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**Quality of Life: Literature Review and Recommendations for
Measurement of Military Outcomes**

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13. ABSTRACT (Maximum 200 words) Given that an estimated \$2 billion is spent annually by the Navy on Quality of Life (QOL) programs, meeting service members' QOL need is of primary concern to the Navy. The purpose of this report is to review the literature in regards to the relationship of QOL and its impact on such military outcome variables as retention, attrition, performance, readiness, and recruitment. Conclusions from the review were that: (1) Intent to reenlist was found to be one of the most potent predictors of retention, with other factors such as pay, services, housing, and job satisfaction, also, exerting their influence; (2) certain demographics, such as gender, may impact the attrition decision with other variables such as initial fleet assignment, pay, and attraction to the military role also playing a contributing role; and (3) desire to travel and the level of education/training provided by the Navy have been shown to influence recruitment/enlistment. Recommendations included the need to further examine QOL domains and existing information about QOL domains and military outcomes should be used to construct a survey to examine their relationship					
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Foreword

This technical report is a review of the literature pertaining to Quality of Life (QOL) factors that may impact certain military outcome variables such as retention, attrition, recruitment, performance, and readiness. The information obtained from this review will be used in the development of a survey assessing QOL factors and their impact on military outcome variables, and ultimately to the development of a predictive model.

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Summary

Problem and Background

Given that an estimated \$2 billion is spent annually by the Navy on Quality of Life (QOL) programs, it is vital that these programs contribute to the Navy's mission, and the effectiveness and well-being of its members. Navy QOL programs may have a direct impact on individual service members (e.g., psychological well-being, family interactions) and may strongly influence job performance and career progress. The extent to which the QOL programs help the Navy maintain the best military force possible—as reflected in the key military outcomes of retention, attrition, performance, and readiness—will determine the wisdom of spending money on the various programs. Knowledge of which QOL programs positively affect military outcomes, therefore, would provide policy makers a basis upon which to target specific QOL programs for funding. The purpose of the present research was to determine whether previous research had linked QOL factors to military outcomes.

Objective

The objective of this report was to extensively review the QOL literature and its relationship to such military outcome variables as retention, attrition, performance, readiness, and recruitment.

This effort is part of an ongoing Navy QOL project (Navy Quality of Life Predictive Model) sponsored by the Chief of Naval Personnel (PERS-6), started in FY91. The information obtained from this review will be used in the development of a survey assessing QOL factors and their impact on military outcome variables. Ultimately, the information will contribute to the development of a model to predict military outcomes based on military members' QOL needs, their QOL satisfaction, and social and economic variables.

Approach

An extensive literature review was the primary approach used to assess QOL factors that influence military outcome variables. Some information was derived from the scientific literature, but the bulk of the information was obtained from military technical reports. Results of the literature are summarized at the end of each outcome variable review.

Conclusions

1. Intent to reenlist was found to be one of the most potent predictors of *retention*—defined as reenlistment after the expiration of active obligated service. Pay, services, housing, and job satisfaction are other QOL factors that may play a part in the retention decision. Also important are the spouses' feelings towards time at sea, housing, and so forth.

2. Even though more vague than the retention decision literature, research on *attrition*—discharge prior to expiration of active obligated service—indicates that initial fleet assignment, pay, and attraction to the military role are QOL factors that may influence attrition. Certain demographics, such as gender, may play a significant role in the attrition decision. Family problems also may be a crucial variable.

3. There is a paucity of literature tying QOL to performance. Only a slight relationship has been found in the satisfaction/performance literature, and, by analogy, the QOL/performance relationship is highly speculative. Supervisorial assessment of performance has been the primary mode of measurement.

4. Readiness has been an elusive construct to measure with the bulk of the literature addressing material/resource readiness. Personal readiness has received scant attention except for a cursory reference to paygrade and family responsibilities/military mission conflict as possible contributing factors to readiness.

5. The desire to travel and the level of education/training provided by the Navy have been identified as two QOL related factors that impact recruitment/enlistment.

Recommendations

1. There is a need to examine further QOL domains and their impact on service members and their Navy careers. The relationship between outcome variables (i.e., retention, attrition, performance, readiness, and recruitment) and QOL factors (e.g., pay) should be systematically investigated.

2. Existing information about QOL domains and military outcomes should be used to construct a survey to examine their relationships. Areas such as housing, pay, career/job satisfaction, and spouses' feelings and their impact on military outcomes should be considered.

3. Some measures relevant to QOL and military outcomes may be available from existing database applications (e.g., current performance rating). The feasibility of linking these measures to the subjective questionnaire responses should be assessed. The use of social security numbers on the survey for the purpose of tracking responses over time should also be considered.

4. Expressed intentions of future participation should be used as one measure of retention. A measure of performance will also be necessary given that there may be a mediating effect of performance on retention. Also of importance in the assessment of retention is the solicitation of the spouses' perceptions of the Navy.

5. Besides using such available measures as performance ratings, respondents should be asked to provide a subjective assessment/rating of their performance.

6. Personal readiness (as opposed to personnel readiness) and recruitment/enlistment should be assessed via self-report questionnaire.

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Introduction

Problem

The U.S. military in recent years has emphasized improving service members' Quality of Life (QOL) in efforts to attract, train, motivate, and retain the best individuals for an all-volunteer force. Each of the military components devotes significant resources to programs and facilities intended to enhance QOL for service members and their families; it is estimated that over \$2 billion annually is spent by the Navy on QOL programs. The relationship between Navy QOL and the enlistment, performance, and retention of individuals, however, has not been systematically examined. The significant investment of resources in QOL programs underscores the need to understand the impact of Navy QOL on these important military outcomes.

Background

The research summarized in this report is part of an ongoing Navy QOL project sponsored by the Bureau of Naval Personnel (PERS-6), started in FY91. The object of the Navy QOL Predictive Model project is to develop a model to predict military outcomes (e.g., readiness, performance, retention) based on military members' QOL needs and their satisfaction, individual characteristics of members, social and economic variables associated with individuals, and the locations at which they are stationed. The model will be designed for use by Navy planners for the purpose of developing and adapting QOL programs to meet the needs of military members and to maximize successful military outcomes.

Previous research contributing to the development of the predictive model is documented in three reports. The first report presents an examination of the concept and measurement of QOL (Kerce, 1992), a second provides a discussion of human needs and presents a cognitive life span model (Rosenfeld, Culbertson, & Magnusson, 1992), and a third proposes a theoretical framework for a QOL predictive model (Wicker, in preparation). A Navy-wide survey assessing QOL factors and their relationship to military outcomes for service members was planned for administration in FY93, with model development progressing with the input of data from that survey.

Objective

The objectives of this project are to: (1) extensively review the literature in regards to QOL factors that may impact retention, attrition, performance, readiness, and recruitment and (2) provide recommendations for the development of a tool that assesses the military members' perceived QOL and its attendant impact on these military outcomes.

Approach

The approach used to assess the influence of QOL factors on military outcome variables involved a review of literature on QOL, retention, attrition, performance, readiness, and recruitment. The primary focus of the literature review was to identify research that documented links between QOL factors and military outcomes, with a future report planned to discuss QOL factors and parallel outcomes in the civilian sector.

