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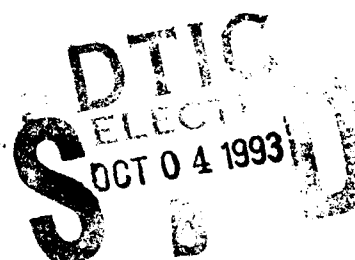
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The Subjective Quality of Life of Navy Personnel

Stephanie Booth-Kewley
Marie D. Thomas



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13. ABSTRACT (Maximum 200 words) The subjective quality of life (QOL) of a sample of enlisted Navy personnel (68 males and 64 females) was studied. Measures were administered assessing: global QOL, satisfaction with 13 life domains, satisfaction with the Navy, satisfaction with Navy job, personality dimensions, and demographic characteristics. Subjective global QOL for this Navy sample was high. Respondents were the most satisfied with Relations With Your Children, Marriage/Romantic Relationship, and Health. They were the least satisfied with Income/Standard of Living, Neighborhood, Community, and the Navy. The life domains that contributed the most to respondents' global subjective QOL were Income/Standard of Living, Marriage/Romantic Relationship, Job and Self. In general, the demographic variables were not related to subjective QOL. Each of the six personality variables studied was significantly associated with global QOL. The results of this investigation were compared with past civilian QOL research, and their implications for the Navy were discussed.					
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Foreword

This report presents the results of a research project on the subjective quality of life (QOL) of Navy enlisted personnel. The purposes of the research were to assess the level of QOL, to identify the life domains that are most strongly related to global QOL, and to determine the relationship of demographic and personality variables with QOL in a sample of Navy enlisted personnel.

This project was conducted under the sponsorship of the Office of Naval Research (Code 222) within Program Element 0602233N, Work Unit 0602233N.RM33M20.05 (Measuring Quality of Life). This is the only report that will result from this effort.

The authors wish to thank the Navy service members who agreed to participate in this effort. Special thanks go to Elyse Kerce for conducting a large number of the interviews and to Jack Edwards for his helpful comments on this report.

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Summary

Problem

Over the past several decades, quality of life (QOL) has increasingly become an important concern in the United States. In the Navy, a large number of programs have been established to enhance the QOL of Navy personnel and their families. As a result, the Navy now expends substantial resources on such programs. Despite these expenditures, very little is known about the QOL of Navy personnel, about the aspects of life that play the largest role in determining their QOL, and about the QOL of Navy service members with varying demographic and personality characteristics.

Although there has been some research on QOL with Navy samples, most Navy studies have focused on a few very specific aspects of QOL or have been evaluations of Navy QOL programs. No research to date has comprehensively assessed the subjective QOL of Navy service members.

Purpose

The purposes of the present project were to: (1) assess the subjective QOL of a sample of Navy personnel, (2) identify the life domains that are most strongly associated with global QOL, and (3) determine the associations of demographic and personality variables with QOL.

Method

Interviews and questionnaires were administered to 132 Navy enlisted respondents (68 males and 64 females) assigned to activities in San Diego and Norfolk. The variables assessed included: (1) global subjective QOL, (2) satisfaction with 13 specific life domains, (3) satisfaction with the Navy, (4) satisfaction with Navy job, (5) personality dimensions, and (6) demographic characteristics.

Findings

1. In general, subjective global QOL for this sample of Navy personnel was high.
2. The life domains with which respondents were the most satisfied were Relations With Your Children, Marriage/Romantic Relationship, and Health.
3. The life domains with which respondents were the most dissatisfied were Income/Standard of Living, Neighborhood, Community, and the Navy.
4. Respondents' evaluations of their Income/Standard of Living, Marriage/Romantic Relationship, Job, and Self were the most strongly associated with global QOL.
5. Five life domains (Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and the Navy) explained 55% of the variance in composite QOL scores. Using additional life domains did not increase the percentage of variance accounted for.

6. Respondents reported a mixture of positive and negative feelings towards the Navy. Most respondents liked being in the Navy and planned to reenlist; however, "the Navy" as a life domain was rated low relative to the other life domains, and was often chosen as one of the three most negative domains in respondents' lives.

7. The demographic variables were largely unrelated to subjective QOL. Only one demographic variable—family income—had a significant association with QOL.

8. All six of the personality variables studied were significantly associated with global QOL. Of these, global QOL was most closely associated with Neuroticism and Agreeableness. However, personality explained only a modest amount of the variance (15%) in subjective global QOL.

Conclusions

1. QOL findings for this sample of Navy personnel were consistent with results obtained in civilian samples.

2. Income/Standard of Living and Marriage/Romantic Relationship played the largest role in determining respondents' QOL.

3. Demographic variables did not play an important role in subjective QOL.

4. This research project provided further evidence that personality variables play a role in subjective QOL.

5. Obtaining domain importance ratings from respondents is of limited value in global QOL assessment.

6. Although one might expect global QOL to be a complex, multiply-determined phenomenon, prediction of subjective QOL was best achieved by simply summing the satisfaction ratings for a small number of life domains.

Recommendations

1. The Navy should focus QOL efforts and programs on the domains that respondents were most dissatisfied with: Community, Income/Standard of Living, Neighborhood, and the Navy.

2. The Navy should also focus QOL efforts and programs on the domains found to contribute the most to service members' subjective QOL: Income/Standard of Living, Marriage/Romantic Relationship, Job, and Self.

3. Because this research project found personality to be associated with subjective QOL, future research should be conducted to learn more about the effects of personality on QOL.

4. Given evidence of their limited value in QOL assessment, it is recommended that future researchers not obtain domain importance ratings from respondents.

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Introduction

Background and Problem

Over the past several decades, quality of life (QOL) increasingly has become an important concern in the United States. In the Navy, a large number of programs have been established (e.g., counseling and relocation assistance) to enhance the QOL of Navy personnel and their families. As a result, the Navy now spends over \$2 billion annually on such programs. Despite these expenditures, very little is known about the QOL of Navy personnel, about the aspects of life that play the biggest role in determining their QOL, and about the QOL of Navy service members with varying demographic characteristics (e.g., sex, age, marital status).

Past civilian research has used a variety of strategies to assess QOL. Whereas early research relied primarily on income and other "objective" indicators of QOL, more recent studies have used subjective measures, such as life satisfaction or well-being measures (Andrews & Withey, 1976; Campbell, 1981; Campbell, Converse, & Rodgers, 1976). The subjective approach to measuring QOL assumes that (1) the individual can accurately assess his or her own life and (2) the individual's subjective sense of well-being is important. The popularity of this approach to researching QOL was bolstered by research that found only weak relationships between objective life conditions (e.g., income) and subjective well-being (see Andrews & Withey, 1976; Campbell et al., 1976; Cantril, 1965; Kammann, 1983).

Subjective QOL can be assessed using global measures, domain-specific measures, or both types of QOL measures. The global measures ask respondents to evaluate their lives as a whole, whereas the domain-specific measures ask respondents to evaluate specific aspects of their lives (e.g., marriage, job). Like the largest, most widely cited studies of QOL (Andrews & Withey, 1976; Campbell et al., 1976; Campbell, 1981), the present research project used both global and domain-specific measures. This strategy allowed the patterns of relationships between the domain measures to be examined and the contribution of each domain to overall subjective QOL to be assessed.

Research conducted with U.S. populations has found that when Americans are asked to give overall assessments of their lives, the vast majority report high or very high subjective QOL. For example, research based on several large samples (Campbell, 1981; Campbell et al., 1976) found that 85-90% of each sample stated they were "pretty happy" or "very happy," as opposed to "not too happy." Research by Bradburn (1969) and Andrews and Withey (1976) produced similar results: in both studies, 88-91% of the respondents described themselves as at least "pretty happy." Similar positive findings (Andrews & Withey, 1976) have been obtained when respondents indicated their satisfaction with their lives as a whole. Campbell (1981, p. 28) concluded that, "People seem to try hard to see their lives in a positive light." One objective of the present research project was to determine the level of subjective QOL experienced by Navy enlisted service members.

A number of studies have examined satisfaction with specific life domains in relation to overall QOL. That research is informative because the importance of specific life domains in affecting overall happiness or satisfaction can be determined. Campbell and his colleagues (Campbell, 1981; Campbell et al., 1976) found that the life domains making the largest contribution to life satisfaction were family life, marriage, self, standard of living, friends, and job. Andrews and Withey (1976) obtained similar findings: Self, standard of living, marriage and family life, the amount of fun one has, and housing were the domains with the strongest relationships to overall

QOL. Given differences between Navy and civilian life, a second objective of the present research project was to determine which life domains make the largest contribution to QOL in a Navy sample.

Many studies (e.g., Andrews & Withey, 1976; Campbell, 1981; Campbell et al., 1976; Larson, 1978) have sought to identify demographic factors associated with QOL. Surprisingly, demographic variables have *not* been strongly associated with subjective well-being. Using multiple regression, Campbell and his colleagues (Campbell, 1981; Campbell et al., 1976) reported that 10 demographic variables (e.g., age, family income, race, and sex) explained no more than 17% of the variance in global QOL. Andrews and Withey (1976) found that six demographic variables used together accounted for less than 10% of the variance in QOL. The demographic variables that have been most consistently linked with QOL include (1) marital status (Campbell et al., 1976; Schuessler & Fisher, 1985), (2) education (Campbell et al., 1976; Edwards & Klemmack, 1973), and (3) income (Campbell et al., 1976; Palmore & Luikart, 1972). However, the effects of these variables appear modest, and have not been found in all studies. The associations of demographic variables with global QOL have not yet been studied in an enlisted Navy sample and are examined in the present investigation.

Because demographic variables have proved to be relatively weak predictors of QOL, researchers have sought other variables that might be related to subjective QOL. One set of variables that appears promising in this regard is personality dimensions. A number of studies have found significant associations between personality and subjective QOL, but these have mainly focused on extraversion and neuroticism (cf. Diener, 1984). Many studies have shown that the personality dimensions of sociability and extraversion are positively associated with subjective QOL (Beiser, 1974; Costa & McCrae, 1980; Diener, 1984; Emmons & Diener, 1985; Fordyce, 1988; Headey & Wearing, 1989; Wessman & Ricks, 1966) and that neuroticism and closely-related constructs (e.g., emotionality and emotional instability) are negatively associated with subjective QOL (Costa & McCrae, 1980; Diener, 1984; Emmons & Diener, 1985; Fordyce, 1988; Headey & Wearing, 1989; Veroff, Feld, & Gurin, 1962; Wilson, 1967). QOL research on other personality variables has been minimal. Two other major personality dimensions considered as possible determinants of well-being are agreeableness and conscientiousness. Recent evidence (Holahan, 1988; McCrae & Costa, 1991) suggests that these two personality factors have a positive effect on subjective QOL. There is also evidence that self-esteem is associated with subjective QOL (Diener, 1984; Emmons & Diener, 1985; Fordyce, 1983). One other personality dimension that may have relevance to QOL is dispositional optimism—the stable, generalized expectation that good things will happen (Scheier & Carver, 1987). Carver and Gaines (1987) and Scheier et al. (1989) have provided evidence that optimism may be linked to higher subjective QOL. In the present research, extraversion, agreeableness, conscientiousness, self-esteem, and optimism are studied in relation to subjective QOL.

