traditionality, race, and both group climate and disagreement between the woman and her supervisor in describing the climate contributed significantly to predicting attrition for the total group regardless of marital status and among single and married women. In addition, marriage plans or husband's attitude, if married, contributed significantly. Attrites were less likely to be black and more likely to be traditional in family and career values, more likely to be married or planning to marry, and more dissatisfied with the USMC than nonattrites. Groups from which women attrited had poorer climates with less agreement between the women and their supervisors in describing the climate. Work group climate variables were more important for single women while dissatisfaction with one's future in the USMC was more important for married women.

Pregnant Women Interested in the USMC. In the total group, marriage plans (including marital status) was the most important variable predicting pregnancy, with married women more likely to become pregnant and attrite than single women, a not unexpected finding. Group climate also made a contribution with women less likely to attrite if they were part of better led, more supportive groups. Among single women, the attitude of the men in the group toward women in the USMC was the most important variable, with no other variable contributing significantly. Among married women, the husband's attitude toward the woman's Marine Corps career was the most important determinant of whether a woman attrited, although disagreement between the woman and her supervisor in describing work group climate also contributed significantly.

Pregnant Women Not Interested in the USMC. For pregnant women with no further interest in the USMC, traditionality and race were the most significant variables for the total group. Women occupying a central position in their work groups, those who agreed with their supervisors in describing the work group climate, and those who were satisfied with their USMC careers were also less likely to attrite due to pregnancy. Women whose supervisors had a positive attitude about Marine Corps women were more likely to attrite, maybe because their supervisors had higher expectations for them than they had for themselves.

Among single pregnant women, only disagreement with their supervisors about work group climate contributed significantly to predicting attrition. Among married pregnant women, the husband's attitude was most important, although the woman's occupying a central position in the work group and having an internal locus of control were also significant contributors to remaining in the USMC.

Attrites Leaving for Other Reasons. Women attriting for reasons other than pregnancy (most of them behavior or adjustment problems) could be distinguished from

Table 16
Results of Multiple Regression Analyses to Predict Attrition

Attrition Category (Sample Size)	Variable	Final Beta	R^2 (Adjusted R^2)	Maximum Possible R^2	Proportion Explained
Total Sample					
All types of attrition ($N=574$)	USMC satisfaction**	-.124			
	Marriage plans**	.146			
	Disagreement about climate**	.145	.170 (.156)	.533	.319
	Race**	-.152			
	Group climate*	-.125			
Pregnant with interest ($n=464$)	Traditionality*	.114			
	Marriage plans**	.268	.106 (.099)	.276	.384
Pregnant with no interest ($n=492$)	Group climate**	-.172			
	Traditionality**	.173			
	Disagreement about climate**	.142			
	Race*	-.157	.122 (.104)	.391	.312
	USMC satisfaction*	-.138			
Leaving for other reasons ($n=464$)	Supervisor's attitude*	.133			
	Centrality*	-.126			
	Performance**	-.164			
	USMC satisfaction**	-.144	.104 (.091)	.276	.377
	Disagreement about climate*	.136			
	Race**	-.127			
Single Women					
All types of attrition ($n=426$)	Disagreement about climate**	.136			
	Group climate*	-.166			
	Race*	-.145	.097 (.083)	.462	.210
	Traditionality*	.131			
Pregnant with interest ($n=357$)	Men's attitudes**	-.198	.039 (.032)	.144	.271
Pregnant with no interest ($n=380$)	Disagreement about climate*	.165	.027 (.023)	.314	.086
Leaving for other reasons ($n=371$)	Performance**	-.117			
	Internal locus of control*	-.141	.070 (.062)	.270	.259
Married Women					
All types of attrition ($n=144$)	Husband's attitude**	.416			
	USMC satisfaction**	-.216	.263 (.244)	.616	.427
Pregnant with interest ($n=105$)	Husband's attitude**	.470			
	Disagreement about climate*	.217	.301 (.279)	.533	.565
Pregnant with no interest ($n=109$)	Husband's attitude**	.383			
	Internal locus of control*	-.266	.367 (.333)	.548	.670
	Centrality*	-.241			
Leaving for other reasons ($n=90$)	USMC satisfaction**	-.400	.160 (.143)	.331	.483

* $p < .05$.

** $p < .01$.

nonattrites by their poorer supervisory performance ratings, both for the entire group and for single women. In addition, both for the entire group and for married women, dissatisfaction with the USMC added to the prediction of attrition. For the entire group, black women and those who agreed with their supervisors about their work group climates were also less likely to attrite. Finally, single women with an internal locus of control were less likely to attrite (or to have adjustment or behavior problems that for others led to attrition).

DISCUSSION

Predicting Different Categories of Attrition

Examination of different categories of attrition was useful in understanding the relative contribution of various theories of attrition. Table 17 summarizes results by presenting the significant variables for each category of attrition as well as for attrition in general.

Some variables were related to all categories of attrition. Black women were less likely to attrite than women of other races. Women who were married or planned to marry were more likely to attrite, especially if their husbands wanted them to leave the service. Women who were more comfortable in the USMC, who saw their work groups as more cohesive and well-organized with more supportive leaders, who were more integrated into their units and had better communication with their supervisors were less likely to attrite than other women. Women who were more satisfied with their jobs and their future in the USMC were less likely to attrite than less satisfied women. Women whose supervisors saw them as slower to learn, putting forth less effort, and having less leadership potential were more likely to attrite.