Two initial considerations were to determine what subject matters are related to the concept of QOL and what materials and measurement approaches were appropriate to the military outcomes. First, the various conceptualizations and definitions of QOL were examined to determine what literature would be relevant to the topic. Second, the primary indicators of the military outcomes under consideration were identified. Discussions of these considerations are presented below, followed by a review of the literature relevant to QOL and military outcomes.

The Concept of Quality of Life (QOL)

McCall (1975), and others (Szalai, 1980), point out that even though the phrase "quality of life" has been in use since 1964 a consensually agreed upon definition still proves to be elusive. The definition may include such constructs as subjective well-being which includes happiness, life satisfaction, and positive affect (Diener, 1984). Andrews and Withey (1976, p. 4) suggest that QOL "sometimes refers to an 'outsider's' judgments of quality covered in such measures as crowding, decibels of noise pollution, reported crimes, income levels (etc.), but it may also refer to the privately known and privately evaluated aspects of life." Schuessler and Fisher (1985) point out that QOL has been defined by others as a general sense of well-being, and that sometimes those terms have been used interchangeably. They also point out that even though "the dominant trend is to restrict the term to mean only mental life" (p. 131), some of the research has described how QOL is inherent in environmental conditions. Thus, the authors point out that there is a trend for the research to shift back and forth between the objective and subjective side of life. For the present research, Rice's (1984) conceptual definition of QOL is adopted to describe the area being considered:

... quality of life is the degree to which the experience of an individual's life satisfies his/her personal wants and needs (both physical and psychological). (p. 3)

Rice accounts for both an objective aspect of QOL, which encompasses "objectively verifiable conditions, activities, and activity consequences of an individual's life," and a subjective aspect, including "a set of affective beliefs directed toward one's life" (pp. 3-4).

Measurement of QOL reflects the complexity found in the conceptualization. In addition to the objective/subjective distinction, QOL has been analyzed: (1) globally (e.g., overall life satisfaction) and (2) in terms of domains, such as family life, neighborhood, and job (Kerce, 1992). Campbell, Converse, and Rodgers (1976) hold that even though global measures of QOL are of interest, it may be necessary to increase the utility of measuring this concept by extracting information about the various QOL domains, such as work life and family life.

Satisfaction with work has been found to be one of the strongest predictors of life satisfaction (Campbell et al., 1976). Those dissatisfied with their jobs were more likely to indicate that they are frightened by something in their lives, expressed lower levels of confidence that they could control their lives, and expressed lower levels of trust in others. The difficulty of defining the exact nature of the job satisfaction-life satisfaction relationship is illustrated by the array of theoretical frameworks that have been posited including: (1) the *spillover hypothesis*—work experiences generalize or extend to other domains of life; (2) the *compensation hypothesis*—extra-work activities compensate for experiences and rewards denied at work; and (3) the *segmentation hypothesis*—the work and nonwork domains of life are distinctly separate from one another without significant mutual influence (Brief & Hollenbeck, 1985). Kiuranov (1980, p. 176) suggests that "the quality of life is determined by the quality of work, which may serve as a basic and decisive indicator of life quality."

Rice, Frone, and McFarlin (1992) investigated work-nonwork conflict and QOL, and found a significant indirect path between work-nonwork conflict and global life satisfaction, which was mediated by job satisfaction and nonwork satisfaction. Interestingly, the direct path between work-nonwork conflict and global life satisfaction was not significant, thus, indicating the need to look at mediating/moderating variables in the work-quality of life relationship. Furthermore, Rice, McFarlin, Hunt, and Near (1985) proposed that: (1) organizational work may influence the perceived QOL as well as the objective QOL and that (2) the effect of work on QOL may be mediated by changes in the quality of nonwork life as well as by changes in the quality of work life. By extrapolating from the job satisfaction literature and using it as a proxy for life satisfaction (given the conjectured life-job satisfaction relationship), there is some indication that QOL factors may impact some of the outcome variables. Due to the limited literature linking QOL and military outcomes, research relevant both to a global concept of QOL and the various domains associated with QOL was examined.

Military Outcomes

Concern for the QOL of military members and their families reflects not only a desire to enhance the lives of those families in the Navy, but to also support the Navy's efforts to best carry out its mission. Specific military outcomes which reflect the extent to which the Navy is successful at this goal were selected for examination in the present study. An individual's decision to join the Navy, readiness to perform his/her job, level of performance, and decision to stay in or leave the Navy were all considered important indicators of Navy personnel management and, ultimately, of the Navy's ability to fulfill its mission. Military outcomes considered in the present literature review were *recruitment*, *attrition* (turnover of personnel in the first enlistment), *retention* (reenlistments), *readiness*, and *performance*.

Military Outcomes Literature

Turnover Literature

The area of employee turnover has been of much interest in the research literature with turnover being associated with *performance* (Martin, Price, & Mueller, 1981; McEvoy & Cascio, 1987; Jackofsky & Slocum, 1987; Mossholder, Bedeian, Norris, Giles, & Feild, 1988; Werbel & Bedeian, 1989), *absenteeism* (Keller, 1984), *situational constraints* (O'Connor, Peters, Pooyan, Weekley, Frank, & Erenkrantz, 1984), *job attitudes* (Waters & Roach, 1971; 1973) and *work attitude* as moderated by expectancy (Dansereau, Cashman, & Graen, 1974). However, what is particularly germane to the present QOL study is the satisfaction/turnover relationship.

Porter, Steers, Mowday, and Boulian (1974) found that attitudes held by employees are predictive of subsequent turnover behaviors, with individuals who ultimately leave the organization tending to have less favorable attitudes than individuals who stay. They found that the leavers are typified by lower levels of commitment and satisfaction. At a large manufacturing firm, an 18% reduction in turnover ensued, with an accompanying increase in satisfaction, subsequent to a modification in the company's pay and promotion policies (Hulin, 1968). Orpen (1986) found that job performance moderated the satisfaction-turnover relationship, with it being suggested that job satisfaction may have a greater impact on the decision to remain or leave among poor performers than among higher performers.

In a frequently cited review article, Porter and Steers (1973, p. 153) suggest "that expressed intentions concerning future participation may be an even better predictor" than job satisfaction. They also point out that with respect to organizational processes that may contribute to the turnover decision, pay/promotion, and perceived equity are integral factors. Family size and family responsibilities were also found to be positively related to turnover and absenteeism among women; the impact of these factors on men had mixed results. Porter and Steers (1973) concluded that, in general, the prevailing evidence supported the contention that overall job satisfaction represents an important force in the individual's participation decision.

Schneider and Dachler (1978) investigated work, family, and career considerations and their impact on turnover intentions. Using the Work, Family, Career Questionnaire, the results were such that work and career satisfaction were strongly related to turnover intentions. Satisfaction with organizational impact on career and family was also related to turnover intention even though the relationship was weaker, thus, work factors were more strongly related to turnover intentions than family factors.

Retention

Major Points

1. Factors that have been positively associated with retention includes: (a) stated intention to reenlist; (b) job satisfaction, career satisfaction, and satisfaction with promotion; (c) job appeal and challenge received high satisfaction ratings; (d) positive attitudes toward reenlistment by the spouse; and (e) organizational factors such as work facilitation and professional *esprit de corps*.
2. Economic factors that influence retention includes: (a) the civilian economy, (b) job opportunities, and (c) rates of unemployment. Pay and bonus benefits are also influential factors. Reenlistment, also, increases as the number of dependents increase.
3. For women, educational goals and benefits were positively associated with reenlistment.
4. For family factors, conflict with family and leisure time were cited as reasons for not reenlisting. Retirement and dependent medical benefits were positively rated by the spouses while permanent change of station (PCS) moves, extended duty hours, and separation from family were viewed as disruptive to the family.
5. Availability of quality Navy housing was viewed as influential in the reenlistment decision. Those in civilian housing were most satisfied.
6. The first assignment as well as training have been associated with the reenlistment decision.