Although there has been some research on QOL with Navy samples (e.g., Stumpf & Kieckhafer, 1975; Wilcove & Kerce, 1991; Woodruff & Conway, 1990), most Navy studies have focused on a few very specific aspects of QOL (e.g., Stumpf & Kieckhafer's [1975] research on housing QOL) or have been evaluations of Navy programs designed to promote QOL (e.g., Wilcove & Kerce's [1991] survey assessing satisfaction with the Navy's family support services). No research to date has comprehensively assessed the subjective QOL of Navy service members, examined the contributions of various life domains to service members' global QOL, or examined demographic and personality characteristics in relation to global QOL.

Purpose

The purposes of the present research project were to: (1) determine the subjective QOL of a sample of Navy personnel, (2) identify the life domains that are most strongly associated with global QOL, and (3) determine the associations of demographic and personality variables with QOL.

Method

Sample

The 132 respondents were enlisted Navy personnel assigned to the Personnel Support Detachment (PSD), North Island Naval Air Station, San Diego ($n = 41$), the Antisubmarine Warfare Wing Pacific (AIRPAC), North Island Naval Air Station, San Diego ($n = 33$), the PSD, Norfolk Naval Station, Norfolk ($n = 18$), and the Aircraft Intermediate Maintenance Department (AIMD), Norfolk Naval Air Station, Norfolk ($n = 40$).

There were 68 males and 64 females in the sample. The primary race and ethnic groups were non-Hispanic White (52%), Black (20%), Hispanic (17%), and Asian (7%). Respondents ranged in age from 18 to 46, with a mean age of 28 years ($SD = 6.9$ years). All but two respondents had high school diplomas; the other two had high school equivalency degrees. Forty-five percent of the sample also had some college, but no degree. Eleven percent had 2- or 4-year college degrees.

Fifty-nine percent of the respondents were married, 30% had never been married, and 11% were separated or divorced. Over half of the sample (55%) had children; the mean number of children was 1.8. Male and female respondents were equally likely to be parents: 54% of the males and 56% of the females were parents.

The sample represented a fairly narrow range of Navy ratings: 50% of the respondents were in white-collar clerical or administrative ratings (e.g., disbursing clerk), and 46% were in blue-collar aviation ratings (e.g., aviation electronics technician). The remaining 4% were in ratings that were neither aviation-related nor clerical (e.g., boatswain's mate). The males and females in the sample were distributed similarly across the three rating categories. Of the male respondents in the sample, 47% were in clerical/administrative ratings, 50% were in aviation ratings, and 3% were in other ratings. Of the females, 53% were in clerical/administrative ratings, 42% were in aviation ratings, and 5% were in other ratings.

The paygrades of the respondents ranged from E-1 to E-9, with a modal paygrade of E-6. The majority of respondents (83%) were in paygrades E-3 through E-6. The average annual family income reported by respondents was \$25,807 ($SD = \$11,867$). The average per capita income (family income divided by number of people supported) was \$11,552 ($SD = \$5,573$).

Measures

The data were obtained through interviews and paper-and-pencil questionnaires. The measures used in the study are shown in Tables 1 through 7. Also shown in these tables is the method by which each measure was administered (interview or questionnaire) and the coefficient alpha reliabilities obtained with the present sample for each of the multi-item scales.

Global QOL Measures

A variety of measures designed to assess subjective global QOL, life satisfaction, or happiness were used (see Table 1). These global measures attempted to assess people's feelings towards their lives as a whole. Most of these measures (Life 1, Life 2, Life 3, Life 4, and Life 5, and the Delighted-Terrible [D-T] Rating of Life as a Whole) are single-item measures of global QOL. Two of the global measures (the Bradburn scales and the Satisfaction With Life [SWL] scale) are multi-item measures.

Table 1
Global QOL Measures

Measure	Description	Interview or Questionnaire
Life 1	"Would you say you have a very good life, a good life, an okay life, a bad life, or a very bad life?"	Interview
Life 2	"How satisfied are you with your Life as a Whole these days?" Answered using a 7-point scale ranging from 1 = completely dissatisfied to 7 = completely satisfied.	Interview
Life 3	"Considering the way that your life is going, would you like it to continue much the same way, change some parts of it, or change many parts of it?"	Interview
Life 4	"Taking all things together, how would you say things are these days—would you say you're very happy, pretty happy, or not too happy?"	Interview
Life 5	"How would you rate the quality of your life overall right now?" Answered using 7-point scale ranging from 1 = extremely low to 7 = extremely high.	Interview
Delighted-Terrible (D-T) Rating of Life as a Whole	"How do you feel about your Life as a Whole?" Answered using the 7-point D-T scale ranging from 1 = terrible to 7 = delighted.	Questionnaire
Positive Affect	Bradburn's (1969) Positive Affect Scale, consisting of five items (coefficient alpha = .67).	Questionnaire
Negative Affect	Bradburn's (1969) Negative Affect Scale, consisting of five items (coefficient alpha = .70).	Questionnaire
Affect Balance	Bradburn's (1969) Affect Balance Scale. A measure of happiness, defined by Bradburn as the relative balance of positive and negative affect. The Affect Balance score was computed by subtracting the Negative Affect score from the Positive Affect score, and adding five (coefficient alpha = .68).	Questionnaire
Satisfaction With Life (SWL) Scale	Diener, Emmons, Larsen, and Griffin's (1985) five-item measure of global life satisfaction (coefficient alpha = .85).	Questionnaire

Life 1 and Life 5 were developed especially for this research. The remaining global QOL measures were developed by other researchers: Life 2 by Campbell et al. (1976), Life 3 and the D-T Rating of Life as a Whole by Andrews and Withey (1976), Life 4 by Gurin, Veroff, and Feld (1960), the Bradburn scales by Bradburn (1969), and the SWL scale by Diener, Emmons, Larsen, and Griffin (1985).

Bradburn's Affect Balance Scale is a 10-item measure of happiness or affect. It has two subscales: a Positive Affect scale (five items), and a Negative Affect scale (five items). In addition to Positive Affect and Negative Affect scores, this measure yields an Affect Balance score, which is the difference between positive and negative affect. The Affect Balance Scale has been widely used, and has adequate test-retest reliability, internal consistency, and validity (Bradburn, 1969; George & Bearon, 1980).

The SWL scale is a five-item scale designed to measure global life satisfaction. It has adequate internal consistency reliability and validity, and is not contaminated by social desirability response bias (Diener et al., 1985).

Domain Measures

The life domain measures asked individuals how they felt about specific areas of their lives, information not captured by global measures. The 13 life domains used in this research (shown in Table 2) are a modified version of the set of domains used by Campbell (1981).

Table 2
Domain Measures

Measure	Description	Interview or Questionnaire
Life Domain	Marriage/Romantic Relationship Relations With Your Children Relations With Other Relatives Friends/Friendships Self (e.g., Personal Development, etc.) Health Leisure/Nonwork Activities Job Income/Standard of Living Neighborhood House or Apartment The Navy/the Way the Navy has Treated You Community (e.g., San Diego or Norfolk)	
Domain Ratings	Answered for the above life domains using the Delighted-Terrible (D-T) scale ranging from 1 = terrible to 7 = delighted.	Questionnaire
Domain Importance Ratings	Respondents rated the importance of each of the 13 life domains using a 7-point scale ranging from 1 = not at all important to 7 = extremely important.	Interview
Most Positive Life Domains	Out of the 13 life domains, respondents selected the three that make the largest positive contribution to their overall quality of life (QOL).	Interview
Most Negative Life Domains	Out of the 13 life domains, respondents selected the three that make the largest negative contribution to their overall QOL.	Interview

Each respondent evaluated the 13 life domains three times. For the domain ratings, respondents indicated how they felt about each of the 13 life domains using the 7-point D-T scale. For the domain importance ratings, respondents rated how important each domain was to them personally, using a rating scale that ranged from 1 = not at all important to 7 = extremely important. For the "most positive life domains" and "most negative life domains" variables, respondents selected from the list of life domains the three domains that made the largest positive and the three domains that made the largest negative contributions to their overall QOL.¹

Desired Life Change Measures

The desired life change measures were developed specifically for this research (Table 3). Respondents were asked the open-ended question, "If you could magically change one or more parts of your life, what would you change?" Responses to this open-ended question were classified into categories (e.g., would like to make more money) based on content similarity. The "number of desired life changes" variable was simply the sum of changes stated by respondents in response to this question.

Table 3

Desired Life Change Measures

Measure	Description	Interview or Questionnaire
Desired Life Changes Categories	Responses to the question, "If you could 'magically' change one or more parts of your life, what would you change?" were classified into categories.	Interview
Number of Desired Life Changes	The number of life changes respondents mentioned in response to the question, "If you could 'magically' change one or more parts of your life, what would you change?"	Interview

Navy Variables

The Navy variables were also developed specifically for this research. Respondents were asked to rate How Much They Like Being in the Navy, How Stressful the Navy Is, The Degree to Which the Navy has Affected Them Positively as a Person, The Degree to Which the Navy has Affected Their QOL Positively, How Supportive Navy is of Navy Families, and How Satisfied They are With the Navy's Family Support Programs. Respondents were also asked if they plan to reenlist. Possible responses to this question were *Yes*, *Unsure*, and *No*, coded 3, 2, and 1, respectively (see Table 4).

Job Variables

To assess respondents' feelings about their jobs, they rated their jobs overall and 10 specific aspects of their jobs, using the 7-point D-T scale. The job items were developed specifically for this project. The 10 job components that respondents rated were Co-workers, Immediate

¹Respondents could choose from the 13 life domains, plus an "Other" category, which they could select if the most positive or negative areas of their lives did not fall within the 13 categories listed.

Table 4
Navy Variables

Measure	Description	Interview or Questionnaire
How Much You Like Being in the Navy	"How much do you like being in the Navy?" Answered using a 7-point scale ranging from 1 = not at all to 7 = a great deal.	Interview
How Stressful the Navy Is	"How stressful do you find being in the Navy?" Answered using a 7-point scale ranging from 1 = not at all stressful to 7 = extremely stressful.	Interview
Intention to Reenlist	"When you complete your current enlistment, do you plan to reenlist?" Possible responses were: yes, unsure, and no, coded 3, 2, and 1, respectively.	Interview
Degree to Which Navy has Affected You Positively as a Person	"Overall, what kind of effect do you think the Navy has had on the type of person you are today?" Answered using a 7-point scale ranging from 1 = extremely negative to 7 = extremely positive.	Interview
Degree to Which Navy has Affected Your Quality of Life (QOL) Positively	"What kind of impact has the Navy had on your QOL?" Answered using a 7-point scale ranging from 1 = extremely negative to 7 = extremely positive.	Interview
How Supportive Navy is of Navy Families	"To what degree do you feel that the Navy is supportive or unsupportive of families?" Answered using a 7-point scale ranging from 1 = not at all supportive to 7 = extremely supportive.	Interview
How Satisfied You are With Family Support Programs	"How satisfied are you with the Navy's Family Support programs?" Answered using a 7-point scale ranging from 1 = completely dissatisfied to 7 = completely satisfied.	Interview

Supervisor, Number of Hours Worked, Predictability of Work Hours, Recognition Received for Work, Workload, Chance to Learn and Use New Skills, Chances for Advancement, Working Conditions, and The Work Itself (see 6).