Clearly, attrition among women was best understood when pregnancy attrition was considered separately from other attrition. Women attriting for behavior or adjustment problems appeared to be floundering in difficult situations with few coping resources. They described their situations as more difficult than did other women: They were harassed more, were given less central places in their work groups, were not given their choices of job specialty, were the first women in their groups, had less officer support and less job satisfaction, and reported more job stressors. Their supervisors described them as performing more poorly in their jobs than other women, even pregnant attrites. They also seemed to have fewer skills in coping with difficulties, with less active coping styles and more external locuses of control. They did report more contact with work group members outside of work, however.

Pregnant attrites, regardless of their interest in the USMC, appeared to be more family-centered than other women. They were more traditional in career and family orientation and more likely to be married or plan to marry than nonattrites and other attrites. They also had less contact with group members outside of work, probably because they concentrated their attention on their husbands or intended husbands. Their pregnancies, whether planned or unplanned, seemed to fit in with their more traditional outlooks.

All pregnant attrites were generally more difficult to distinguish from nonattrites than were nonpregnant attrites, especially in the univariate analyses. A component of pregnancy attrition may be random, as some sexually active women become pregnant and others do not. As previous research found, many pregnant attrites are similar to

Table 17

Summary of Differences Between Attrites and Nonattrites

All Attrites	Pregnant Attrites With Interest in USMC	Pregnant Attrites With No Interest in USMC	Attrites Leaving for Other Reasons
Background, Marital Status, and Vulnerability to Pregnancy			
Fewer blacks Plan to marry Husband's attitude negative	Plan to marry More women married Husband's attitude negative Recent marriage More traditional	Fewer blacks Plan to marry More women married Husband's attitude negative More traditional External locus of control Passive coping style	Fewer blacks External locus of control Passive coping style
Prior Knowledge and Appropriate Placement			
		Recruit training less useful	Recruiter less accurate Recruit training less useful Not given choice of field
Acceptance			
Command attitude negative Less acceptance Less comfort in male groups	Men's attitudes negative Command attitude negative Drop in men's attitudes Drop in supervisor's attitude		Men's attitudes negative Drop in men's attitudes Less comfort in male groups More harassed on job More sexual harassment More unwanted touching Less central group position Included more in nonwork events
Less central group position Included less in nonwork events	Included less in nonwork events	Less central group position Included less in nonwork events	
Group Climate, Communication, and Relations With Supervisor			
Work group less involved Less personal status Less group order and organization Less group clarity	Less personal status Less officer support More punitive officer control		Less officer support More punitive officer control
Lower overall group climate Less able to talk to others Lower satisfaction with supervisor More conflicts with supervisor Supervisor's policies unclear Disagree with supervisor in describing group climate	More conflicts with supervisor	Less able to talk to others Not go to supervisor with problems	Disagree with supervisor in describing group climate
Stress and Social Support			
Less job responsibility Family-job conflicts Given things she couldn't do	Family-job conflicts More job stressors More work-related symptoms	Less job responsibility	More job stressors First woman in group
More stress symptoms USMC friends more competitive			
Satisfaction			
Lower job satisfaction Lower satisfaction with USMC career Lower satisfaction with recreation			Lower job satisfaction Lower satisfaction with uniforms
Supervisor's Ratings and Women's Self-ratings of Traits			
Slower speed of learning Less training Less leadership ability Less effort Less extra work	Less extra work	Less ability to get along	Less technical ability Slower speed of learning Less training Less leadership potential Less effort Less extra work Less ability to get along Poorer appearance

nonattrites in most background and experience factors--except for the fact that they are pregnant (Royle, 1983).

Pregnant attrites with no interest in the USMC seemed to solve their problems by leaving the situation rather than seeking help from Marine Corps coworkers and leaders. This failure to use USMC resources could have been either a result of their generally negative feelings toward the USMC or an outcome of earlier unsuccessful attempts to obtain support, failure which helped form their negative attitudes. These women were not successfully integrated into their groups. They held less central places in their work groups, and both the women and their supervisors reported that they had less ability to get along with others. Of the three groups who attrited, they were the least able to talk to others about their problems and least likely to go to their supervisors for help when they first arrived. They also were more external on a locus of control measure and had less active coping styles than did nonattrites and pregnant attrites with interest in the USMC. These latter findings suggest that the problem more likely concerned difficulty in actively seeking help than help being refused.

Pregnant women who remained interested in the USMC seemed to be good workers caught between a rock and a hard place. They reported higher levels of job-family conflicts than other pregnant and nonpregnant attrites--their supervisors wanted them at work and their husbands wanted them at home. They solved these conflicts by leaving the USMC, although they might have preferred to remain. Although satisfied with the USMC as a whole, they reported difficult job situations, negative attitudes by the men and command toward women, and more conflicts with their supervisors. Their supervisors said they negatively affected attitudes of men and supervisors toward women in the USMC, even though they rated the women as good performers. The negative attitude may have been due to their pregnancies, particularly if they occurred before marriage (and members of this group had been married the shortest period of time). Because the women had been good performers, the groups may have begun to depend on them. The ensuing pregnancies may have caused group members to feel disappointment in the women.

Predicting Attrition Among Single and Married Women

Contributors to attrition were generally similar among married and single women, although relationships within the work group seemed more important for single women, while husbands' attitudes were more important for married women. Married attrites were considerably easier to identify than single attrites, partly because of the major influence of the husband's attitude. Also, background and experience factors may be less relevant to the decisions of single Marines, because single women may have less choice about leaving than do women who have husbands to help with child care responsibilities.