Related to the notion of turnover is retention, especially as it pertains to the military. What is apparent in the literature, is that the terms retention/attrition/reenlistment are sometimes used interchangeably, thus, adding confusion to the definition. Landau and Farkas (1978) define *attrition* as that "which has to do with recruits being discharged prior to expiration of active obligated service" and *retention* as that "which has to do with recruits reenlisting after their expiration of active obligated service" (p. 1). Attrition has also been referred to as "... the unscheduled loss of first term enlisted personnel" (Sinaiko, Chatelier, Cook, Hosek, & Sicilia, 1981). Those definitions

will generally be adhered to—unless specified otherwise. Of particular interest in this review are the QOL factors that may influence the retention decision. Marcus (1984) points out that little is known about QOL and its impact on retention. One area researched is the effect of sea duty on retention, with it being noted that a 10% increase in expected time at sea was found to lead to a 3% decrease in the predicted retention rate. Other QOL areas, Marcus notes as having an impact on retention are pay and quality of Navy-provided housing. The state of the economy was also identified as a crucial determinant in the retention process. It is pointed out (Marcus, 1984, p. 2) that “reenlistment rates are sensitive to the unemployment rate, increasing when the unemployment rate increases.”

In identifying determinants of retention decisions, LaRocco, Pugh, and Gunderson (1977) found job satisfaction to be a crucial discriminating factor, with satisfaction highest for those who reenlisted and lowest for those who were not recommended for reenlistment or who were prematurely separated from the service. The authors point out that performance has received relatively scant attention in the study of retention, even though their review of a prior study indicated that military performance during the first couple of years of the individual's enlistment contributed to the prediction of reenlistment.

LaRocco, Pugh, Jones, and Gunderson (1977) found organizational factors such as: (1) *work facilitation* (leadership behavior which helps achieve goal attainment), (2) *organizational conflict* (conflicting goals between systems), and (3) *professional esprit de corps* (image of profession to outsiders/opportunity for growth) to be significantly related to intent to reenlist. It is interesting to note that quite a few of the studies point to intention to reenlist as one of the most potent predictors of retention (Grace, Holter, & Soderquist, 1976; Youngblood, Mobley, & Meglino, 1983).

Fletcher and Giesler (1981) found that attitudes towards military characteristics were associated more with reenlistment intent than reenlistment decision. In a review of the research, they also point out that job appeal and challenge received the highest satisfaction ratings by Naval personnel, but, interestingly, attitudes toward such factors as compensation, deployment, and housing were found to be better predictors of reenlistment probability.

Grace et al. (1976) engaged in an extensive study of reenlistment of Navy enlisted personnel and found that career satisfaction influenced retention, turnover, and absenteeism. It was suggested that career satisfaction “is of key importance for organizations which require personnel and their families to adopt a new life style, such as the Navy way of life, because career satisfaction takes the whole person into account” (pp. 7-4). The authors came to their conclusions based on the following research findings:

- Personnel who were likely to reenlist found their current job interesting and important to the Navy.
- The Navy tends to enlist a single person and reenlist a married one; the spouse's feelings towards the Navy were also an influential component in the reenlistment decision.
- The Career Counseling Program was strongly positive for first-term personnel in terms of retention, but had less impact on personnel in other terms of enlistment; the program was felt to be a benefit to personnel and their families for the personnel likely to reenlist.
- Personnel were more likely to reenlist if they felt they were treated fairly and respectfully.

- Personnel were more likely to reenlist if they were satisfied with their promotion opportunities, if they felt their Navy experience would enhance their competitiveness for civilian jobs, if they planned to continue their education while in the Navy, and if they were given the opportunity to choose their Navy location.
- Personnel who receive special pay or bonus incentives were more likely to reenlist.

Pay, Benefits, and Services

Fletcher and Giesler (1981) point out that the Navy has exerted efforts in enhancing the quality of Navy life via the provision of funding for such services/programs as family counseling, recreation, and shipboard habitability. They point out that military personnel management has tended to use pay and bonuses as a mode to increase retention but with mixed results. However, it has been posited that one's financial status (e.g., wages, potential compensation, benefits) is an important determinant of the quality of one's life (Andrews & Withey, 1976). In a review of the research, Schuessler and Fisher (1985) summarize that as adequacy of income increases, whether measured *objectively* (in relation to a modest standard of living) or *subjectively* (as the income perceived as required to live comfortably), QOL increases. Mullis (1992) constructed a comprehensive measure of economic well-being (i.e., permanent income, annuitized net worth, and household economic demands) and found that economic well-being was a significant predictor of psychological well-being.

Grace et al. (1976) hold that economics is a crucial facet with respect to its influence on retention with personnel receiving or motivated to receive special pay or bonus incentives being more likely to reenlist. In evaluating QOL factors that may add to the likelihood of reenlistment, Fletcher (1981, p. 116) concluded that the use of pay to increase reenlistments is "once more justified." However, in a review of the literature, Hand, Griffith, and Mobley (1977) summarize that pay does not seem to be a potent predictor of intention to reenlist. It is further pointed out that pay and fringe benefits *do not affect* intention to reenlist, but that they *do affect* intention not to reenlist. Kostiuik (1985) found that pay had a significant impact on the retention of U.S. Marine Corps (USMC) aviators. Selective reenlistment bonuses have also been shown to have a desired effect on first-term reenlistment rates (Enns, 1977).

In rating the importance of military benefits and facilities, Stumpf (1978) found that the respondents and their spouses rated medical benefits and facilities the highest in importance, with Commissary privileges, Exchange privileges, government family quarters, and recreation facilities following in importance. Elster and Thomas (1981) point to the "substantial sensitivity of retention propensities to alternative retirement systems" (p. 24), drawing the conclusion that "economic variables such as military compensation, civilian unemployment, and civilian wage opportunities were statistically significant predictors of career petty officer retention behavior" (p. 25). In fact, efforts have been made to create models that test the effects of alternative retirement policies on retention (Warner, 1979) or that assess the predictive utility of retirement policies on retention (Chipman and Mumm, 1978).

In a study of enlisted Navy retention, Singer and Morton (1969) found that reenlistment increased as the number of dependents increased. Factors which may contribute to this relationship are as follows. (1) Leaving the security of any position may be more psychologically/economically difficult as the number of dependents increase, (2) dependents' medical care in the Navy raises the value of a married man's Navy income plus fringe benefits, and (3) with more dependents the less

likely is the individual to pursue college, thus, increasing the likelihood that he/she will make a career in the Navy. The authors also found that for the subpopulations of interest, reenlistment rates increased in a fairly orderly manner as paygrade increased.

Gender

Retention issues for active duty women have also been examined (Hunter, 1982). A study conducted by the U.S. Army in regards to reenlistment/retention of women in the Women's Army Corps found that 36% of the respondents indicated they would reenlist, 47% planned to exit, and 17% were undecided (Plog & Kahn, 1974). The reasons given for reenlistment included the following: (1) reenlistment benefits, (2) satisfaction with current work assignment, and (3) an opportunity to change one's Military Occupational Specialty (MOS).