Personality Variables

Six personality variables were assessed: Neuroticism, Extraversion, Agreeableness, Conscientiousness, Optimism, and Self-Esteem (see Table 6). Neuroticism, Extraversion, Agreeableness, and Conscientiousness were measured using the NEO Five-Factor Inventory (NEO-FFI) (Costa & McCrae, 1989). The other NEO scale, Openness to Experience, was not used because of time constraints and because we did not think it would be relevant to QOL. The NEO-FFI is the short, 60-item version of the NEO Personality Inventory (Costa & McCrae, 1985), a widely used instrument. Each of the NEO-FFI scales has adequate internal consistency, test-retest reliability, and validity (Costa & McCrae, 1989; Marshall, Wortman, Vickers, Kusulas, & Hervig, 1991).

Optimism was measured using a four-item measure developed by Scheier et al. (1989). The four-item measure is a subset of items from Scheier and Carver's (1985) Life Orientation Test (LOT). Although Scheier et al. (1989) did not provide psychometric information for the four-item LOT, they found it to be highly correlated with the original LOT (r 's of .78 to .89), which has adequate internal consistency and test-retest reliability (Scheier & Carver, 1985).

Table 5
Job Variables

Measure	Description	Interview or Questionnaire
Job Overall	"How do you feel about your job overall?" Answered using the 7-point Delighted-Terrible (D-T) scale ranging from 1 = terrible to 7 = delighted.	Interview
Co-workers	"How do you feel about your Co-workers?" Answered using the 7-point D-T scale.	Interview
Immediate Supervisor	"How do you feel about your immediate supervisor?" Answered using the 7-point D-T scale.	Interview
Number of Hours Worked	"How do you feel about the number of hours you work?" Answered using the 7-point D-T scale.	Interview
Predictability of Work Hours	"How do you feel about the predictability of your work hours?" Answered using the 7-point D-T scale.	Interview
Recognition Received for Work	"How do you feel about the recognition you receive for your work?" Answered using the 7-point D-T scale.	Interview
Workload	"How do you feel about the amount of work you must do?" Answered using the 7-point D-T scale.	Interview
Chance to Learn and Use New Skills	"How do you feel about your chance to learn and use new skills (at work)?" Answered using the 7-point D-T scale.	Interview
Chances for Advancement	"How do you feel about your chances for advancement?" Answered using the 7-point D-T scale.	Interview
Working Conditions	"How do you feel about your working conditions?" Answered using the 7-point D-T scale.	Interview
The Work Itself	"How do you feel about the work itself?" Answered using the 7-point D-T scale.	Interview

Table 6
Personality Variables

Measure	Description	Interview or Questionnaire
Neuroticism	Neuroticism scale of the NEO Five-Factor Inventory (NEO-FFI) (coefficient alpha = .85).	Questionnaire
Extraversion	Extraversion scale of the NEO-FFI (coefficient alpha = .72).	Questionnaire
Agreeableness	Agreeableness scale of the NEO-FFI (coefficient alpha = .68).	Questionnaire
Conscientiousness	Conscientiousness scale of the NEO-FFI (coefficient alpha = .86).	Questionnaire
Optimism	The four-item version of the Life Orientation Test (Scheier et al., 1989), a measure of dispositional optimism (coefficient alpha = .58).	Questionnaire
Self-Esteem	Rosenberg's (1965) Self-Esteem scale, a 10-item measure of self-esteem (coefficient alpha = .85).	Questionnaire

The Rosenberg Self-Esteem Scale (Rosenberg, 1965), a widely used instrument, was used to measure self-esteem. This scale has adequate internal consistency, test-retest reliability, and validity (Rosenberg, 1965).

Demographic Variables

A demographic inventory assessed respondents' sex, age, race/ethnicity, education level, family income, and number of people supported by that income. The interview assessed respondents' marital status, whether or not they had children, number of children, rating, paygrade, and tenure in the Navy (see Table 7).

Table 7
Demographic Variables

Measure	Description	Interview or Questionnaire
Sex	"Are you . . . ? (1) Male or (2) Female"	Questionnaire
Age	"How old are you?"	Questionnaire
Race/Ethnicity	Assessed using two questions: "Are you . . . ? (1) White, (2) Black/African American, (3) Oriental/Filipino/Pacific Islander, (4) American Indian/Alaskan Native, or (5) Other" and "Are you of Spanish/Hispanic origin or descent?"	Questionnaire
Education	"What is your highest level of education?" (1) Less than high school graduate, (2) High school equivalency, (3) High school diploma, (4) Some college, no degree, (5) Associate's degree, (6) Bachelor's degree, or (7) Master's degree or higher.	Questionnaire
Marital Status	Assessed using two questions: "Are you married?" and "Have you ever been married?" Responses were classified as Never Married, Married, Divorced/Separated, or Widowed.	Interview
Duty Location	Recorded by the interviewer. The four duty locations were PSD, San Diego; AIRPAC, San Diego; PSD, Norfolk; and AIMD, Norfolk.	Interview
Community	Recorded by the interviewer. The two communities were San Diego and Norfolk.	Interview
Parent vs. Nonparent	"Do you have any children?"	Interview
Number of Children	"How many children do you have?"	Interview
Job Type	"What is your rating?" Ratings were classified as aviation, clerical/administrative, or "other."	Interview
Family Income	"What was your total family income (pay and allowances for both you and your spouse) for the past year?"	Questionnaire
Number of People Supported	"How many people are supported by this income (including yourself)?"	Questionnaire
Per Capita Income	Family income divided by number of people supported	Questionnaire
Paygrade	"What is your paygrade?"	Interview
Tenure	"How long have you been in the Navy?"	Interview

Note. PSD = Personnel Support Department. AIRPAC = Antisubmarine Warfare Wing Pacific. AIMD = Aircraft Intermediate Maintenance Department.

Procedure

Except for the variables that are conventionally measured in a questionnaire format (all six of the personality measures, the Bradburn Affect Balance scales, and the SWL scale), it was considered preferable to obtain as much of the data as possible from interviews. However, constraints on the respondents' time made this impossible. Therefore, in addition to the six personality measures, the Bradburn scales, and the SWL scale, the following measures were administered via questionnaire: the Delighted-Terrible (D-T) Rating of Life as a Whole, the 13 domain ratings, and the demographic variables that did not require probing or branching (sex, age, race/ethnicity, education, family income, and number of people that the respondent supports financially). All other information was obtained via interview.

Each respondent was interviewed individually in a private office at his or her duty station. Prior to being interviewed, respondents were assured that their responses would be kept confidential and would not affect their Navy careers. The following variables were assessed in the interview: Life 1-Life 5, domain importance ratings, most positive and most negative life domains, desired life changes, Navy variables, job variables, and six demographic variables (marital status, parent vs. nonparent, number of children, job type, paygrade, and tenure in the Navy).

After being interviewed, each respondent was administered the questionnaire. The questionnaire included D-T Rating of Life as a Whole, the Affect Balance Scale, the SWL Scale, the domain ratings, measures of Neuroticism, Extraversion, Agreeableness, Conscientiousness, Optimism, and Self-Esteem, and the demographic inventory. (Tables 1 through 7 show all the measures used in this research, and whether each was assessed via interview or questionnaire.)

The interview and questionnaire sessions took an average of 60 minutes (45 minutes for the interview and 15 minutes for the questionnaire). After completing the sessions, respondents were debriefed and reassured of the confidentiality of their responses.

Because of the exploratory nature of this investigation, a variety of different statistical analysis were performed to define the critical parameters of QOL.

Results

Respondents' Global QOL

Respondents' answers to the five questions that asked about their global QOL or life satisfaction are shown in Table 8.

When respondents were asked, "Would you say you have a very good life, a good life, an okay life, a bad life, or a very bad life?" (Life 1), 75% stated that they have either "a good life" or "a very good life." No respondent chose "a bad life" or "a very bad life."

Respondents answered the Life 2 question, "How satisfied are you with your life as a whole these days?" using a 7-point scale ranging from 1 = completely dissatisfied to 7 = completely satisfied. Eighty-two percent of respondents indicated being satisfied with their lives (i.e., they gave a rating of 5, 6, or 7). Only 6% chose a response on the negative side of the neutral point. The distribution of responses to this question is similar to results obtained in two large-scale, national samples (Andrews & Withey, 1976; Campbell et al., 1976).

Table 8
Responses to Global QOL Questions

Question	Responses (%)						
Would you say you have a . . . (Life 1)	Very Bad Life		Bad Life	Okay Life	Good Life		Very Good Life
	0		0	25	54		21
How satisfied are you with your life as a whole these days? (Life 2)	Completely Dissatisfied (1)	(2)	(3)	Neutral (4)	(5)	(6)	Completely Satisfied (7)
	2	0	4	12	40	33	9
Considering the way that your life is going, would you like it to . . . (Life 3)	Change Many Parts			Change Some Parts			Continue Much the Same Way
	17			77			6
Taking all things together, how would you say things are these days—would you say you're . . . (Life 4)	Not too Happy			Pretty Happy			Very Happy
	13			69			18
How would you rate the quality of your life overall right now? (Life 5)	Extremely Low (1)	(2)	(3)	Neutral (4)	(5)	(6)	Extremely High (7)
	0	4	5	17	38	30	6
Delighted-Terrible (D-T) Rating of Life as a Whole	Terrible (1)	(2)	(3)	Mixed (4)	(5)	(6)	Delighted (7)
	0	1	2	11	32	47	7

Life 3 asked respondents, "Considering the way your life is going, would you like it to continue much the same way, change some parts of it, or change many parts of it?" Interestingly, only 6% of respondents wanted their lives to "continue much the same way," 77% wanted to "change some parts of it," and 17% wanted to "change many parts." These results differ somewhat from results obtained by Andrews and Withey (1976): in their study, the corresponding percentages were 36%, 54% and 10%. Thus, our sample was less satisfied with the status quo than was Andrews and Withey's (1976).

When respondents were asked, "Taking all things together, how would you say things are these days—would you say you're very happy, pretty happy, or not too happy?," fully 87% said they were "pretty happy" or "very happy." These results are similar to those obtained in samples studied by Bradburn (1969) and Andrews and Withey (1976): Between 88 and 91% of their respondents said they were "pretty happy" or "very happy."

Life 5 asked respondents, "How would you rate the quality of your life overall right now?" using a scale that ranged from 1 = extremely low to 7 = extremely high. Responses to this question were, once again, markedly positive. Seventy-four percent of respondents gave ratings of 5, 6, or 7 to their overall QOL.

For D-T Rating of Life as a Whole, 86% of respondents gave their life a rating of 5, 6, or 7. In Andrews and Withey's (1976) research, between 80 and 85% of their three samples gave ratings of 5, 6, or 7 to their life as a whole.

Taken together, responses to the global QOL questions revealed that respondents generally felt positive about their lives as a whole, although most also expressed a desire to change some aspects of their lives. Only 5% of respondents gave ratings of 1 or 2 (the most negative ratings) to any of the global QOL questions that used 7-point scales (Life 2, Life 5, and D-T Rating of Life as a Whole). No respondent gave a rating of 1 or 2 to the global QOL question (Life 1) that used a 5-point scale. For the two global questions (Life 3 and Life 4) that used 3-point response scales, only small proportions of the sample (17% and 13%, respectively) chose the most negative response option.