Hypothesized Contributors to Attrition

What do the results say about the various theories of attrition and about the usefulness of solutions based on them? Among Marine Corps women, each of the possible contributors to attrition suggested by the literature received some support.

Unsuitability for Marine Corps life, in terms of background variables that could be used in screening, was not ruled out. A selection device could be developed to identify the most traditional women and those with more external locuses of control and less active coping styles, although the improvements its use would bring would probably be small (Wilcove, 1983). Alternative approaches might be to informally screen for

traditionality and to develop ways of reinforcing internal locus of control (Sarason & Novaco, 1982) or active coping with problems. Race and marital status, the other two background variables significantly related to attrition, would not be suitable for screening purposes.

Lack of realistic expectations about Marine Corps life also received only minimal support. Efforts to improve information at recruiting stations and during recruit training and to place women appropriately might have some positive effect on combating attrition, albeit a small one.

Although results supported the hypothesis that dissatisfaction with USMC life contributes to attrition, the dissatisfaction was with the general aspects (e.g., the job, a Marine Corps career) rather than with specifics such as housing, health care, or educational opportunities. Dissatisfaction with specific aspects of USMC life may affect attrition in an indirect way, however. If women are dissatisfied with housing, dining facilities, and the harassment they receive at enlisted clubs, they may consider marriage, enabling them to move out of the barracks into a more pleasant life style, sooner than they otherwise might, especially if either they or their intended husbands are faced with transfers. If the women are dissatisfied with health care, they may put off seeking contraceptive information. Both early marriage and delayed use of contraception would increase the likelihood of pregnancy and, hence, pregnancy attrition. Therefore, even though specific aspects of a Marine Corps career were not directly related to attrition, improvements in those areas have some potential for decreasing attrition.

Results provided strong support for the hypothesis that acceptance into the organization is important in preventing attrition. For all categories, attrition was related to acceptance in whatever way it was measured (attitudes toward women in the USMC, the woman's feelings of comfort, being given a central position, being harassed, or included in nonwork activities). Women who are well-integrated into their units may not want to let the group down by leaving. Efforts by the USMC to increase the acceptance of women in the Corps as a whole and in their units hold a strong potential for decreasing attrition. The USMC has effective techniques for making men feel an important part of the Corps. These techniques need to be extended to women as well.

The hypothesis that work groups with a good climate and leaders with good relations with their subordinates combat attrition was also supported by the data. Groups in which rules were clear, cohesion was high, and the officers and NCOs supported their people were ones in which the women felt accepted and from which they were less likely to attrite. Women whose supervisors agreed with them in describing their work group climate and the treatment they received were less likely to attrite than other women. This awareness by the supervisor of how the woman perceived the situation may have prevented the kind of problems that drive a woman out of the USMC or into an intense relationship with one man that leads to marriage and pregnancy. Groups and supervisors who are supportive and aware of what is happening may be able to help the women cope with small problems before they become serious. Groups with effective leadership lost fewer women than other groups. Continued Marine Corps emphasis on leadership, then, should help to combat attrition among both women and men.

Results also supported the need of women for resources to cope with stress. Attrites reported greater stress levels than nonattrites, results similar to those found by Wilcove, Thomas, and Blankenship (1979) among Navy women. Women who felt their friends were supportive were less likely to attrite than others, perhaps because they believed their friends would help them if they chose to stay. Quality of relationships with others was

more important than quantity in determining the effects of social support among Marine Corps women, as it was in other research (Shumaker & Brownell, 1984).

Because attrites were more external on a locus of control measure, less active in coping styles, and less comfortable taking their problems to other Marines, they may have difficulty in asking for help when they need it. If so, supervisors and others may need to be more proactive in making sure the women are accepted and are coping with their problems. Efforts to help women identify and utilize other Marines, both male and female, as sources of support should also help decrease attrition.

The last two hypotheses, that attrition eliminates the less satisfactory performers and women who are particularly vulnerable to pregnancy, received support, but for different categories of attrition. Nonpregnancy attrition seems to be removing the less able women, and its rate is about the same as that for men. Some of this attrition may be preventable with better group climates and supervision and decreased stress, while some may be unavoidable.

Pregnancy attrition, however, is different. Pregnant women are generally good performers who often are satisfied with their Marine Corps careers. Their decision to leave, once pregnant, seems based more on how traditional they and their husbands are in meeting their parental responsibilities than on how they feel about their Marine Corps experiences. Because they represent the bulk of post-recruit training attrition, efforts to decrease pregnancy attrition are necessary to substantially decrease attrition among Marine Corps women.

Pregnancy attrition can be decreased by preventing unplanned pregnancies and by keeping women from attriting once they are pregnant. Marine Corps policy¹ no longer makes pregnancy discharges automatic, a change that appears to have decreased pregnancy attrition. It may not have an appreciable effect on the rate of unplanned pregnancies, however, because the number of Marine mothers has increased. Additional ways are needed to decrease attrition once a woman is pregnant and to help Marine mothers be more productive and more effective in combining motherhood and a Marine Corps career. These include inexpensive, quality 24-hour child care, facilitation of cooperative child care arrangements, and more consideration of family responsibilities in assignment, such as assignment, when possible, of a single mother to an area where she has family or friends to assist her.

A better way to decrease pregnancy attrition is to prevent unplanned pregnancies from occurring. Improved work group climates and help in coping with stress might decrease the pressures driving the woman into an intense relationship with one man that could lead to early marriage and pregnancy. Provision of sex education within a life-planning and decision-making setting should help prevent unplanned pregnancies as well as help women make thoughtful choices concerning dating, marriage, and parenthood.