In a listing of the benefits of Army life, the highest ranked benefit was the opportunity to learn a trade or skill that would be useful in civilian life. The authors suggest that this benefit may be crucial in the reenlistment decision. With respect to the 47% of the sample who indicated that they would not reenlist, the following reasons were given: (1) plan to go to school under the GI Bill, (2) inability to change one's MOS, (3) Dissatisfaction with the Modern Volunteer Army, (4) a desire to get away from "hassling," and (5) an interest in "seeing if I can make it on the outside."

It is pointed out that the desire to pursue educational goals outnumbered the closest contender by a three- to one-ratio. In terms of complaints about Army life, the percentage of problems revolved around perceived inadequacies of housing facilities (e.g., lack of good bathroom facilities). Another interesting point brought up in this survey was that about 75% of the respondents felt that both the public and the servicemen have a poor image of enlisted women, thus, possibly impacting the reenlistment decision. It was also suggested that the influence/opinions of relatives and friends may impact the decision of whether to stay or not.

In an investigation of retention of young women in traditional versus nontraditional jobs in the civilian and military sector, lower turnover rates were found for those in the military (for both sexes) as opposed to the civilian market (Waite & Berryman, 1986). Women who had received substantial formal training in the military were less likely to leave than those who did not receive training; for males, there was no difference. The authors found sex segregation of occupations in both the civilian and military sectors, but it was especially pronounced in the military for typically male occupations. Little support was found for the hypothesis that being in a traditional sex-typed occupation will affect turnover, with one minor exception being that military women in traditionally female jobs were slightly less likely to leave the military.

Quester (1988) found that Navy women were: (1) more satisfied with military life than men, (2) were more likely to complete their first term and reenlist, and (3) controlling for initial entry program, female promotion rates were higher than their male counterparts. Additionally, women were "less likely to be troublesome recruits or, at least, they are considerably less likely than male recruits to be demoted or to be deserters" (p. 11).

Family Factors

The impact of familial factors on QOL has been extensively scrutinized in the literature (Andrews & Withey, 1976; Michalos, 1986; Zedeck, Maslach, Mosier, & Skitka, 1988). Schuessler and Fisher (1985, p. 137) point out that "the finding that marital status is associated with lower than

average QOL occurs with some regularity." They summarize that while research has found that marriage contributes to overall happiness, QOL has also shown to be offset by having very young or teenage children. Orthner and Pittman (1986, p. 573) point out that "until very recently, organizational research and family research have remained relatively distinct enterprises." It is pointed out that it is arbitrary to separate family factors from work factors given that "the potential influence of families on work attitudes has been suggested in several studies" (p. 574).

In a study focusing on organizational and familial factors that affect job commitment with Air Force personnel, Orthner & Pittman (1986) found that: (1) Positive exposure to family support programs (such as marriage and family enrichment, youth activities, and financial counseling) had a direct effect on the perception of organizational support and an indirect effect (via perceived organizational support) on family support and job commitment; (2) organizational support had a positive effect on family support and job commitment; and (3) a positive effect was found for perceived family support on job commitment. Air Force personnel had greater job commitment when they perceived that their families (especially their spouse) were supportive of their career.

Bynum and Fischl (1986) found that the most cited reason for not reenlisting in the Army was conflict with family and leisure time. Thus, it was recommended that policies should be identified which take into consideration the Army family needs, with the objective being to isolate "motivators and detractors in family views of Army retention" (p. 23). In an investigation of burnout, job satisfaction, and spousal perception, Zedeck et al. (1988) found that employee's satisfaction with extrinsic aspects of work is more highly related to his/her spouse's perceptions of the work's impact on family life than the employee's intrinsic satisfaction.

The interaction of retention of military personnel and the influence of family and affiliates has been suggested by Grace et al. (1976) who pointed out that the family has a very important influence on retention. They found that the Navy tends to enlist a single individual and reenlist a married one. It was also found that family member's dissatisfaction with Navy life tended to spill over into the job and work setting with the intriguing observation made that "this even carries over from the past in that personnel whose parents or guardians had negative feelings about the Navy were less likely to reenlist" (p. 7 of the results section). Personnel most likely to reenlist indicated that their spouses liked the retirement benefits, dependent medical benefits, and Exchange and Commissary services. Watson (1986), also, emphasized that the significant influence of family and friends on the Air Force members' decision to stay or leave suggests that "action should continue to be taken to monitor and improve spouse satisfaction with the Air Force" (p. 3), which may entail addressing the spouses' career aspirations, collocation, and reduction of frequency of PCS moves.

In an investigation of marital satisfaction, job satisfaction, and retention in the Army, Woelfel and Savell (1978) found that the following aspects of Army life reported as most disruptive to family harmony were: (1) MOS related factors, especially focusing on duty hours (too long/irregular/uncertain); (2) separation from family; and (3) PCS moves. Aspects of Army life that were found most beneficial to family harmony were: (1) financial (e.g., job security, number and size of fringe benefits, and/or base pay); (2) medical and dental care; and (3) PCS moves. Woelfel and Savell (1978) also found that job satisfaction had a strong effect on retention, with it emerging "as the single most important factor in soldiers' intentions to remain in the Army" (p. 31). Interestingly, and converse to their expectations, the authors did not find any relationship between marital satisfaction and any of the Army experience variables (such as number of hours worked per week), job satisfaction, or retention.

Other research has indicated the necessity of considering wives' viewpoints in any retention program given that "62.1% of those officers planning to leave active service reported that their wives' attitudes influenced their decisions" (Lund, 1978, p. 38). It was also found that 61.1% of the junior officers who were planning to stay were influenced by their wives' attitudes.

Grace and Steiner (1978) found that wives generally had a favorable attitude towards the Navy, with noncareer wives tending to be less favorable than career wives. The prevailing economic conditions (i.e., recession) also influenced wives' attitudes towards reenlistment, with it generally being the case that wives preferred "to hold on to the security of Navy life and were reluctant to consider other possibilities at the recession's end" (p. 47). Another crucial factor was the wives' attitude towards Navy life and the sense of being proud to be associated with the Navy.

Housing

Housing has received some attention in the QOL literature (Andrews & Withey, 1976). In reviewing the research, Muoghalu (1991) points out that housing has a significant effect on human well-being, both mental and physical health. Given the frequent relocation inherent in the military career, housing would appear to play an integral role in the quality of one's life. Along with duty station choice and medical services, housing was determined to be an important variable in regards to the career reenlistment decision (Fletcher, 1981).

In an extensive study investigating military families' attitudes towards housing, Stumpf (1978) found that "those in civilian housing, especially those owning their own homes, were more satisfied than the military housing occupants with their chance to get away from the military atmosphere at their residences" (p. 11). Testing a model via regression analysis, which considered the relationship between housing variables, demographic variables, QOL, and career intentions, Stumpf (1978) found that: (1) Career intention for military personnel and favorability toward military career for spouses was positively associated with QOL, number of times in military housing, and number of dependents; (2) fair market rental value of present housing was positively associated with QOL for spouses, while relative income within paygrade was associated with QOL for military personnel; and (3) housing attitudes (e.g., housing satisfaction) was strongly associated with QOL.