The intercorrelations among the 10 global QOL measures are shown in Table 9. Most of the QOL measures correlated moderately with each other. The coefficients ranged (in absolute magnitude) from .09 to .77, with most falling between .25 and .65.

Table 9
Intercorrelations Among Global QOL Measures

	1	2	3	4	5	6	7	8	9	10
Life 1		42	30	51	50	32	-18	31	46	50
Life 2			39	46	65	29	-25	35	61	68
Life 3				37	36	09	-25	24	41	38
Life 4					66	29	-40	45	54	59
Life 5						38	-27	41	60	77
Positive Affect							-17	68	31	44
Negative Affect								-84	-30	-32
Affect Balance									40	48
Satisfaction With Life (SWL) Scale										65
Delighted-Terrible (D-T) Rating of Life as a Whole										

Note. Decimals are omitted.

Evaluation of Global QOL Measures

Although the present research project used eight global QOL measures, future practical concerns may dictate that only two or three such measures be used. We therefore determined which of the measures would be preferred. The criteria used to make this determination involved (1) the distribution of the responses for each global QOL measure, (2) the intercorrelations among the global QOL measures, and (3) the average correlation of each measure with the 13 life domain

ratings. For the first criterion, heavy clustering of scores was regarded as undesirable because such distributions do not allow discrimination among the people within the cluster. For the second and third criteria, higher correlations were regarded as desirable, because they indicate convergent validity. Table 10 shows the average correlations of the global QOL measures with the other global QOL measures and the average correlations of each measure with the 13 domain ratings.

Table 10
Average Correlations of Global QOL Measures With all Other
Global QOL Measures and With Domain Ratings

	Average Correlation With Global Measures	Average Correlation With Domain Ratings
Life 1	.43**	.22*
Life 2	.51**	.30**
Life 3	.35**	.15
Life 4	.51**	.31**
Life 5	.56**	.32**
Affect Balance	.38**	.28**
Satisfaction With Life (SWL) Scale	.52**	.33**
Delighted-Terrible (D-T) Rating of Life as a Whole	.58**	.36**

* $p < .05$.

** $p < .01$.

Using the criteria defined above, the three *best* global QOL measures were D-T Rating of Life as a Whole, Life 5, and the SWL scale. D-T Rating of Life as a Whole had the highest average correlation with both the other global QOL measures ($r = .58$), and the domain ratings ($r = .36$). However, with 86% of responses falling in the top three response categories, D-T Rating of Life as a Whole was not one of the best measures with regard to response dispersion. Life 5 had a relatively high average correlation with the other global QOL measures ($r = .56$), and the domain ratings ($r = .32$). Compared with D-T Rating of Life as a Whole, Life 5 also had a better response distribution—74% of the scores fell in the top three response categories. The SWL scale had the best score distribution of any of the global measures: Responses were distributed across 27 data points, with scores ranging from 6 to 35, and resembled a normal distribution. Moreover, the SWL scale also had fairly high correlations with the other global QOL measures (mean $r = .52$) and with the domain ratings (mean $r = .33$). It thus appears that the D-T Rating of Life as a Whole, Life 5, and the SWL scale are preferable to the other global QOL measures.

Factor Analysis of Global QOL Measures

To determine the underlying structure of the global QOL measures and to form a QOL composite for use in subsequent analyses, these measures (Life 1, Life 2, Life 3, Life 4, Life 5, the Affect Balance score, the SWL scale, and the D-T Rating of Life as a Whole) were factor analyzed. The principal components method was used, followed by varimax rotation. The criterion for retaining factors was an eigenvalue greater than 1.0.

The factor analysis resulted in only one factor with an eigenvalue greater than unity.² The eigenvalue of this factor was 4.45 and accounted for 55.6% of the variance. The eigenvalue of the second factor was .79. Thus, a one-factor solution was clearly indicated. The measures loading most highly on this factor were the D-T Rating of Life as a Whole, Life 5, and the SWL scale.

QOL Composite

Respondents' scores on the eight global QOL measures (Life 1, Life 2, Life 3, Life 4, Life 5, Affect Balance, SWL Scale, and the D-T Rating of Life as a Whole) used in the factor analysis were summed to form a unit-weighted QOL composite. The internal consistency reliability (coefficient alpha) of the global QOL composite was .88. This suggests that the individual global QOL measures share substantial common variance, and supports combining the individual measures into a composite for subsequent analysis.

Correlations were computed between the individual global QOL measures and the QOL composite. These correlations are shown in Table 11. The correlations between the individual and composite QOL measures ranged from .58 for Life 3 to .85 for the D-T Rating of Life as a Whole.

Table 11
Correlations of Global QOL Measures With QOL Composite

Variable	Correlation With QOL Composite
Life 1	.68
Life 2	.77
Life 3	.58
Life 4	.78
Life 5	.84
Affect Balance	.62
Satisfaction With Life (SWL) Scale	.79
Delighted-Terrible (D-T) Rating of Life as a Whole	.85

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

Domain Ratings

Respondents rated the 13 life domains, using the 7-point D-T scale. The intercorrelations among the domain ratings are shown in Table 12. The domain ratings tended to be only modestly intercorrelated. This finding suggests that satisfaction with one area of life does not reveal much about satisfaction with other areas. The majority (64%) of the intercorrelations were smaller than .30. However, high or moderate intercorrelations were found between Neighborhood and

²Because it was not clear whether the factor analysis should include the separate Positive Affect and Negative Affect scores or the Affect Balance score (which reflects both positive and negative affect), two factor analyses were performed. One analysis used the two separate affect scales, and the other used the Affect Balance score instead. Both analyses yielded a one-factor solution. However, the analysis that used the Affect Balance score accounted for more variance (56% vs. 50%) and had cleaner factor loadings. Therefore, that analysis was used.

Table 12
Intercorrelations Among Domain Ratings

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Marriage/Romantic Relationship		37	18	-02	32	05	21	18	33	23	22	14	07
2. Relations With Your Children			22	24	34	31	36	18	30	07	14	03	29
3. Relations With Other Relatives				40	17	24	33	15	20	13	09	25	31
4. Friends/Friendships					21	25	33	20	15	16	07	28	24
5. Self (e.g., Personal Development, etc.)						48	36	41	41	28	18	23	16
6. Health							35	13	32	08	05	30	03
7. Leisure/Nonwork Activities								23	19	13	06	11	24
8. Job									49	29	14	55	32
9. Income/Standard of Living										49	34	49	26
10. Neighborhood											72	23	37
11. House or Apartment												15	31
12. The Navy/the Way the Navy has Treated You													33
13. Community													

Note. Decimals are omitted.

House or Apartment ($r = .72$), between Job and the Navy ($r = .55$), between Job and Income/Standard of Living ($r = .49$), between Income/Standard of Living and Neighborhood ($r = .49$), and between Income/Standard of Living and the Navy ($r = .49$). These higher correlations were, however, exceptions to the overall pattern of low to moderate intercorrelations among the domain ratings.

Mean ratings for the life domains are shown in Table 13. The frequency distribution of domain ratings is shown in Table 14. As was true for the global QOL measures, ratings of the individual life domains tended to cluster towards the high (satisfied) end of the scale.

The highest level of satisfaction was found for Relations With Your Children (with ratings based on $n = 74$ parents), Health, Marriage/Romantic Relationship, and Self. Lowest levels of satisfaction were expressed for Community, Income/Standard of Living, Neighborhood, and the Navy.

Contribution of Life Domains to Overall QOL

Two methods were used to determine which life domains contributed the most to respondents' QOL. The first method was to examine the domain importance ratings. The second was to examine the correlations of the domain ratings with the composite QOL score. Table 15 shows the mean importance ratings for each domain, and the correlations between the domain ratings and the composite QOL scores.

The five life domains with the highest importance ratings were (in order) Relations With Your Children, Health, Self, Income/Standard of Living, and Marriage/Romantic Relationship. The life

Table 13**Life Domain Ratings—Means and Rank Order of Means**

Domain	Mean	Rank
Marriage/Romantic Relationship	5.45	3
Relations With Your Children ^a	6.30	1
Relations With Other Relatives	5.30	6
Friends/Friendships	5.37	5
Self (e.g., Personal Development, etc.)	5.43	4
Health	5.57	2
Leisure/Nonwork Activities	4.96	8
Job	5.12	7
Income/Standard of Living	4.54	12
Neighborhood	4.63	11
House or Apartment	4.92	9
The Navy/the Way the Navy has Treated You	4.79	10
Community	4.43	13

Note. Ratings were made on the 7-point Delighted-Terrible (D-T) Scale.

^aBased on parents only, $n = 74$.

Table 14**Distribution of Domain Ratings**

	Delighted (%)	Pleased (%)	Mostly Satisfied (%)	Mixed (%)	Mostly Dissatisfied (%)	Unhappy (%)	Terrible (%)
Marriage/Romantic Relationship	32	27	13	18	6	3	1
Relations With Your Children ^a	55	23	18	4	0	0	0
Relations With Other Relatives	21	27	28	13	8	2	1
Friends/Friendships	10	40	31	16	2	1	0
Self (e.g., Personal Development, etc.)	17	36	27	14	4	2	0
Health	21	38	23	12	5	1	0
Leisure/Nonwork Activities	8	25	33	24	8	2	0
Job	12	29	31	17	8	2	1
Income/Standard of Living	3	19	35	23	14	4	2
Neighborhood	4	21	36	25	6	5	3
House or Apartment	7	34	27	19	5	6	2
The Navy/the Way the Navy has Treated You	6	23	34	25	5	5	2
Community	3	20	33	21	14	5	4

^aBased on parents only, $n = 74$.

Table 15
Mean Importance Ratings and Correlations of Domain Ratings
With QOL Composite

Domain	Mean Importance Rating	Correlation of Domain Ratings With QOL Composite
Relations With Your Children ^a	6.82 (1)	.38** (6)
Health	6.31 (2)	.28** (10)
Self (e.g., Personal Development, etc.)	6.21 (3)	.47** (4)
Income/Standard of Living	6.10 (4)	.61** (1)
Marriage/Romantic Relationship	6.01 (5)	.57** (2)
Job	5.90 (6)	.48** (3)
The Navy/the Way the Navy has Treated You	5.62 (7)	.46** (5)
Relations With Other Relatives	5.45 (8)	.29** (9)
House or Apartment	5.39 (9)	.25** (12)
Neighborhood	5.16 (10)	.37** (7)
Friends/Friendships	5.08 (11)	.22* (13)
Leisure/Nonwork Activities	5.06 (12)	.33** (8)
Community	4.89 (13)	.28** (11)

Note. The rank order of the mean importance ratings and the domain ratings are shown in parentheses.

^aBased on parents only, $n = 74$.

* $p < .05$.

** $p < .01$.

domains that correlated most highly with composite QOL scores were Income/Standard of Living, Marriage/Romantic Relationship, Job, Self, and the Navy. Thus, Income/Standard of Living, Marriage/Romantic Relationship, and Self emerge in the top five domains using both methods of evaluating domain importance.

The life domains that respondents rated as least important were Community, Leisure/Nonwork Activities, Friends/Friendships, Neighborhood, and House or Apartment. The domains found to have the smallest relationships with the composite QOL scores were Friends/Friendships, House or Apartment, Health, Community, and Relations With Other Relatives. Thus, three of the five domains (Friends/Friendship, Community, and House or Apartment) emerged as the least important domains using both methods.