¹ Marine Corps Order 5000.12A.

CONCLUSIONS

1. The USMC is losing many capable women due to attrition, particularly attrition due to pregnancy.
2. Identification of pregnant and nonpregnant attrites and further identification of pregnant attrites with interest in future USMC ties were useful in understanding the reasons for attrition: Women attriting due to behavior or adjustment problems were not performing well in situations they described as difficult and did not seem to have adequate resources with which to cope with their difficulties. Pregnant attrites were more traditional in career and family outlook than other women. Pregnant attrites with no interest in the USMC solved problems by leaving rather than seeking help from Marine Corps sources. Pregnant attrites who had interest in the USMC and who were good performers resolved conflicting work and family demands by leaving.
3. Although some support was found for each theory of attrition explored, the most important factors were traditional family and career orientation, the woman's lack of acceptance by the group and supervisor, and her exposure to stress without the resources to cope with it.

RECOMMENDATIONS

To decrease attrition among women, the USMC should investigate ways to:

1. Improve recruiting and screening processes to provide women applicants with a better picture of Marine Corps life and discourage the most traditional women from enlisting.
2. Help women become accepted by providing job-related training, creating flexible work groups with good climates, and encouraging supervisors to become involved in helping women solve their problems.
3. Help women develop coping skills and social support to counteract job stresses.
4. Improve the climate toward women in the USMC as a whole by emphasizing their achievements, their potential, and command support for their participation.
5. Provide support for pregnant women so that they can combine parenthood and a USMC career.
6. Help women develop short-term alternatives to marriage and pregnancy for overcoming loneliness.
7. Provide sex education in a setting that encourages exploring life and career goals to help prevent unplanned pregnancies and help women and men make thoughtful choices about marriage and parenthood.

REFERENCES

- Adler, N. E. (1981). Sex roles and unwanted pregnancy in adolescent and adult women. Professional Psychology, 12, 56-66.
- Briggs, N. L. (1978). Women and the skilled trades. Columbus, OH: Ohio State University, National Center for Research in Vocational Education.
- Dalton, D. R., Krackhardt, D. M., & Porter, L. W. (1981). Functional turnover: An empirical assessment. Journal of Applied Psychology, 66, 716-721.
- Dansereau, F., Cashman, J., & Graen, G. (1973). Instrumentality theory and equity theory as complementary approaches in predicting the relationship of leadership and turnover among managers. Organizational Behavior and Human Performance, 10, 184-200.
- Feldman, D. C. (March-April 1980). A socialization process that helps new recruits succeed. Personnel, 57(2), 11-23.
- Gerrard, M., & Royle, M. H. (July 1985). Predicting pregnancy and pregnancy attrition in first-term Marine Corps women (NPRDC Tech. Rep. 85-32). San Diego: Navy Personnel Research and Development Center.
- Goodstadt, B. E., & Yedlin, N. C. (1979). A review of state-of-the-art research on military attrition (Final Rep.). Washington, DC: Advanced Research Resources Organization.
- Graen, G. B., Liden, R. C., & Hoel, W. (1982). Role of leadership in the employee withdrawal process. Journal of Applied Psychology, 67, 868-872.
- Hand, H. H., Griffith, R. W., & Mobley, W. H. (1977). Military enlistment, reenlistment, and withdrawal research: A critical review of the literature (Tech. Rep. 3). Columbia, SC: University of South Carolina, Center for Management and Organizational Research.
- Kane, R. D., Dee, E., & Miller, J. (1977). Problems of women in apprenticeship. Arlington, VA: RJ Associates, Inc. (ERIC Doc. No. ED154161)
- Kerce, E. W., & Royle, M. H. (1984). First-term enlisted Marine Corps women: Their backgrounds and experiences (NPRDC Tech. Rep. 84-57). San Diego: Navy Personnel Research and Development Center.
- Krackhardt, D., McKenna, J., Porter, L. W., & Steers, R. M. (1981). Supervisory behavior and employee turnover: A field experiment. Academy of Management Journal, 24, 249-259.
- Louis, M. R. (1980). Surprise and sense-making: What newcomers experience in entering unfamiliar organizational settings. Administrative Science Quarterly, 25, 226-251.
- Moos, R. H. (1973). Military company environment inventory manual. Palo Alto, CA: Social Ecology Laboratory, Stanford University.
- Moos, R. H. (1979). Evaluating educational environments. San Francisco: Jossey-Bass.