Training, Assignment, and Development/Promotion

Due to the costly nature of early attrition/retention, research has been conducted regarding training factors that may contribute to this outcome. Fernandes, Bearden, and Felter (1984) reviewed a training program for Navy recruits that differed from traditional training in that the number of recruits per training session was limited and an informal atmosphere encouraging discussion and interchange was provided (thus, limiting the typically punitive/structured style of recruit training). The implementation of this program resulted in a training attrition rate 3.9% lower than for the control recruits. Participants in the modified training program also had better performance records than the control group.

In a study comparing training attitudes, perceptions, and experiences of Class "A" school and apprentice training personnel, the best predictors of the intention to complete their enlistment were lack of regret regarding the enlistment decision, attempts to advance in rate, and organizational commitment. The best predictors of the intention to reenlist were the intentions to make the Navy

a career, lack of regret regarding the decision to enlist, and the perception of not being able to obtain a better civilian job (Landau, McCabe, & Wagner, 1981). In a study of recruit training, Landau, Farkas, and Wagner (1980) found that "by the end of training more were generally in favor of completing their enlistment and were satisfied, and fewer were likely to leave even if it were possible, had thoughts of leaving, and regretted their decision to join the Navy" (p. 27). Interestingly, in an analysis of recruit's met and future expectations, improving the QOL was rated as the best predictor of commitment.

The assignment of Navy officers is also a factor that needs to be considered when investigating retention. Robertson and Pass (1979) point out that there may be some Navy assignments which "... provide better opportunities to achieve required qualifications than others" (p. 1). In their study of education, first assignment, and retention, the authors found that retention was highest for officers assigned to small combatant ships and lowest for officers responsible for staff and supporting shore activities. The conclusion was drawn that the first assignment to a certain ship or unit may be related to retention.

In a study investigating retention of junior surface warfare officers (SWOs) and the impact of early career experiences and development, Cook and Morrison (1982) found that timely completion of SWO Personal Qualification Standards (PQSs) (considered essential for promotion consideration and critical career assignments) had a significant and positive impact on the early career performance evaluations and career intentions of junior SWOs. Personnel who attended SWO School-Basic completed SWO PQS in significantly less time than officers who did not. Assignment also played a role in completion of the PQS given that those assigned to engineering billets for the majority of their initial sea tour completed of the PQS at a slower rate than did those assigned to weapons, operations, and/or deck billets, or those who may have been rotated through several assignments. The pertinence of this study to QOL is that the interactive effects of training and assignment may significantly impact officers' ultimate promotion opportunities. Marcus (1984) also notes that the impact of advancement to E-5 on retention was very significant; given that the associated pay increase was small, it was suggested that promotion could be a useful retention tool.

Summary

Given that the literature has pointed to intent to reenlist as one of the most significant predictors of retention, a QOL survey should measure this variable. Other QOL constructs that may affect retention include: pay, military services provided, housing, and job satisfaction. Pay could be measured both *objectively* (base salary and any perquisites) and *subjectively* (service member's satisfaction with his/her financial status and the accompanying influence on retention). The level of services (e.g., counseling, medical) provided by the Navy may also have an effect on retention and, thus, should be measured in terms of the service member's perceptions of the provision/quality of services. Housing, also, appears to impact the retention decision. In response to this QOL domain, such issues as ownership versus rental, quality of neighborhood (e.g. density, crime, availability of schools), and type of home (i.e., style) could be addressed. The assigned amount of time spent at sea, also, is a potentially influential variable with respect to the housing issue. The possibility exists that time spent away from home may influence the service member's opinions about housing (i.e., the more time spent at sea, the less prominent role the quality of housing plays in the retention decision).

To add to the complexity of the QOL-retention relationship, and especially the housing/time at sea issue, is the impact of the spouses' feelings. The literature emphasizes that the retention decision is significantly weighted by spouses' feelings towards housing, assignment, services, and so forth. Thus, to arrive at a more accurate measurement of the retention-QOL association, the spouses' opinions should be allotted due consideration.

It is also evident that gender differences prevail with respect to experience of the military, and the retention decision may be markedly different depending on service member's gender. In addition, even though it can be contended that job/career satisfaction is related to global QOL, its influence on retention is amply documented and should be examined accordingly.

Whereas turnover intention has been found to be a good indicator of turnover, actual turnover for survey respondents could also be tracked over time. This would require that survey respondents provide their social security number on their surveys, so responses could be linked with other information about them contained in the centralized record systems (e.g., Enlisted Master File). Service member's decisions about staying in the service (i.e., attrition, retention) could then be monitored over time and matched to their stated intentions on the survey. The benefit of having access to archival records via social security number should be weighed against respondents' potential lack of candor to sensitive questions if respondents are identifiable.

A key consideration in assessing retention in a survey to Navy service members, and in incorporating retention as a dependent variable in a predictive model, is the fact that the current downsizing effort in the Navy has made nonselective retention an undesirable outcome. Previous efforts to maximize retention of all service members have been replaced with selective, targeted retention policies. Reenlistment policies and separation bonuses are designed to target specific groups for retention. Key identifiers for those groups targeted for retention, therefore, will be collected in the questionnaire and considered for inclusion in the model. These include rating, Enlisted Management Community, Navy Enlisted Classification, and length of initial obligation. The inclusion of these variables in a predictive model will allow for the consideration of QOL needs and levels of satisfaction for various subgroups targeted for retention.

Attrition

Major Points

1. Past research has generally been inconclusive regarding factors that influence attrition.
2. Factors associated with higher attrition include individuals: (a) with no prior employment experience, (b) individuals who changed jobs frequently in the civilian sector, (c) individuals who were unemployed prior to enlistment, (d) who did not have a high school diploma, (e) who had a lower intention of completing enlistment, and (f) who were older.
3. Influence of family factors/marital status on attrition has been mixed.
4. Higher attrition rates were found for first term enlisted women than first term enlisted men.
5. Significant situation/organizational predictors for attrition included Navy school attended, entering rate/occupation, and initial fleet assignment. A higher expectation for the first job assignment was positively associated with attrition.

Owens-Kurtz, Borman, and Peterson (1988) point to the statistic that attrition from the Naval Reserve Officer Training Corps scholarship program is usually at 50% over the tenure of a cohort group, thus, emphasizing the costliness of attrition. The complexity of this concept is evidenced by the multitude of interweaving variables that potentially influence it, in conjunction with the alternative approaches that have been employed to predict attrition (Lockman & Warner, 1977). One such effort, for example, is the administration of the Military Applicant Profile, an autobiographical information questionnaire which asks about the respondent's family, academic and work experience, athletic/physical competence, self-concept, and social style/participation (Eaton, Weltin, & Wing, 1982). Evidence was found for the usefulness of this instrument and its relation to attrition.

In their review of the turnover research, Owens-Kurtz et al. (1988) point to a host of factors that may affect turnover. Factors that were assessed included *demographic variables* (e.g., race, gender, age, family responsibilities) and *psychological variables* (e.g., ability, personality, job satisfaction, organizational commitment). In terms of the demographic variables, mixed results have prevailed. The authors found that: (1) turnover is negatively related to tenure on present job and age; (2) overall, men and women have similar rates of attrition, with women higher when differences were found; (3) despite some findings of higher turnover rates for singles, no consistent relationship between marital status and turnover was found; and (4) the turnover-education association is inconclusive. In regards to psychological variables, moderate to strong relationships between personality, vocational interests, biographical information, job satisfaction, organizational commitment and turnover have been found. No relationship was found between ability and turnover.