Generally, the empirical associations and importance ratings for the domains fell in the same rank order. There were, however, exceptions to this pattern. The most notable exception was Health, which ranked as the second most important domain using the importance ratings, but had one of the weakest correlations with global QOL composite scores. (Interestingly, Campbell et al., [1976] reported this same finding.) Another major exception was Relations With Your Children. This domain ranked number one in the importance ratings but ranked 6th in its association with composite QOL scores.

Multiple Regression: Domain Ratings in Relation to QOL Scores

To find the *combination* of domain ratings that explained the largest amount of variance in the composite QOL scores, a stepwise multiple regression analysis was performed using ratings of all 13 domains as predictors. As shown in Table 16, ratings on five life domains made unique contributions to the prediction of QOL. These domains were Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and the Navy. Using these five domain ratings to predict QOL resulted in a multiple R of .77 ($R^2 = .59$). Adjusting for shrinkage (since cross-validation was not possible given the small sample) resulted in an R^2 of .55. These results indicate that the five life domain ratings captured 55% of the variance in the composite QOL scores.

Table 16

Multiple Regression of Domain Ratings as Predictors of QOL Composite

Variable	Step	Beta*	R
Income/Standard of Living	1	.61**	.61
Marriage/Romantic Relationship	2	.41**	.72
Job	3	.23**	.75
Leisure/Nonwork Activities	4	.14*	.76
The Navy	5	.17*	.77

*Beta weight at point of entry into the regression equation.

* $p < .05$.

** $p < .01$.

To learn more about the relation of the domain ratings to overall QOL, and to determine whether weighting domains by the domain importance ratings would improve QOL measurement, several experimental domain composites were computed using the domain ratings and the domain importance ratings.

First, a composite score was computed for each respondent by simply summing the ratings for all 13 life domains. This index is the Unweighted All-Domain Composite. Another composite, the Unweighted 5-Domain Composite, was computed by summing the ratings for only the five domains (Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and the Navy) that were significant predictors of composite QOL scores in the multiple regression analysis. Two additional experimental domain composites were computed that took domain importance ratings into account. These were: the Importance-Weighted All-Domain Composite, the sum of each domain rating multiplied by the importance rating for that domain, and the Importance-Weighted 5-Domain Composite, the sum of five domain ratings, multiplied by the corresponding importance rating.

Correlations were computed between the experimental domain composite scores and the global QOL scores (see Table 17). Some surprising findings emerged. First, although we expected the experimental composite using all the domains to have a larger association with QOL than the one that used only five domains, this expectation was not supported. The Unweighted 5-Domain

Composite had a higher correlation with the global QOL scores ($r = .75$) than did the Unweighted All-Domain Composite ($r = .69$). Second, the Unweighted 5-Domain Composite worked about as well ($r = .75$) as the regression equation using the same five domains ($k = .77$, shown in Table 16) for predicting the global QOL composite. Third, the importance rating-weighted composites had *smaller* associations with global QOL composite scores than did the simpler composites that did not take importance ratings into account. When importance was taken into account, the correlation of the life domain composite scores with global QOL composite scores *dropped*—from .69 to .62 when all 13 domains were used, and from .75 to .54 when five domains were used. This finding is consistent with previous research (e.g., Andrews and Withey, 1976). It suggests that taking importance ratings into account does not improve QOL measurement. In fact, importance weights have a negative impact on QOL measurement.

Table 17

Correlations of Experimental Composites With QOL Composite

Variable	Correlation With QOL Composite
Unweighted All-Domain Composite	.69
Importance Rating Weighted All-Domain Composite	.62
Unweighted 5-Domain Composite ^a	.75
Importance Rating Weighted 5-Domain Composite ^a	.54

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

^aDomains included in 5-Domain Composite: Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and the Navy.

The fact that the domain importance ratings made no contribution towards explaining variance in global QOL composite scores led us to suspect that importance ratings might be acting as poor surrogates for the satisfaction ratings. To investigate this possibility, correlation coefficients were computed between the satisfaction and importance ratings for each of the 13 life domains. Twelve of the thirteen correlations were positive, 9 out of the 13 were statistically significant ($p < .05$), and seven of the correlations exceeded .40. This high degree of association between satisfaction and rated importance suggests that the importance ratings may not have much validity.

Domains Chosen by Respondents as Having the Most Positive and Most Negative Effect on Their Lives

In the interview, respondents were asked to select the three life domains that have the greatest positive effect and the three domains that have the greatest negative effect on their lives (from the list of 13 domains, plus an "Other" category). The percentages of respondents who chose each domain as among their three most positive and three most negative life domains are shown in Table 18. Because nonparents could not choose Relations With Your Children as a most positive or most negative life domain, results are shown separately for parents and nonparents.

For parents, the domains chosen the most frequently as "most positive" life domains were Relations With Your Children (70%), Marriage/Romantic Relationship (68%), Self (27%), and Job (27%). For nonparents, the domains chosen the most frequently as positive domains were Marriage/Romantic Relationship (58%), Friends/Friendships (53%), and Self (46%). Note that Friends/Friendships was much more likely to be chosen by nonparents than by parents as a positive life domain.

Table 18

Respondents' Most Positive and Most Negative Life Domains

Domain	Parents		Nonparents	
	Most Positive (%)	Most Negative (%)	Most Positive (%)	Most Negative (%)
Marriage/Romantic Relationship	68	23	58	19
Relations With Your Children	70	10	0	0
Relations With Other Relatives	15	18	25	17
Friends/Friendships	23	16	53	5
Self (e.g., Personal Development, etc.)	27	15	46	20
Health	19	16	29	14
Leisure/Nonwork Activities	8	22	24	10
Job	27	29	24	25
Income/Standard of Living	18	53	24	59
Neighborhood	0	19	0	17
House or Apartment	8	14	7	20
The Navy/the Way the Navy has Treated You	12	33	9	46
Community	3	30	2	44
Other	0	1	2	1

The results for the "most negative" life domains were similar for parents and nonparents. For both groups of respondents, the domains chosen most frequently as negative life domains were Income/Standard of Living (parents, 53%; nonparents, 59%), the Navy (parents, 33%; nonparents, 46%), and the Community (parents, 30%; nonparents, 44%).

Table 18 can also be examined with the guiding assumption that domains chosen more frequently as either positive or negative are more *central* in the respondents' lives than those chosen less frequently. Using this assumption, the domains that appeared most central in the respondents' lives were, for parents: Marriage/Romantic Relationship, Relations With Your Children, Income/Standard of Living, and Job. For nonparents, they were: Income/Standard of Living, Marriage/Romantic Relationship, and Self. With the exception of Relations With Your Children, these are also the domains having the strongest associations with global QOL, further supporting the central role they play in the lives of the respondents.

We wanted to determine whether individuals who chose a particular domain as most positive or most negative differed in their global QOL composite scores from individuals not choosing that domain. To do this, each domain was dummy coded; respondents who selected that domain got a "1," respondents who did not, got a "0." This coding was done for both the positive and negative domain choices. Analyses of variance (ANOVAs) were performed using the dummy-coded most positive and most negative life domains variables as independent variables, and the global QOL composite scores as the dependent variable. Because 13 ANOVAs were performed, the .01 alpha level was used to avoid capitalizing on chance.

The ANOVAs revealed no significant effects of the most positive or most negative life domains on the composite QOL scores. There was no systematic tendency for individuals who chose particular life domains as most positive or most negative to have higher or lower QOL scores than other individuals.

Desired Life Changes

Responses to the question "If you could 'magically' change one or more parts of your life, what would you change?" were classified into categories, and the total number of changes desired by each respondent was calculated. Although respondents could name as many desired life changes as they wished, the number of changes desired only ranged from zero to five ($M = 2.8$). Desired life changes mentioned by 5% or more of the sample are shown in Table 19.

Table 19
Areas of Their Lives Respondents Want to Change

Desired Life Change	<i>N</i>	%
Make more money	54	41
Go to college/get college degree	44	33
Move to a different house, apartment, or neighborhood	30	23
Move to a different community	29	22
Change Navy job or some aspect of Navy job	29	22
Advance in the Navy	26	20
Improve self in some way (e.g., quit smoking)	23	17
Improve relationship with spouse or partner	19	14
Get out of the Navy	17	13
Start new civilian career or business venture	11	8
Improve relationship with children	10	8
Make major purchase (e.g., car or house)	9	7
Start romantic relationship	9	7
Improve relationship with family of origin (e.g., parents)	6	5
Work fewer hours	6	5

The changes mentioned most frequently by respondents were: make more money (41%) and go to college/get college degree (33%). Other changes mentioned by a sizeable portion of the sample were: move to a different house, apartment, or neighborhood (23%), move to a different community (22%), change Navy job or some aspect of Navy job (22%), and advance in the Navy (20%) (see Table 19). The changes that respondents wanted are consistent with the D-T life domain ratings. Both sets of results indicated that respondents were the most dissatisfied with their Community, Income/Standard of Living, Neighborhood, and the Navy.

It was expected that individuals with lower global QOL composite scores would express a desire for more life changes than individuals with higher QOL scores. To determine if this was true, the number of changes mentioned by respondents was correlated with their global QOL composite scores. A correlation of $-.51$ ($p < .01$) was obtained, indicating that individuals who desired more changes did, indeed, have lower QOL composite scores than those desiring fewer changes.

It seemed possible that individuals who wanted particular life changes might differ in their global QOL composite scores from individuals who did not want those changes. To determine if this was so, biserial correlations were computed between the dummy-coded desired life change categories (respondents who wanted a particular change were assigned a "1," those who did not were assigned a "0") and the composite QOL scores. Only the changes mentioned by 10 or more of the respondents were analyzed ("make more money" through "improve relationship with children" in Table 19). Because a fairly large number of ANOVAs (10) were performed for these variables, the .01 alpha level was used to minimize capitalizing on chance.

Three of the desired life change categories related significantly to global QOL composite scores. Respondents who wanted to make more money ($r = -.31, p < .01$), improve relationship with spouse or partner ($r = -.32, p < .01$), or improve relationship with children ($r = -.26, p < .01$) had lower composite QOL scores than respondents who did not mention these changes. When partial biserial correlations were computed between these same variables but with the total *number* of changes wanted by each respondent controlled, none of the correlations remained significant at the .01 level, although two remained significant at the .05 level (improve relationship with spouse or partner, partial $r = -.21, p < .05$, and improve relationship with children, partial $r = -.18, p < .05$). Problems with one's spouse, partner, or children may have a particularly negative effect on one's QOL.