- Mowday, R. T., Steers, R. M., & Porter, L. W. (1978). The measurement of organizational commitment: A progress report (Tech. Rep. No. 15). Eugene, OR: University of Oregon.
- Nowicki, S. H., & Strickland, B. R. (1973). A locus of control scale for children. Journal of Consulting and Clinical Psychology, 40, 148-154.
- Nunnally, J. C. (1967). Psychometric theory (pp. 131-133). New York: McGraw Hill.
- Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in turnover and absenteeism. Psychological Bulletin, 80, 151-176.
- Reilly, R. R., Tenopyr, M. L., & Sperling, S. M. (1979). Effects of job previews on job acceptance and survival of telephone operator candidates. Journal of Applied Psychology, 64, 218-220.
- Royle, M. H. (1983). First-term attrition among Marine Corps women: Some associated factors (NPRDC Tech. Rep. 83-22). San Diego: Navy Personnel Research and Development Center.
- Royle, M. H. (1984). Aids to integration of Marine Corps women. In N. H. Loring (Ed.), Military women in the 80s: Problems and progress. Chicago: Interuniversity Seminar on Armed Forces and Society.
- Sarason, I. G., & Novaco, R. W. (1982). Stress and coping in recruit training: Roles of the recruit and the drill instructor. Seattle, WA: University of Washington Department of Psychology.
- Shumaker, S. A., & Brownell, A. (1984). Toward a theory of social support: Closing conceptual gaps. Journal of Social Issues, 40, 11-36.
- Sinaiko, H. W., & Marshall, K. T. (1980). How are we going to keep them from going back to the farm: Research on personnel loss in the Navy. U.S. Navy Yearbook on Manpower, Personnel, and Training, 1, 3-13.
- Thomas, P. J. (May 1978). Role of women in the military: Australia, Canada, the United Kingdom, and the United States. (NPRDC Spec. Rep. 78-10). San Diego: Navy Personnel Research and Development Center.
- Van Maanen, J., & Schein, E. H. (1979). Toward a theory of organizational socialization. In B. M. Staw (Ed.), Research in Organizational Behavior, 1, 209-264.
- Wanous, J. P. (1978). Realistic job previews: Can a procedure to reduce turnover also influence the relationship between ability and performance? Personnel Psychology, 31, 249-258.
- Wilcove, G. L. (June 1983). Completion of the first enlistment by female personnel: A prediction study (NPRDC Spec. Rep. 83-41). San Diego: Navy Personnel Research and Development Center.

- Wilcove, G. L., Thomas, P. J., & Blankenship, C. (September 1979). The use of preenlistment variables to predict the attrition of Navy female enlistees (NPRDC Spec. Rep. 79-25). San Diego: Navy Personnel Research and Development Center.
- Wiskoff, M. F., Atwater, D. C., & Houle, M. M. (June 1980). Enlisted first-term attrition: Literature review and discussion. Paper presented at meeting of the Technical Cooperation Program, Technical Panel UTP-3, Military Manpower Trends, Montreal, Canada.
- Women's Bureau. (1974). Steps to opening the skilled trades to women. Washington, DC: Department of Labor. Employment Standards Administration.

APPENDIX
VARIABLES USED IN ANALYSES

Table A-1
Variables Used in Analyses

Variable Name	Content	Type	Source
Variables Related to Marine Corps Living			
Number of brothers	Number of brothers	Single	Self-report
Number of siblings	Number of brothers plus number of sisters	Composite	Self-report
Race (percent black)	Race, coded 1 if black, 0 otherwise	Single	HMF
Social class	5-point scale, <u>lower</u> to <u>upper</u>	Single	Self-report
Time spent in mostly male groups	5-point scale, <u>none at all</u> to <u>most of the time</u>	Single	Self-report
Group participation	6-point scale, <u>never active</u> to <u>usually a leader</u>	Single	Self-report
Hours in sports activities	Hours/week in sports or physical activities in 6 mo. before enlisting	Single	Self-report
Weight/height ratio	Weight-100/height-60, an indicator of overweight	Composite	Self-report
Variables Related to Maturity			
Percent in two-parent households	Percent who lived with both parents for most of the time while growing up	Single	Self-report
Years of education	Education level, converted to years (e.g., BA = 16)	Single	HMF
Number of classes failed to complete	Number of classes dropped or failed to complete in school	Single	Self-report
Age at enlistment	Age at first enlistment in years	Single	Self-report
Internal locus of control	6-item scale, taken from Nowicki-Strickland (1973) measure of whether person believes self or others control what happens to him or her	Composite	Self-report

Note. Variables are presented in the order in which they first appear in the tables. Some variables appear in more than one table.