In a study of psychological and organizational factors pertinent to attrition and performance in USMC training, Novaco, Sarason, Cook, Robinson, and Cunningham (1979) found a wide variance of attrition across platoons but found no differences based on demographic or aptitude measures. There were also no differences in terms of performance or the initial composition of the units. Kissler (1980) emphasizes that, for the most part, results of past research have generally been inconclusive in regards to factors that influence attrition.

Buddin (1984) conducted a study analyzing early military attrition behavior and found that individual work history and experience had an important effect on attrition. The author found that: (1) individuals with no prior employment experience have higher attrition rates than those with some work experience, (2) higher attrition rates exist for those who changed jobs frequently in the civilian sector, (3) unemployment prior to enlistment is associated with an increased likelihood of early attrition in the Navy and Air Force, and (4) not having a high school diploma was found to be a strong determinant of early attrition. Orend, Stroad, and Rosen (1977) assessed the differences between Army discharges and nondischarges and found that the discharger had more difficulty in school, complained more of boring civilian jobs, and tended to be more dissatisfied with civilian life as opposed to the nondischargee.

In differentiating early leavers from stayers in a population of USMC recruits, Youngblood, Mobley, and Maglino (1981) found that:

. . . leavers initially had significantly lower intentions of completing their enlistment, lower expectations of completing their enlistment, lower expected satisfaction, lower attraction to the military role, lower perceptions of work group attraction and expected leader structure, lower internal motivation and growth need strength, and higher perceived chances of finding an acceptable civilian job. (p. 6)

In a review of the attrition (Navy, Army, Air Force, and Marines) research, Goodstadt and Yedlin (1980) focus on three major areas that may influence attrition: (1) individual's background factors (e.g., age, test scores, education level); (2) organizational conditions and policies (e.g., leadership, quality of lifestyle and living conditions); and (3) time differentials (e.g., early expectations and early service experience may influence attrition at different stages of the enlistment). A variety of recommendations are provided that are especially pertinent to QOL. One such example is the development of a Transition Training Program which would equip the soldier with the requisite coping skills to survive the first enlistment. This may include training in financial management skills, information on community resources, facilities, and housing, and any other information that may ease the transition into military life. This is similar to a recommendation Sarason (1977) suggests in reference to reducing attrition. The contention is made that by providing social and cognitive training modules in the military, this might serve in preparing for the "complex and novel experience of being a member of the military service" (p. 276).

Pay

In a study of attrition, Doherty (1981) found that pay was the most important reason for separation followed by not having a permanent home. In reviewing the research, it was found that if increases in pay or availability of promotions exists, then military personnel are less likely to attrite (Kissler, 1980).

Gender

Eaton and Nogami (1981) investigated Army male and female attrition and found that female attrition was lowest in the traditional female MOS category and highest in the nontraditional female MOS category. There was no effect of MOS categories on males. Attrition was also found to be higher for: (1) non-high school graduates than high school diploma graduates, with female non-high school graduates showing the highest attrition, and (2) whites than African-Americans, with white females showing the highest attrition. With respect to Armed Forces Qualification Test (AFQT) scores, individuals with lower scores had higher attrition, and females who scored lower on the AFQT showed the highest attrition.

Royle (1983) states that the rate of attrition for first-term enlisted women in the USMC is nearly 50%, twice that of first term enlisted men. In reviewing the research and analyzing existing data sets, Royle found that situational variables were strongly related to attrition after recruit training such as occupational field and satisfaction with supervisor. Women who were dissatisfied with their jobs, working relationships, and future opportunities in the USMC were more likely to think about quitting than their satisfied cohorts. Even though some biographical variables (e.g., women who do not complete recruit training enter the Corps with less interest in male-oriented activities, and lower expectations of completing training) were related to attrition, the correlations were slight. It was also found that pregnancy rates were comparable to those of other women their age and that women who attrite due to pregnancy were more likely to be married than nonattrites, but otherwise no differences were noted.

In response to the statistic that 60% of the female USMC attrition after recruit training is pregnancy-related, Gerrard and Royle (1985) undertook a study to determine whether factors such as traditional family/career orientation, feelings of isolation, and USMC dissatisfaction are valid predictors of attrition. They found that women who were pregnant at the time of the survey had

more traditional sex role orientations (i.e., balancing career and family, number of children desired, marriage plans), felt more isolated, and were less satisfied with the USMC than women who were not pregnant at that time. It was also found that women who attrited, independent of pregnancy, had more traditional sex role orientations; they were more likely to value family over career. Women who attrited due to pregnancy were found to hold more traditional values than women who attrited for other reasons, even before they became pregnant. The authors point out that "specifically they planned to have children earlier and to have more children than did women who attrited for reasons other than pregnancy" (p. 14). In addition, women who attrited, when pregnant, were found to be less committed to a career outside the home than those who became pregnant and remained in the USMC. It is pointed out that this was true even when the measures were collected prior to pregnancy, thus, lack of commitment was posited as a preexisting condition.

In a study of Navy women in traditional and nontraditional jobs, Thomas, Monda, Mills, and Mathis (1982) found that: (1) men reenlist at higher rates than women; (2) women have lower absenteeism rates and higher honorable discharge rates than men; (3) approximately equal proportions of men and women are advanced to petty officer, migrate to another job during their first enlistment, and prematurely leave the Navy; and (4) assignment to a nontraditional job has no effect on women's satisfaction, advancement, attrition, or reenlistment during the first enlistment, but a strong effect prevails for the men. It is speculated that this may be due to the men generally being assigned to ship duty while the women are primarily assigned to shore duty. In response to the results, the authors recommended: (1) the establishment of on-base quality child care and (2) efforts to improve the collocation of couples in response to the lower retention rate of married Navy women as opposed to married men.

Family

In their study of Army attrition and satisfaction, Allen and Bell (1980) hypothesized that poor job conditions, dysfunctional organizational climate, disconfirmed training expectations, and Army life problems would have differing impacts on the single versus married personnel, with the married personnel being more adversely affected (i.e., more dissatisfied). Even though the differences were small, the soldiers with families were less satisfied than those without families.

Training and Assignment

In reviewing the research, Elster and Thomas (1981) point out that various situational and organizational factors including Navy school attended, entering rate/occupation, and initial fleet assignment added significantly to the prediction of attrition. Lockman (1978) found that attrition was greater for men who were disenrolled from "A" schools for nonacademic reasons as compared to the attrition of academic failures and graduates. Those in the occupational fields that involved operation or maintenance of electronic equipment tended to have the highest survival rates; those in the "blue water" fields (e.g., marine engineering) had the lowest. Wide variations were found in 3-year survival rates according to whether the men were rated, what their rating was, and whether they graduated from Class "A" schools. In a program designed to reduce attrition that was especially prevalent among the general detail force, Fernandes and Bearden (1984) evaluated the fleet orientation and adjustment training (FLOAT) program. They found that the program was not effective in reducing attrition in a shipboard environment, but attrition was significantly reduced when training was shorebased.