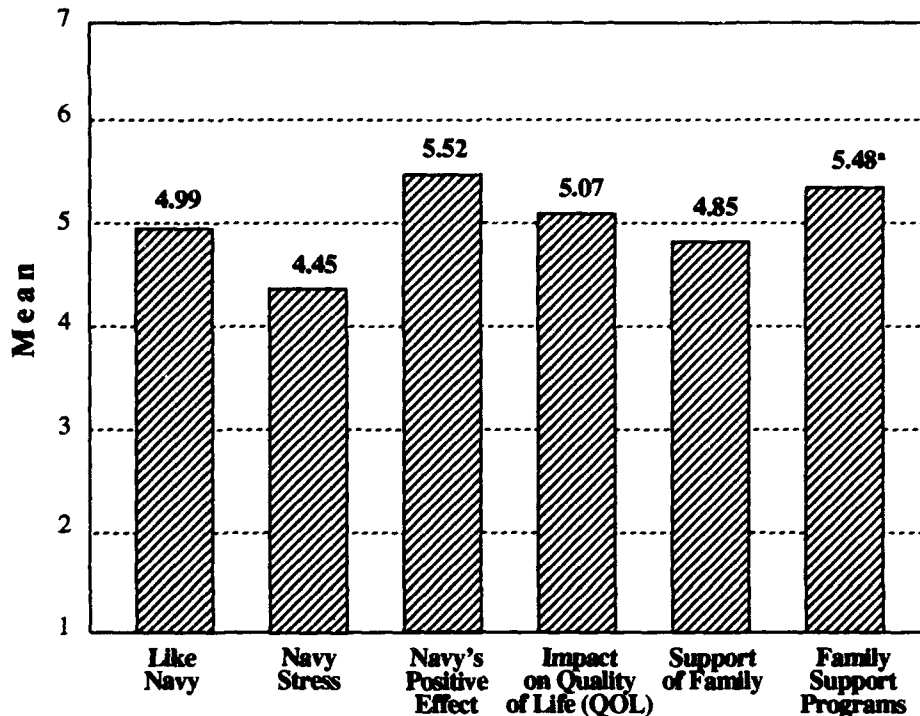
Navy Variables

Seven variables assessed respondents' attitudes toward and level of satisfaction with the Navy. Mean responses for the six Navy variables that used 7-point response scales are shown in Figure 1. (The other Navy variable, Intention to Reenlist, was answered *Yes*, *Unsure*, or *No*.) For all but one of the Navy variables shown in Figure 1, a higher number indicates a more positive attitude toward the Navy. For How Stressful the Navy is (abbreviated as Navy Stress in the figure), a higher number was more negative: The scale endpoints were 1 = not at all stressful and 7 = extremely stressful.

The results in Figure 1 show that respondents generally held positive attitudes towards the Navy. Most respondents liked being in the Navy, felt that the Navy has affected them positively as people, felt that the Navy has affected their QOL positively, and perceived the Navy as supportive of Navy families. Also, the portion of the sample (44%) who had used family support programs were generally satisfied with these programs. Despite these positive views of the Navy, respondents found being in the Navy somewhat stressful: the mean rating was 4.45, a value that is near the midpoint but toward the stressful end of the scale.

Responses to the other Navy variable, Intention to Reenlist, revealed that 54% of respondents planned to reenlist, 19% were unsure; only 27% did *not* plan to reenlist.

In the next set of analyses, responses to the Navy-related variables were correlated with global QOL composite scores. Six of the seven Navy variables correlated significantly with global QOL composite scores, all in the expected direction. The variables with the largest associations with global QOL composite scores were Degree to which the Navy has Affected Your QOL Positively ($r = .46, p < .01$), Degree to Which the Navy has Affected You Positively as a Person ($r = .36, p < .01$), and How Much You Like Being in the Navy ($r = .35, p < .01$). The other Navy variables significantly associated with composite QOL scores were How Stressful the Navy is ($r = -.25, p < .01$), Intention to Reenlist ($r = .24, p < .01$), and How Supportive the Navy is of Navy Families ($r = .24, p < .01$).



Note. Like Navy = How much you like being in the Navy, Navy Stress = How stressful the Navy is, Navy's Positive Effect = Degree to which Navy has affected you positively as a person, Impact on Quality of Life (QOL) = Degree to which Navy has affected your QOL positively, Support of Family = How supportive Navy is of Navy families, Family Support Programs = How satisfied you are with Family Support Programs.

*Based only on respondents who had used Family Support Programs, $n = 58$.

Figure 1. Mean ratings for Navy variables.

Satisfaction With the Navy's Family Support Programs had no association with QOL scores ($r = .03, p > .05$). In summary, individuals who felt that they had benefited from being in the Navy, who enjoyed being in the Navy, who did not find the Navy stressful, who perceived the Navy as supportive of families, and who planned to reenlist had higher composite QOL scores than individuals with less favorable attitudes towards the Navy.

To find the *combination* of Navy variables that explained the largest amount of variance in the composite QOL scores, a stepwise multiple regression analysis was performed using all Navy variables as predictors except for How Satisfied You Are With Family Support Programs. (The latter variable was omitted because responses were only available for 58 respondents.) As shown in Table 20, three Navy-related variables made unique contributions to the prediction of composite QOL scores: (1) Degree to Which Navy has Affected Your QOL Positively, (2) How Stressful the Navy is, and (3) Degree to Which Navy has Affected You Positively as a Person. Using these three variables to predict global QOL composite scores resulted in a multiple R of .52 ($R^2 = .27$). Adjusting for shrinkage (since cross-validation was not possible given the small sample) resulted in an R^2 of .24. These results indicate that 24% of the variance in global QOL composite scores was explained by the Navy-related variables alone.

Table 20

Multiple Regression of Navy Variables as Predictors of QOL Composite

Variable	Step	Beta ^a	R
Degree to Which Navy has Affected Your QOL Positively	1	.45**	.45
How Stressful the Navy is	2	-.20**	.50
Degree to Which Navy has Affected You Positively as a Person	3	.18*	.52

^aBeta weight at point of entry into the regression equation.

* $p < .05$.

** $p < .01$.

Job Variables

In the interview, respondents were asked to rate both their jobs overall and 10 specific job components using the 7-point D-T scale. As Figure 2 shows, respondents generally felt neutral to positive about their jobs. Most of the means were around 5, which indicates that respondents were *mostly satisfied* (the anchor for a rating of 5 on the D-T scale). The dimensions on which respondents' satisfaction was highest were The Work Itself, Immediate Supervisor, Working Conditions, and Co-workers. The dimensions on which satisfaction was lowest (but still above the midpoint) were Chances for Advancement, Recognition Received for Work, and Workload. Respondents' mean rating of the Job Overall was 5.06, indicating that they tended to be mostly satisfied with their jobs.

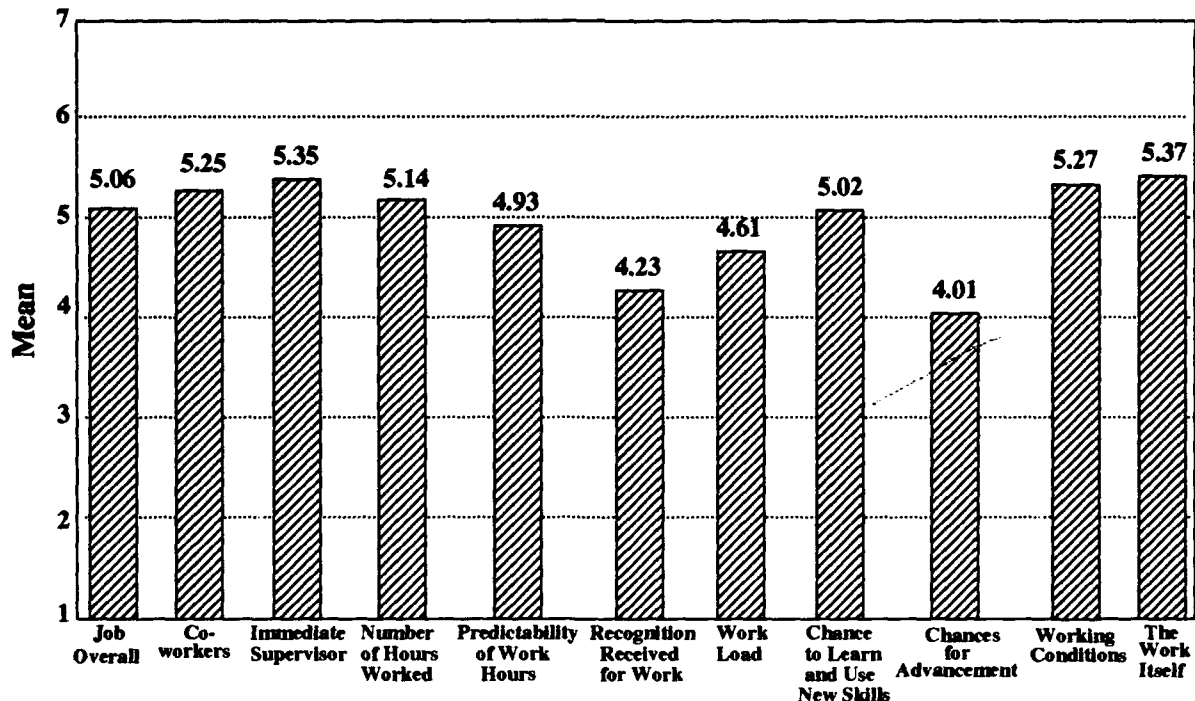


Figure 2. Mean ratings for job variables.

Correlations between the 11 job-related variables and global QOL composite scores were computed and are shown in Table 21. Respondents' overall ratings of their jobs and their rating of 7 of the 10 job components correlated significantly with QOL composite scores. The job components with the largest associations with composite QOL scores were Chance to Learn and Use New Skills, The Work Itself, and Recognition Received for Work. Other job variables found to correlate significantly with QOL scores were respondents' ratings of their Immediate Supervisor, Working Conditions, Workload, and Number of Hours Worked.

Table 21
Correlations of Job Variables With QOL Composite

Variable	Correlations With QOL Composite
Job Overall	.44**
Co-workers	.13
Immediate Supervisor	.32**
Number of Hours Worked	.18*
Predictability of Work Hours	.17
Recognition Received for Work	.35**
Workload	.21*
Chance to Learn and Use New Skills	.40**
Chances for Advancement	.16
Working Conditions	.31**
The Work Itself	.36**

* $p < .05$.

** $p < .01$.

To find the *combination* of job-related variables that accounted for the most variance in the composite QOL scores, a stepwise multiple regression analysis was performed using all of the job-related variables as predictors. As shown in Table 22, three of the job variables—the Job Overall, Chance to Learn and Use New Skills, and Immediate Supervisor—made unique contributions to the prediction of QOL. Together, these three variables resulted in a multiple R of .51 ($R^2 = .26$) and a shrunken R^2 of .19. Thus, 19% of the variance in global QOL composite scores was accounted for using the job-related variables.

Table 22
Multiple Regression of Job Variables as Predictors of QOL Composite

Variable	Step	Beta ^a	R
Job Overall	1	.44**	.44
Chance to Learn and Use New Skills	2	.24**	.48
Immediate Supervisor	3	.17*	.51

^aBeta weight at point of entry into the regression equation.

* $p < .05$.

** $p < .01$.

What Variables Predict QOL?

Although it is important to understand the interrelationships of global and specific QOL variables, a question of key interest is: What variables "predict" QOL?³ Do variables such as age, sex, education, marital status, or income explain a substantial amount of the variance in subjective QOL? What contribution do personality variables make to subjective QOL? This section examines the associations of demographic and personality variables with composite QOL scores.

Relation of Demographic Variables to QOL Scores

For the *continuous* demographic variables (e.g., age), correlations with the composite QOL scores were computed. For the remaining demographic variables (sex, race/ethnicity, marital status, duty location, community, and parent vs. nonparent), one-way ANOVAs were performed with composite QOL scores as the dependent variables.