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Related to Maturity (Continued)			
Mature coping strategies	6-item scale of how active or passive person has been in dealing with past problems	Composite	Self-report
Variables Related to Traditional Female Roles			
Percent with mother in traditional job	Mother's occupation (nurse, teacher, housewife, etc.)	Single	Self-report
Number of children desired	Number of children wanted when family is complete	Single	Self-report
Marriage plans	5-point scale: 1 = <u>single, want to stay so</u> 2 = <u>divorced, want to stay so</u> 3 = <u>single, want to marry</u> 4 = <u>divorced, want to marry</u> 5 = <u>married</u>	Single	Self-report
Percent married	Recoding of marriage plans 1 = married, 0 = otherwise	Recoded	Self-report
Balancing career and family demands	5-point scale from 1 = <u>career more important, even if no children</u> to 5 = <u>children most important, even if no career</u>	Single	Self-report
Traditional role view	4-point scale from 1 = <u>husbands and wives share home and work responsibilities</u> to 5 = <u>woman has home and man has work responsibilities</u>	Single	Self-report
Not volunteer for combat if possible	3-point scale, with 1 = <u>would volunteer</u> , and 3 = <u>would not</u>	Single	Self-report
Traditionality	Scale of above 5 items, from <u>number of children desired</u> to <u>not volunteer for combat</u> , excluding percent married	Composite	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Related to Prior Knowledge of the USMC			
Relative in USMC	Percentage reporting at least one family member was or had been in USMC	Single	Self-report
Relative in other service	Percentage reporting at least one family member was or had been in another armed service	Single	Self-report
Female relative in military service	Percentage reporting at least one female relative in any armed service	Single	Self-report
Good idea of USMC preenlistment	5-point scale from 1 = <u>no idea at all</u> to 5 = <u>very complete & accurate idea</u>	Single	Self-report
Recruiter well-informed	5-point scale from 1 = <u>knew nothing</u> to 5 = <u>very well-informed</u>	Single	Self-report
Recruiter accurate	4-point scale from 1 = <u>totally inaccurate or misleading</u> to 4 = <u>accurate in every detail</u>	Single	Self-report
Usefulness of recruit training	5-point scale on how well recruit training prepared person from 1 = <u>not at all</u> to 5 = <u>very well</u>	Single	Self-report
Variables Measuring Appropriate Placement			
Total formal training received (USMC and prior)	Number of training events reported in open-ended question (e.g., high school course, USMC school), each event scored 1	Coded Open-ended	Self-report
Number of USMC courses taken	Number of courses recorded on HMF	Composite	HMF
Percent who got choice of field	Percent reporting they got occupational field they were promised or one they requested, coded 1 = <u>yes</u> , 0 = <u>no</u>	Single	Self-report
Percent who tried to change occupational field	Percent reporting that they tried changing occupational fields, coded 1 = <u>yes</u> , 0 = <u>no</u>	Single	Self-report
Percent successful in changing field	Percent of those who tried to change their field who were successful, coded 1 = <u>yes</u> , 0 = <u>no</u>	Single	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Measuring Attitudes Toward Women			
Men's attitudes	Attitude of majority of men in work group toward women Marines, rated on 5-point scale from 1 = <u>no place for women in Corps</u> to 5 = <u>very positive about women in unit</u>	Single	Women, supervisor, & mean Self-report
Supervisor's attitude	Attitude of supervisor toward women Marines, rated on same 5-point scale used to measure men's attitudes	Single	Women, supervisor, & mean Self-report
Command attitude	Attitude of command at battalion, squadron, or company level toward women Marines, rated on same 5-point scale used to measure men's attitudes	Single	Women, supervisor, & mean Self-report
Change in men's attitudes	Supervisor's rating of the effect of this particular woman on men's attitudes toward women Marines, rated on a 5-point scale from 1 = <u>made much more negative</u> to 5 = <u>made much more positive</u>	Single	Supervisor Self-report
Change in supervisor's attitudes	Supervisor's rating of the effect of this particular woman on own attitude toward women Marines, rated on the same 5-point scale used to measure change in men's attitudes	Single	Supervisor Self-report
Variables Indicating Negative Behaviors Toward Women			
Percent reporting incidences of-- Exclusion Discrimination Favoritism	Percent of women who reported instances of these behaviors toward themselves in open-ended questions, coded 1 = yes, 0 = otherwise	Coded Open-ended	Self-report
On-job harassment	Reported frequency of others giving woman a rough time at work, rated on a 5-point scale from 1 = <u>never</u> to 5 = <u>almost all the time</u>	Single	Woman, supervisor, & mean Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Indicating Negative Behaviors Toward Women (Continued)			
Specific sexual harassment	Number of incidents of sexual harassment, defined as offers of job benefits or threats of job action in return for sexual favors	Single	Self-report
On-job-- Unwanted touching Sexual jokes or repeated comments of a sexual nature	Frequency of each sexually harassing behavior on a 5-point scale from 1 = <u>never</u> to 5 = <u>most of the time</u>		
Off-job-- Unwanted touching Sexual jokes or repeated comments of a sexual nature		Single	Self-report
Variables Measuring Woman's Feelings of Acceptance			
Comfort in USMC	Response to how comfortable woman feels living & working in mostly male environment, such as USMC, on 5-point scale from 1 = <u>very uncomfortable</u> to 5 = <u>very comfortable</u>	Single	Self-report
Acceptance	Mean of woman's feelings of comfort in USMC (above) and satisfaction with coworkers and supervisor, rated on a 5-point scale from 1 = <u>very dissatisfied</u> to 5 = <u>very satisfied</u>	Composite	Self-report
Variables Indicating Integration Into the Unit			
Woman helped	Mean on 3-item scale of helping behaviors (others offer help, others refuse help, supervisor refuses help) scored on 5-point scale from 1 = <u>never</u> to 5 = <u>almost all the time</u> , with the latter 2 items reversed and the last item omitted for supervisors	Composite	Woman, supervisor, & mean Self-report
Woman given central place	Mean on 4-item scale of indicators of a central position in the group (included in work-related conversations, woman offers to help, others ask for her help, supervisor gives her important jobs), on the same 5-point scale used to measure the variable "woman helped"	Composite	Woman, supervisor, & mean Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Indicating Integration Into the Unit (Continued)			
Woman included in nonwork activities	Mean on a 2-item scale of inclusion in group social activities (non-job-related conversations & informal group activities after work), on the same 5-point scale used to measure the variable "woman helped"	Composite	Woman, supervisor, & mean Self-report
Variables Measuring Work Group Climate			
Openness to newcomers	Rating on a 5-point scale from 1 = <u>newcomers are given a rough time</u> to 5 = <u>newcomers are helped a lot</u>	Single	Woman, supervisor, & mean Self-report