In a study of Army Reserve and National Guard attrition during training, the strongest predictors of attrition were education and mental aptitude (Grissmer & Kirby, 1984). Less consistent, but still statistically significant, were the findings that: (1) females had higher attrition rates than males and (2) older enlistees had somewhat higher attrition rates than younger enlistees. Contrary to their hypotheses, Grissmer and Kirby found that African-Americans showed lower attrition rates than non-African-Americans. Commensurate with their hypothesis no consistent pattern was found with the family/marital status variables.

Mobley, Hand, and Logan (1977) found the following factors to be associated with recruit training attrition in the USMC: education, AFQT Mental category, expectancy of completing obligated service, Marine role attraction, and internal motivation. All those factors were negatively correlated with attrition. Self-reported reasons for recruit training attrition were: (1) missing family/friends back home, (2) lack of personal freedom, (3) too much pressure, (4) health reasons, (5) rules and regulations too rigid, and (6) unfair treatment by superiors. Mobley, Hand, Baker, and Meglino (1978) found that USMC graduates, when compared to attrites, had higher education, higher mental scores, and were less likely to be married. Graduates also had a higher intention to complete training, expectancy of completing training, and, interestingly, a lower expectancy of being able to obtain an acceptable civilian job.

In a study of attrition of high-quality recruits, Buddin (1988) found a slight increase in attrition of high quality Navy recruits from 1982 to 1985. In basic training, recruits who were age 21 or older had higher attrition rates than 17-year old recruits. No difference was found between African-Americans and non-African-Americans, while post-high school education and AFQT had a negative effect on basic training attrition.

Lau (1979) investigated personal and organizational determinants of enlisted attrition in the Navy and found that the recruits' unrealistically high expectations of their first job assignment, at the conclusion of training, was a contributing factor to their attrition. Attrites also reported significantly lower climate perceptions of supervisory effectiveness, climate for innovation, division morale, and delegation of authority. Lower scores were also registered for general living conditions such as privacy. Factors of Navy life that influenced attrition were as follows: (1) family or personal problems, (2) general dissatisfaction with Navy life, (3) lack of freedom and independence, and (4) dissatisfaction/lack of interest in the entry job. Recommendations to ameliorate the prevalence of attrition included introducing counseling programs for the less satisfied individuals, providing realistic information regarding the recruit's first job (e.g., improve classification/placement), and installing programs that address quality of Navy life and living conditions.

Summary

While the literature does seem to point to the influence of QOL factors on the retention decision, the QOL/attrition relationship is more oblique. Demographics seem to have received more attention than specific QOL factors with gender differences, especially, being highlighted—a survey might address the gender-attrition relationship. There also seem to be some differences in attrition contingent on prior employment experience and frequency of job changes. Some factors that have evidenced some impact on attrition include: (1) initial fleet assignment (and the expectations of the recruit), (2) pay (not much literature on this variable), and (3) attraction to military role. Furthermore, other singular factors include family/personal problems, lack of freedom/independence, and job dissatisfaction.

An approach similar to that suggested for the measurement of retention would be appropriate for considering attrition. A self-reported intention to attrite item on a questionnaire would provide a good approximation of actual attrition—keeping in mind the difference between retention which entails the reenlistment of recruits subsequent to their completion of active obligated service and attrition which entails the discharge/departure of recruits prior to completion of their obligated service. Given the current downsizing effort in the Navy, as well as the added flexibility to shorten the duration of one's enlistment, this survey could also address the respondent's thoughts about attriting and reasons for such. As with retention, actual attrition of first-term sailors could also be captured from existing data bases and matched to survey respondents' data.

Performance

Major Points

1. The research tying QOL and performance is suggestive at best. Only a slight relationship was found between job satisfaction, a possible QOL indicator, and performance. Mediating factors of the job satisfaction/performance relationship such as leader reward behavior have been hypothesized.
2. Work factors that have been positively associated with performance included (a) affective commitment, (b) organizational identification, and (c) personal control.
3. Continuing commitment was found to be negatively associated with performance.
4. Mixed results have been found with situational constraints (e.g., training, materials and supplies).
5. Possible moderator variables included occupational group and individual control.

The job satisfaction-performance relationship has been one of the more perplexing and equivocal relationships examined in the work environment (Doll & Gunderson, 1969; Henne & Locke, 1985). One of the factors that contributes to this tenuous relationship is that performance is generally measured via supervisory assessment or self-report rather than from objective measures of job performance. A second factor involves the paucity of research linking QOL and performance. However, it would appear appropriate to juxtapose job satisfaction with life satisfaction, given that prior research has pointed to the relation of satisfaction with work and satisfaction with life and their *mutual* relationship (Chacko, 1983). In fact, the author holds the notion that job satisfaction exerts greater influence on life/nonwork satisfaction than vice versa.

Evidence was found for the influence of extrinsic job satisfactions such as satisfaction with supervision, pay, and promotion on life satisfaction. Schmitt and Pulakos (1985) were interested in the prediction of job satisfaction from life satisfaction with their hypothesis being that individuals may have a generalized predisposition towards satisfaction or dissatisfaction across situations. In three out of five samples, life satisfaction was found to be a significant predictor of job satisfaction. However, in a sample of civil service employees who were eligible for retirement, the opposite relationship was found; life satisfaction upon retirement was predicted by job satisfaction. The authors point to the practical implications of this study in that knowledge of the employees' general satisfaction may be a barometer of the relative success of any job redesign efforts.

Job Satisfaction/Performance

In a meta-analysis of the job satisfaction-job performance relationship, Iaffaldano and Muchinsky (1985) found the best estimate of the true population correlation between satisfaction and performance to be .17, thus, indicating only a slight relationship between the two variables. The authors point out that only 8 of the 217 correlations exceeded .44. Jackofsky and Slocum (1987) tested a predictive model delineating the impact of job performance on turnover and found that the better performers rated their leader's behavior as more positively rewarding than the lower performers. An indirect relationship was found for job satisfaction and performance with the mediating variable being leader reward behavior—the more the leader dispensed positive reinforcement, the more satisfied was the subordinate. This points to the need to investigate mediating factors of the satisfaction-performance relationship or even alternative measures of performance. In reference to the latter point, Organ (1988) makes the argument that organizational prosocial or citizenship-type behaviors (denoted by helpful, constructive gestures) more generally correlates with satisfaction than traditional productivity or in-role performance measures.

Organizational Commitment

Organizational commitment has also been investigated with respect to the satisfaction-performance relationship. In testing their hypothesis that job satisfaction would be more closely related to job performance than organizational commitment, Shore and Martin (1989) found a stronger relationship between job satisfaction and performance as measured by supervisory ratings than between satisfaction and organizational commitment. In a study comparing affective commitment (emotional attachment with the organization) and continuance commitment (perceived costs associated with leaving the company), Meyer, Paunonen, Gellatly, Goffin, and Jackson (1989) found that affective commitment was positively correlated with performance while continuance commitment was negatively correlated with performance. It was also found that job satisfaction did not correlate with performance.

Organizational identification (defined as the importance of the organization in the person's self-concept) was hypothesized as influencing employee affective responses (i.e., job satisfaction) as well as performance responses (e.g., task involvement, investment of effort, and performance effectiveness); thus, a positive relationship was conjectured between: (1) organizational identification and satisfaction and (2) organizational identification and task-related variables (Effraty & Wolfe, 1988). The resulting correlations confirmed the aforementioned predictions, even though the authors caution that causation cannot be inferred (which is characteristic of the bulk of the satisfaction-performance studies).