Only one demographic variable—family income—was significantly associated with global QOL composite scores ($r = .20, p < .05$). Individuals with higher family incomes tended to have greater overall QOL. Surprisingly, per capita income (family income divided by the number of family members supported) was *not* significantly associated with composite QOL scores ($r = .12, p > .05$). None of the other demographics (age, education, paygrade, tenure in the Navy, parent vs. nonparent, number of children, sex, race/ethnic group, marital status, duty location, community, and job type) was associated with QOL scores.

Relation of Demographic Variables to Domain Ratings

Although they did not differ on global QOL composite scores, it seemed possible that certain demographic subgroups of interest (e.g., males and females, parents and nonparents) might, nevertheless, differ on some domain ratings. To test this hypothesis, multivariate analyses of variance (MANOVAs) were performed. Using the domain ratings as the dependent variables (with Relations With Your Children excluded because using it would have drastically reduced the sample size for analysis), 10 MANOVAs were conducted assessing the effects of sex, age, education, family income, paygrade, parent vs. nonparent, job type (aviation vs. clerical/administrative), marital status (never married vs. married vs. separated/divorced), race (White vs. Black vs. Hispanic), and duty location. As in previous analyses, the .01 level of probability was used. For the variables of age, education, family income, and paygrade, a median split was used to divide the sample into approximately equal halves.

The MANOVAs revealed significant effects for income, ($F[12, 112] = 2.57, p < .01$), and paygrade, ($F[12, 112] = 2.98, p < .01$). No significant effects were found for sex, age, education, parental status, job type, marital status, race, or duty location ($ps > .05$).

Univariate ANOVAs comparing respondents with high and low family incomes revealed that respondents with higher incomes were more satisfied with Marriage/Romantic Relationship, ($F[1, 131] = 14.93, p < .01$), but less satisfied with Friends/Friendships, ($F[1, 131] = 5.82, p < .05$), compared to their lower income counterparts. Interestingly, respondents with high family incomes

³We use the term "predict" in the statistical sense only, given the cross-sectional research design.

were not significantly more satisfied with their Income/Standard of Living than their low income counterparts, ($F[1, 131] = 1.73, p > .05$). Univariate ANOVAs showed that respondents in higher paygrades were more satisfied with Job, ($F[1, 131] = 6.09, p < .05$), Neighborhood, ($F[1, 131] = 10.59, p < .01$), and House or Apartment ($F[1, 131] = 6.95, p < .01$), than those in lower paygrades. These findings are not surprising; higher paygrade respondents probably had better jobs and probably lived in objectively better residences and neighborhoods. Paygrade also had a significant effect on satisfaction with Health, ($F[1, 131] = 6.60, p < .05$), but in the *opposite* direction: Lower paygrade respondents were more satisfied with their health than were their higher paygrade counterparts. This effect was not due to younger respondents being healthier than their older counterparts—age did not have a significant effect on satisfaction with Health ($p > .05$).

Relation of Personality Variables to QOL

Correlation coefficients were computed to determine whether personality characteristics accounted for any of the variance in global QOL composite scores. Interestingly, all six personality measures were significantly correlated with the composite QOL scores. The correlations of the composite QOL scores with the personality variables were $-.37$ for Neuroticism ($p < .01$), $.18$ for Extraversion ($p < .05$), $.34$ for Agreeableness ($p < .01$), $.23$ for Conscientiousness ($p < .01$), $.27$ for Optimism ($p < .01$) and $.28$ for Self-Esteem ($p < .01$). Thus, individuals who were low on Neuroticism, and those who were high on Extraversion, Agreeableness, Conscientiousness, Optimism, or Self-Esteem tended to have higher QOL scores.

To identify the *combination* of personality dimensions that uniquely accounted for the most variance in the composite QOL scores, a stepwise multiple regression analysis was performed using the six personality variables as predictors. As shown in Table 23, only two personality variables made a unique contribution to the prediction of QOL scores: (1) Neuroticism and (2) Agreeableness. The R was $.43$ ($R^2 = .19$). Adjusting for shrinkage resulted in an R^2 of $.15$. Thus, personality captured a modest 15% of the variance in composite QOL scores.

Table 23
Multiple Regression of Personality Variables
as Predictors of QOL Composite

Variable	Step	Beta ^a	R
Neuroticism	1	$-.37^{**}$	.37
Agreeableness	2	$.24^{**}$	.43

^aBeta weight at point of entry into the regression equation.

^{**} $p < .01$.

To learn more about the effects of personality on QOL assessments for specific life domains, correlations were computed between the six personality variables and the domain ratings. These correlations are shown in Table 24. Both Neuroticism and Conscientiousness correlated significantly with 8 of the 13 domain ratings; Extraversion, Agreeableness, and Self-Esteem each correlated significantly with 5 of the 13 domain ratings; and Optimism correlated significantly with only four of the domain ratings.

Table 24

Correlations of Personality Variables With Domain Ratings

Domain	Neuroticism	Extraversion	Agreeableness	Conscientious		Self-Esteem
				-ness	Optimism	
Marriage/Romantic Relationship	-.30**	.11	.13	.18*	.09	.22*
Relations With Your Children ^a	-.17	.02	.08	.10	-.01	.05
Relations With Other Relatives	-.18*	.18*	.15	.17*	.16	.28**
Friends/Friendships	-.09	.22*	.23**	.20*	.16	.08
Self (e.g., Personal Development, etc.)	-.31**	.22*	.06	.34**	.25**	.31**
Health	-.23**	.22*	.11	.22*	.27**	.26**
Leisure/Nonwork Activities	-.11	.12	.06	.11	.12	.14
Job	-.14	.11	.24**	.19*	.16	.05
Income/Standard of Living	-.29**	.15	.21*	.32**	.16	.18*
Neighborhood	-.33**	.00	.10	.18*	.08	.11
House or Apartment	-.30**	-.07	.12	.13	.09	.11
The Navy/the Way the Navy has Treated You	-.17	.21*	.34**	.13	.24**	.03
Community	-.26**	.07	.29**	.17	.23**	.06

^aBased on parents only, $n = 74$.

* $p < .05$.

** $p < .01$.

Table 24 also shows that some of the domain ratings were related to most of the personality variables, but others were related to none of the personality variables. The domains having the most associations with personality were Relations With Other Relatives, Self, Health, and Income/Standard of Living. Each of these domains was significantly associated with at least four of the six personality variables. The domains that had no significant associations with the personality variables were Relations With Your Children and Leisure/Nonwork Activities.

To get an overall picture of the *combination* of variables that account for the most variance in the composite QOL scores, a stepwise multiple regression analysis was performed using all of the demographic, Navy, job, and personality variables and domain ratings found to be significant in previous multiple regression analyses. The variables considered as potential predictors in the multiple regression were family income, Degree to Which the Navy has Affected Your QOL Positively, How Stressful the Navy Is, Degree to Which the Navy has Affected You Positively as a Person, the Job Overall, Chance to Learn and Use New Skills, Immediate Supervisor, Neuroticism, Agreeableness, and the domain ratings for Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and the Navy. As shown in Table 25, six variables emerged as significant predictors of QOL scores. These were: Income/Standard of Living, Marriage/Romantic Relationship, the Job Overall, Degree to Which the Navy has Affected Your QOL Positively, Leisure/Nonwork Activities, and Agreeableness. This set of variables produced a multiple R of .79 ($R^2 = .62$) and a shrunken R^2 of .52, accounting for 52% of the variance in composite QOL scores.

Table 25**Multiple Regression of Demographic, Navy, Job, Personality Variables,
and Domain Variables as Predictors of QOL Composite**

Variable	Step	Beta ^a	R
Income/Standard of Living	1	.61**	.61
Marriage/Romantic Relationship	2	.41**	.72
Job Overall	3	.23**	.75
Degree to Which Navy has Affected Your QOL Positively	4	.20**	.77
Leisure/Nonwork Activities	5	.14*	.78
Agreeableness	6	.14*	.79

* $p < .05$.** $p < .01$.**Discussion****QOL of Navy Personnel**

Consistent with past research using civilian samples (e.g., Andrews & Withey, 1976; Bradburn, 1969; Campbell, 1981), global subjective QOL for this Navy sample was high. Respondents were generally happy and satisfied with their lives as a whole, although the majority indicated that they would like to change some parts of their lives. All of the individual life domains were rated positively (i.e., towards the satisfied end of the scale).

The life domains to which respondents gave the highest satisfaction ratings were Relations With Your Children, Marriage/Romantic Relationship, Health, and Self. Similarly, the life domains that respondents were most likely to select when asked to pick the most positive areas of their lives were Marriage/Romantic Relationships, Relations With Your Children, Friends/Friendships, and Self. Other QOL studies (Andrews & Withey, 1976; Campbell et al., 1976; Campbell, 1981) have also found these domains to be the ones with which individuals are most satisfied.

The life domains with the lowest satisfaction ratings were Community, Income/Standard of Living, the Navy, and Neighborhood. When respondents selected the most negative areas of their lives, a similar list emerged: Income/Standard of Living, the Navy, Community, and Job were regarded as the most negative aspects of respondents' lives. These findings are consistent with results obtained by Campbell and colleagues (Campbell, 1981; Campbell et al., 1976). They found standard of living, work, housing, community, and self to be the domains with which individuals were the least satisfied. Andrews and Withey (1976) found that self, housing, health, and leisure were the domains with which respondents were least satisfied. One interesting difference between these previous studies (Andrews and Withey, 1976; Campbell, 1981; Campbell et al., 1976) and our research is that they found self to be one of the domains respondents were least satisfied with, but we found it to be one of the domains with which respondents were the most satisfied.

The domains that contributed the most to subjective global QOL were Income/Standard of Living, Marriage/Romantic Relationship, Job, and Self. These results closely parallel past research findings (e.g., Andrews & Withey, 1976; Campbell, 1981; Campbell et al., 1976). None of the

domains was completely unrelated to overall QOL; however, the ones making the smallest contributions to QOL were Friends/Friendships, House or Apartment, and Community. These results differ somewhat from past research (Andrews & Withey, 1976; Campbell, 1981; Campbell et al., 1976), which found friends and housing to be moderately important in affecting overall QOL. The fact that we did not find them to be important may be because the present sample was made up of Navy service members, whereas the respondents in the prior studies were mostly civilians. Because Navy personnel have to relocate frequently, housing may have a smaller impact on their subjective QOL. For the same reason, friends and friendships may also have a smaller impact on the subjective QOL of Navy service members.

The combination of life domain satisfactions that best predicted overall QOL were Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and Self. A unit-weighted combination of these five domains explained a fairly large proportion (56%) of the variance in subjective QOL. Surprisingly, when all 13 domains were used together (with unit-weighting), the amount of variance accounted for in subjective QOL was somewhat less (48%).

When respondents were asked to rate how important each life domain was to them, the domains that emerged as the most important were Relations With Your Children, Health, Self, and Income/Standard of Living. The empirical associations with global QOL and the importance ratings for the domains generally fell in about the same rank order, with two major exceptions. Although Health and Relations With Your Children were both regarded by respondents as very important, they were not among the domains having the strongest associations with QOL. Discrepancies such as these have been found in previous studies (e.g., Andrews & Withey, 1976; Campbell et al., 1976). Like our research, however, these studies also found a rough correspondence between the rank order of the importance ratings and the associations of the domain satisfaction ratings with global QOL. People seem to have a general idea of the impact that specific life domains have on their overall QOL, but are not as accurate in this regard as one might expect.