Climate scales-- Involvement Peer cohesion Officer support Personal status Order & organization Clarity Nonpunitive officer control	Means on abbreviated (2-item) versions of the Moos Climate Scales (Moos, 1973) for Army recruit companies, using 4-point scales with the high end representing higher amounts of the trait	Composite	Woman, supervisor, & mean Self-report
Overall climate	Mean of the 7 climate scales	Composite	Woman, supervisor, & mean Self-report
Measures of Woman's Feelings About her Ability to Communicate			
Woman able to talk to-- Male coworkers Enlisted women Male NCOs Female NCOs First sergeant Commander Women officers Chaplain	How easy it would be to discuss a problem with each group or person, rated on a 5-point scale from 1 = <u>very difficult</u> to 5 = <u>very easy</u>	Single	Self-report
Ability to talk, composite	Mean of able to talk items	Composite	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Measuring Woman's Relations With her Supervisor			
Satisfaction with supervisor	Rated on a 5-point scale from 1 = <u>very dissatisfied</u> to 5 = <u>very satisfied</u>	Single	Self-report
Conflicts with supervisor Unclear policies Unsure of duties	These 3 items were rated on 5-point scale from 1 = <u>never</u> to 5 = <u>almost always</u>	Single	Self-report
Percent turning to supervisor for help with-- Job problems Other problems Newcomer problems	Coded 1 if woman gave supervisor as source of help in each type of problem, 0 otherwise	Coded Open-ended	Self-report
Woman-supervisor disagreement in: Group actions when woman arrived Group actions now Work group climate	These variables were created by adding the differences between the woman's and her supervisor's ratings on items indicating integration into the unit when the woman arrived, integration now, and work group climate	Composite	Self-report
Variables Indicating Intrinsically Stressful Situations			
Percent in nontraditional jobs and settings	Percent of women doing nonclerical work in field settings (e.g., mechanics)	Single	Self-report
Percent of women in group	Number of women in work group/number of people in work group (numbers are means of woman's & supervisor's estimates)	Composite	Woman, supervisor, & mean Self-report
Percent of women seen daily	Number of women with whom the woman interacts daily/number of people with whom she interacts daily (numbers are means of woman's & supervisor's estimates)	Composite	Woman, supervisor, & mean Self-report
Percent who were sole women	Percent who had no other women in their work group, coded 1 if no other women, 0 otherwise	Recoded	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Indicating Intrinsically Stressful Situations (Continued)			
Percent who were first woman in group	Percent reporting that the group had been all male prior to the woman's arrival, coded 1 if first woman, 0 otherwise	Single	Woman and supervisor Self-report
Percent having woman in chain of command	Percent reporting a woman present somewhere in the woman's chain of command, coded 1 if woman present, 0 otherwise	Single	Supervisor Report
Staffing level	Supervisor's report of shortages or over-supply of people/number in work group, coded so that negative numbers indicate understaffing	Composite	Supervisor Report
Perceived understaffing	Response on a 5-item scale from 1 = <u>plenty of time and people to do job</u> , to 5 = <u>never enough time or people</u>	Single	Woman, supervisor, & mean Self-report
Perceived stress rating on job	Response on a 5-item scale including stress from environmental, work, and social sources, from 1 = <u>not at all stressful</u> to 5 = <u>very stressful</u>	Single	Woman, supervisor, & mean Self-report
Variables Measuring Interpersonal Stress			
Job stressors- Unsure of duties Unsure of leadership role Given responsibility Conflicts with supervisors Conflicts with coworkers Conflicts with subordinates Unclear policies Pressures to put group above family goals Family demands conflict with USMC demands Performance difficulties	Each stressor measured on 5-point scale, from 1 = <u>never</u> to 5 = <u>almost all the time</u>	Single	Self-report
Job stressors, composite	Mean of 9 items measuring interpersonal sources of stress on job (excluding conflicts with subordinates)	Composite	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Measuring Symptoms of Stress			
Symptoms at work	Mean of 7 items measuring stress-related symptoms occurring at work (feelings of nervousness, working under tension, anxious feelings, difficulty in decision-making, hostile reactions or anger, difficulty concentrating on work, worrying about job-related problems). Each item rated on a 5-point scale from 1 = <u>never</u> to 5 = <u>almost always</u>	Composite	Self-report
Other symptoms	Mean of 6 additional symptoms of stress (difficulty sleeping, feeling depressed, upset stomach or stomach ache, headaches, back pains or back-ache, feeling tired or worn out). Each item rated on same 5-point scale used to measure symptoms at work	Composite	Self-report
Total symptoms	Mean of symptoms at work and other symptoms	Composite	Self-report
Variables Measuring Social Support			
Contacts with family	Number of times/month woman wrote, phoned, or visited out-of-town family	Single	Self-report
Contacts with friends at home	Number of times/month woman wrote, phoned, or visited out-of-town friends	Single	Self-report
Contacts with local friends	Number of times/month woman wrote, phoned, or visited non-Marine friends living nearby	Single	Self-report
Total contacts	Sum of contacts with family and friends	Composite	Self-report
Number of male friends	Number of close male friends on base	Single	Self-report
Number of female friends	Number of close female friends on base	Single	Self-report
Total friends	Sum of number of male and female friends	Composite	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Measuring Social Support (Continued)			
Turn to people for help	Number of times women reported turning to other people for help in 3 work-related problem situations	Coded Open-ended	Self-report
Barracks climate scales-- Involvement Order and organization Resident influence Innovativeness	Means on abbreviated (2-item) versions of the Moos Climate Scales for college dormitories (Moos, 1979) using 4-point scales with the high end representing higher amounts of the trait	Composite	Self-report
Marine Corps friends scales-- Support Social emphasis Competitiveness Independence	Means on abbreviated (2-item) versions of the Moos Climate Scales for college dormitories (Moos, 1979) using 4-point scales with the high end representing higher amounts of the trait	Composite	Self-report
Variables Measuring Satisfaction With Various Aspects of USMC Life			
Present job	All satisfaction items were rated on a 5-point scale from 1 = <u>very dissatisfied</u> to 5 = <u>very satisfied</u>	Single	Self-report
Coworkers		Single	Self-report
Marine Corps career		Single	Self-report
Leave		Single	Self-report
Promotion		Single	Self-report
Request mast procedures	Mean of last 3 items	Single	Self-report
Marine Corps life		Composite	Self-report
Dress uniform style		Single	Self-report
Work uniform ("Cammies")		Single	Self-report
Uniform availability		Single	Self-report
Uniforms	Mean of last 3 items	Composite	Self-report
Housing		Single	Self-report
Exchange		Single	Self-report
Commissary		Single	Self-report
Dining facilities		Single	Self-report
Child care	Mean of last 5 items	Single	Self-report
Services		Composite	Self-report
Health care		Single	Self-report
Birth control services	Mean of last 2 items	Single	Self-report
Health		Composite	Self-report
Clubs		Single	Self-report
Sports activities		Single	Self-report

Table A-1 (Continued)

Variable Name	Content	Type	Source
Variables Measuring Satisfaction With Various Aspects of USMC Life (Continued)			
Educational opportunities	Mean of last 4 items	Single	Self-report
Other off-duty recreation		Single	Self-report
Off-duty activities		Composite	Self-report
Attractiveness of single life	Mean of satisfaction with military housing, clubs, and dining facilities	Composite	Self-report
Variables Related to Marital Status			
Percent married in first year	Percent with HMF marital status code indicating married about 6 months prior to survey	Single	HMF
Time married	Number of months woman had been married	Single	Self-report
Time living apart	Number of months woman lived apart from husband since marriage	Single	Self-report
Percent with Marine husbands	Percentage of married women whose husbands were Marines	Single	Self-report
Percent whose husbands wanted them to leave USMC	Percentage of married women who said their husbands wanted them to leave as soon as they could	Single	Self-report
Variables Measuring Job Performance			
Trait--	All traits were rated on a 7-point scale from 1 = <u>lowest</u> to 7 = <u>highest</u> as compared with other Marines of the same rank and occupational specialty	Single	Women, supervisor, & mean Self-report
Technical ability			
Speed of learning (supervisors only)			
Training for the job			
Leadership ability (supervisors only)			
Personal appearance			
Effort			
Ability to get along with others			
Willingness to do extra work (supervisors only)			
Ability to work with men (women only)			
Supervisor trait, composite	Mean of 7 items rated by supervisors	Composite	Supervisor Self-report

DISTRIBUTION LIST

Deputy Assistant Secretary of Defense (Equal Opportunity) (OASD) (M,RA&L)
Executive Secretary, Defense Advisory Committee on Women in the Services (DACOWITS) (35)
Assistant Secretary of the Navy (Manpower and Reserve Affairs) (OASN) (M&RA)
Deputy Assistant Secretary of the Navy (Manpower)
Chief of Naval Operations (OP-01B7) (2), (OP-01W), (OP-132H3)
Director of Navy Laboratories (DNL 00), (ONT 0722)
Commander, Naval Military Personnel Command (NMPC-013D), (NMPC-61)
Commander, Navy Recruiting Command (Code 20)
Chief, Bureau of Medicine and Surgery (MED 25)
Commanding Officer, Naval Health Sciences Education and Training Command, Bethesda
Chief of Naval Research (Code 440)
Office of Naval Research, Detachment Pasadena
Office of Naval Research, London
Chief of Naval Education and Training (Code 00A), (N-334)
Commanding Officer, Naval Education and Training Program, Pensacola (Code 09)
Commanding Officer, Naval Technical Training Center, Corry Station (Code 101B)
Commanding Officer, Naval Air Technical Training Center (AW-A), Millington, TN
Commander, Naval Ocean Systems Center (Code 033)
Commanding Officer, Naval Training Systems Center (Technical Library) (5), (Code 10), (Code N-1)
Officer in Charge, BUMED East Coast Equal Opportunity, Naval Regional Medical Center, Portsmouth, VA
Officer in Charge, BUMED West Coast Equal Opportunity, Naval Regional Medical Center, Oakland, CA
Commander in Chief, United States Naval Forces, Europe (2)
Commander in Chief, U.S. Atlantic Fleet
Commander in Chief, U.S. Pacific Fleet
Commandant of the Marine Corps (MPI-20) (10)
Mr. Greenup, Education Center MCDEC, Quantico, VA
Commander, Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA (PERI-SZ)
Chief, ARI-USAREUR (Library) (2)
Commander, U.S. Army Soldier Support Center, Human Dimensions Division, Ft. Benjamin Harrison
HQ USMEPCOM/MEPCPAT-A, North Chicago, IL
Program Manager, Life Sciences Directorate, Bolling Air Force Base (AFOSR/NL)
Commander, Air Force Human Resources Laboratory, Brooks Air Force Base (AFHRL/MO Manpower and Personnel Division), (Scientific and Technical Information Officer), (TSRL/Technical Library FL 2870)
Director, Equal Opportunity Management Institute, Patrick Air Force Base (EOMI) (5)
Commandant, Coast Guard Headquarters
Commanding Officer, U.S. Coast Guard Research and Development Center, Avery Point
Commanding Officer, U.S. Coast Guard Support Center, Government Island
President, Naval War College (Code E-1121)
Superintendent, Naval Postgraduate School
Superintendent, U.S. Coast Guard Academy (DII)
Commanding Officer, U.S. Coast Guard Institute
President, National Defense University (3)
Director of Research, U.S. Naval Academy
Executive Director, U.S. Naval Institute
Institute for Defense Analyses, Science and Technology Division
Center for Naval Analyses
Defense Technical Information Center (DDAC) (2)