Respondents' feelings towards the Navy were mixed. On the one hand, most respondents held positive attitudes towards the Navy, liked being in the Navy, viewed the Navy as supportive of Navy families, and planned to reenlist. However, respondents' satisfaction ratings for the Navy as a life domain were low relative to the other life domains. For example, the Navy was one of the domains chosen most frequently as a negative life domain, and respondents rated being in the Navy as moderately stressful. Thus, respondents reported a mixture of positive and negative feelings towards the Navy.

Consistent with past research (Andrews & Withey, 1976; Campbell, 1981; Campbell et al., 1976), most of the demographic variables in the present sample were unrelated to subjective QOL. Although a significant association was found between income and QOL, none of the other demographic variables (e.g., race, sex, age, education or paygrade) was associated with global QOL.

All six of the personality variables studied were significantly associated with QOL. The personality variables with the strongest associations were Neuroticism and Agreeableness; each also accounted for unique variance in QOL. Individuals low on Neuroticism and high on Agreeableness had higher QOL than other individuals. However, the personality variables used in combination explained only a modest amount of the variance (15%) in subjective QOL.

Although the linkage between Neuroticism and QOL has been found in numerous previous studies (e.g., Costa & McCrae, 1980; Diener, 1984; Emmons & Diener, 1985), the association of Agreeableness with QOL has only been reported in one other investigation (McCrae & Costa, 1991). It is not clear why individuals who are cooperative, trusting, compliant, and sympathetic (characteristics of individuals high in Agreeableness) would report higher subjective QOL than their less agreeable counterparts. It may be that agreeable individuals simply give more positive responses about their lives due to social desirability motives (i.e., the Agreeableness-QOL association may be an artifact). Another possibility is that because they are friendly, sympathetic, and nurturing towards others, agreeable people have better interpersonal relationships and more social support, and consequently enjoy higher subjective QOL than their less agreeable counterparts. Research is needed to learn more about the association between Agreeableness and QOL and to determine if there are other personality variables that are related to QOL.

When all potential predictors of subjective QOL were considered together in the present research project, the ones that had significant unique associations with QOL were Income/Standard of Living, Marriage/Romantic Relationship, ratings of the Job Overall, Degree to Which the Navy has Affected Respondents' QOL Positively, Leisure/Nonwork Activities, and the personality dimension Agreeableness. Again, these findings underscored the importance of standard of living, marriage, romantic relationships, job, the Navy, leisure, and personality as influences on QOL. The results of all the various analyses conducted in this research converged to indicate that just a few domains of life—most notably, standard of living, marriage, romantic relationships and job—are the chief determinants of subjective QOL.

Measurement Issues

An evaluation of the eight global QOL measures used in this research project identified three measures that were superior in terms of response dispersion and shared variance with the other global QOL measures. These were Andrews and Withey's (1976) D-T Rating of Life as a Whole, the present authors' Life 5 ("How would you rate the quality of your life overall right now?"), and Diener et al.'s (1985) SWL Scale. It is recommended that future QOL researchers use the SWL Scale and one or both of the other two global measures or that they develop more finely tuned instruments for assessing QOL.

This investigation found that it was more effective to use only five life domains (Income/Standard of Living, Marriage/Romantic Relationship, Job, Leisure/Nonwork Activities, and Self) to predict subjective QOL than to use all of the domain ratings. These five life domains apparently have a *key* influence on global QOL; adding information on the other domains only introduced additional error into the prediction of global QOL. Should future research on global QOL among Navy personnel focus only on these five key life domains? Because our sample was fairly small and because these five domains were identified using multiple regression without cross-validation, we believe that future research should assess all of the life domains, with special attention paid to the domains which this research found to be important.

Using importance ratings to weight the satisfaction ratings did *not* improve the ability to predict global QOL. In fact, use of the importance ratings reduced the amount of variance accounted for in global QOL. Although this finding is counterintuitive, it was also reported by Campbell et al. (1976). It should be noted that in the present sample, positive correlations were found between the

satisfaction and importance ratings for the individual domains. While this could mean that the domains that brought the most satisfaction to respondents came to be regarded by them as most important, it is also possible that these correlations indicate respondents' inability to separate the importance of a given life domain from their satisfaction with it. In either case, it appears that obtaining domain importance ratings from respondents is of limited value in QOL assessment, a conclusion that was also reached by Campbell et al. (1976).

In summary, although one might expect global QOL to be a complex, multiply-determined phenomenon, prediction of subjective QOL in the present investigation was best achieved using a simple sum of satisfaction ratings for only a handful of life domains. It is surprising that such a simple model would be appropriate for capturing subjective QOL; however, the same findings have been obtained by other researchers (e.g., Andrews & Withey, 1976; Campbell et al., 1976).

Limitations of the Research

Several limitations of this research should be acknowledged. First, the sample size ($N = 132$) was small and not representative of the Navy population or of the Navy enlisted population. In addition, respondents were drawn from only two geographical locations (San Diego, California and Norfolk, Virginia) and from only a few job (rating) types. Another limitation of this research was the cross-sectional research design. Although we referred to "prediction" of global QOL, we did not actually *predict* QOL—all of the measures were obtained at the same point in time. Ideally, research aimed at identifying predictors of QOL should be conducted longitudinally, over a period of several years or more, so that the true predictive associations of variables with QOL can be assessed. Despite these limitations, we believe that this investigation makes a contribution to the QOL literature and provides insight and direction for future research on QOL.

Conclusions

1. QOL findings for this sample of Navy personnel were consistent with results obtained in civilian samples.
2. Income/Standard of Living and Marriage/Romantic Relationship played the largest role in determining respondents' QOL.
3. Demographic variables did not play an important role in subjective QOL.
4. This research project provided further evidence that personality variables play a role in subjective QOL.
5. Obtaining domain importance ratings from respondents is of limited value in global QOL assessment.
6. Although one might expect global QOL to be a complex, multiply-determined phenomenon, prediction of subjective QOL was best achieved by simply summing the satisfaction ratings for a small number of life domains.

Recommendations

1. The Navy should focus QOL efforts and programs on the domains that respondents were most dissatisfied with: Community, Income/Standard of Living, Neighborhood, and the Navy.
2. The Navy should also focus QOL efforts and programs on the domains found to contribute the most to service members' subjective QOL: Income/Standard of Living, Marriage/Romantic Relationship, Job, and Self.
3. Because this research project found personality to be associated with subjective QOL, future research should be conducted to learn more about the effects of personality on QOL.
4. Given evidence of their limited value in QOL assessment, it is recommended that future researchers not obtain domain importance ratings from respondents.

References

- Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being: Their affective, cognitive, and other components*. New York: Plenum Press.
- Beiser, M. (1974). Components and correlates of mental well-being. *Journal of Health and Social Behavior*, 15, 320-327.
- Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine.
- Campbell, A. (1981). *The sense of well-being in America: Recent patterns and trends*. New York: McGraw-Hill.
- Campbell, A., Converse, P. E., & Rodgers, W. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. New York: Russell Sage Foundation.
- Cantril, H. (1965). *The pattern of human concerns*. New Brunswick, NJ: Rutgers University Press.
- Carver, C. S., & Gaines, J. G. (1987). Optimism, pessimism, and postpartum depression. *Cognitive Therapy and Research*, 11, 449-462.
- Costa, P. T., Jr., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology*, 38, 668-678.
- Costa, P. T., Jr., & McCrae, R. R. (1985). *The NEO Personality Inventory manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P. T., Jr., & McCrae, R. R. (1989). *The NEO-PI/NEO-FFI manual supplement*. Odessa, FL: Psychological Assessment Resources.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Edwards, J., & Klemmack, D. (1973). Correlates of life satisfaction: A reexamination. *Journal of Gerontology*, 28, 497-502.
- Emmons, R. A., & Diener, E. (1985). Personality correlates of subjective well-being. *Personality and Social Psychology Bulletin*, 11, 89-97.
- Fordyce, M. W. (1988). A review of research on the happiness measures: A sixty second index of happiness and mental health. *Social Indicators Research*, 20, 355-381.
- George, L. K., & Bearon, L. B. (1980). *Quality of life in older persons: Meaning and measurement*. New York: Human Sciences Press.

- Gurin, G., Veroff, S., & Feld, S. (1960). *Americans view their mental health*. New York: Basic Books.
- Headey, B., & Wearing, A. (1989). Personality, life events, and subjective well-being: Towards a dynamic equilibrium model. *Journal of Personality and Social Psychology*, 57, 731-739.
- Holahan, C. K. (1988). Relation of life goals at age 70 to activity participation and health and psychological well-being among Terman's gifted men and women. *Psychology and Aging*, 3, 286-291.
- Kammann, R. (1983). Objective circumstances, life satisfaction and sense of well-being: Consistencies across time and place. *New Zealand Psychologist*, 12, 14-22.
- Larson, R. (1978). Thirty years of research on the subjective well-being of older Americans. *Journal of Gerontology*, 33, 109-125.
- Marshall, G. N., Wortman, C. B., Vickers, R. R., Jr., Kusulas, J. W., & Hervig, L. K. (1991). *Using the five-factor model of personality as a framework for guiding personality-health research* (NHRC Report 91-36). San Diego: Naval Health Research Center.
- McCrae, R. R., & Costa, P. T., Jr. (1991). Adding Liebe und Arbeit: The full five-factor model and well-being. *Personality and Social Psychology Bulletin*, 17, 227-232.
- Palmore, E., & Luikart, C. (1972). Health and social factors related to life satisfaction. *Journal of Health and Social Behavior*, 13, 68-80.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4, 219-247.
- Scheier, M. F., & Carver, C. S. (1987). Dispositional optimism and physical well-being: The influence of generalized outcome expectancies on health. *Journal of Personality*, 55, 169-210.
- Scheier, M. F., Matthews, K. A., Owens, J. F., Magovern, G. J., Sr., Lefebvre, R. C., Abbott, R. A., & Carver, C. S. (1989). Dispositional optimism and recovery from coronary artery bypass surgery: The beneficial effects on physical and psychological well-being. *Journal of Personality and Social Psychology*, 57, 1024-1040.
- Schuessler, K. F., & Fisher, G. A. (1985). Quality of life research and sociology. *Annual Review of Sociology*, 11, 129-149.
- Stumpf, S. S., & Kieckhafer, W. F. (1975). *Department of Defense family housing preference survey: Attitudes and preferences of military personnel and spouses concerning housing and basic allowance for quarters* (NPRDC-TR-76-20). San Diego: Navy Personnel Research and Development Center.

- Veroff, J., Feld, S., & Gurin, G. (1962). Dimensions of subjective adjustment. *Journal of Abnormal and Social Psychology*, 64, 192-205.
- Wessman, A. E., & Ricks, D. F. (1966). *Mood and personality*. New York: Holt, Rinehart & Winston.
- Wilcove, G. L., & Kerce, E. W. (1991). *Survey results from the Department of the Navy Family Support Conference* (NPRDC-AP-91-17). San Diego: Navy Personnel Research and Development Center.
- Wilson, W. (1967). Correlates of avowed happiness. *Psychological Bulletin*, 67, 294-306.
- Woodruff, S. I., & Conway, T. L. (1990). Perceived quality of life and health-related correlates among men aboard Navy ships. *Military Psychology*, 2, 79-94.

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