Situational Constraints/Control

Situational constraints and the degree of personal control have also been proposed as possible factors relevant to satisfaction-performance. In a field study (sample drawn from three managerial levels) examining the effects of situational constraints (e.g., faulty equipment and inaccurate information) on performance, affective reactions, and turnover, O'Connor et al. (1984) found that higher situational constraints tended to be associated with lower employee performance, even though the magnitude of the association was smaller than expected. The presence of situational constraints was also associated with greater employee dissatisfaction and frustration.

The highest level of turnover was also found with the group experiencing the highest level of constraints. Peters, O'Connor, Eulberg, and Watson (1988) investigated situational constraints and their relationship to performance, affective reactions, and reenlistment plans in seven Air Force occupational specialties. Situational constraints cited included the following 14 dimensions: training, materials and supplies, time, tools and equipment, planning/scheduling of activity, cooperation from others, personnel, physical working conditions, policies and procedures, red tape, transportation, job relevant authority, job related information, and forms. Decreased satisfaction, increased frustration, and increased thoughts of leaving the Air Force were associated with the presence of constraints. Interestingly, and opposite to their prediction, constraints were not related to either performance or intentions to leave. Peters et.al. (1988) suggest that the reason for this unexpected finding might be that "because constraints were not reported to be severe, it may simply be unreasonable to expect them to account for significant behavior or intentions regarding that behavior" (p. 142). The two measures of reenlistment plans: (1) reenlistment likelihood and (2) thoughts of leaving were each measured on a one-item scale. Even though the correlation between the two items was found to be statistically significant ($r = .31$), the authors contend that the low magnitude of the correlation supports the "conceptual distinctness" (p. 137) of the items.

The notion of control within the organizational framework has also been investigated as being potentially pertinent to the satisfaction-performance relationship. The hypothesized relationships between: (1) personal control and performance, and (2) personal control and job satisfaction were borne out in separate studies of nursing service personnel and clerical workers in two regional offices of an insurance company (Greenberger, Strasser, Cummings, & Dunham, 1989). Fisher (1985) makes the intriguing observation that whenever different performance-satisfaction results are found between work groups, then the "... results may be due in part to systematic differences in the extent to which situational factors control performance variance in the two groups" and that "... satisfaction and performance can only be related to each other when some reasonable part of the variance in performance is under the workers' control" (pp. 170-171). Fisher (1985) found that the amount of performance variance, which is individually rather than situationally controlled, is an important moderator of the satisfaction-performance relationship.

Performance and Personal/Family Well Being

Greenhaus, Bedeian, and Mossholder (1987) were interested in how negative experiences within one's work environment might impair the quality of the employees' personal and family lives. An engaging area that the researchers investigated was the role of job performance on personal and family well-being. It was speculated that effective performance by the employee may actually detract from personal and family well-being due to the significant investment of time, concentration, and emotion that may be necessary for high performance. Results suggested that: (1) high job performance was more likely to detract from marital happiness and QOL in work environments where high role conflict prevailed as opposed to environments with low levels of role conflict, and (2) high job performance may also detract from QOL in nonsupportive environments and from marital adjustment in inequitable environments. However, the significance of these interactions was noted as being small in magnitude. Overall, high job performance did not detract from personal or family well-being except for females where a negative relationship was found between job performance and marital adjustment and QOL. QOL was assessed with a scale which measured employees' attitudes toward their lives.

In a study comparing affective response to work from employees and the spouses' assessment of QOL, Zedeck et al. (1988) found that in general the dissatisfied/burned out employees perceived themselves as being above average performers; low correlations were found between employee satisfaction and performance. Employee performance was also found to have little relationship to spouse perceptions of family and home spheres. However, a spillover effect was found in that employee's satisfaction with extrinsic aspects of work (e.g., compensation) were more highly related to spousal perceptions of the work's impact on their family life than found with intrinsic satisfaction (e.g., feelings of competence/pleasure).

Moderators of the Satisfaction-Performance Relationship

As mentioned previously, a wide array of variables may moderate the satisfaction-performance relationship. Doll and Gunderson (1969) found that occupational group may be a potential moderator. The satisfaction-performance relationship was more pronounced for a scientist group as compared to a Navy enlisted group. The level of education may also be a contributing factor. King and Hautaluoma (1987) found that overeducated workers did not differ from their cohorts in terms of job and life satisfaction. Sense of competence has also been theorized as playing a moderating role in the personal life stress/organizational stress relationship (Bhagat & Allie, 1989).

In a study of 276 teachers, it was found that their feeling of being able to competently interact effectively with their work environment moderated satisfaction with work, satisfaction with coworkers, satisfaction with supervision, emotional exhaustion, and feelings of depersonalization. Moderating effects were not found for absenteeism and job performance.

Differences in the problem-solving styles between supervisors and employees have also been suggested as another moderating variable in the satisfaction-performance relationship (Goldsmith, McNeilly, & Russ, 1989). Job knowledge of military police was found to be related to simulated performance ratings but not job satisfaction or intention to turnover (Ward, 1989). The authors suggest that the lack of significance for the latter relationship may be due to the need to investigate further moderator variables such as job experience.

Hardiness (defined as a constellation of personality characteristics that function as a resistance resource when stress is encountered) was also posited as a moderator between the stressor-outcome relationship (Manning, Williams, & Wolfe, 1988). Instead of maintaining the predicted moderator effect, hardiness had a direct effect as manifested by hardy individuals reporting higher levels of job satisfaction and fewer tensions at work than the less hardy; it was also found that hardy individuals experienced a higher QOL. It was speculated that this result would be related to personal well-being and work performance.

Performance and the Navy

In a study investigating job satisfaction, retention, and performance of Navy enlisted men, Stoloff (1971) found that reenlistees and men expressing an intent to reenlist had a more positive attitude toward the Navy in general, showed a greater degree of satisfaction, and received more proficiency pay and/or hazardous duty pay than did nonreenlistees and men who did not intend to reenlist. High performance ratings were found to be associated with high levels of achievement and a high degree of satisfaction with the work.

Summary

Given the lack of definitive evidence verifying the performance/satisfaction relationship, and by analogy of the QOL/performance relationship, it may be more problematic to measure this construct than the prior outcomes. Concrete measures of performance, such as work samples, have been virtually extinct from the literature, with supervisorial assessment prevailing as the norm.

The two most feasible means of representing service members' performance are through the use of supervisory ratings of record and/or self-ratings of performance. Supervisory ratings, however, may prove to be problematic due to inconsistency, rating inflation, and lack of availability (see appendix for a discussion of Navy performance ratings and their availability). Self-reports of performance ratings may prove most feasible, although, also subject to distortion.

First, questionnaire respondents could be asked to report their most recent rating. The reliability of such a self-report could be ascertained by matching the self-reported information with records of assigned ratings. Second, respondents could be asked to rate their own level of performance compared to top performance. Third, questions addressing the respondents' perceived associations between QOL factors and performance could be addressed (e.g., "To what extent does the child care you have affect your ability to perform your job?").

It is imperative to keep in mind that even if a rigorous measure of performance is identified, based on the findings from the literature, the QOL/performance association would still be speculative at best.

Readiness

Major Points

1. Even more than performance, the research is sparse in regards to the QOL/readiness relationship. Conflict between responsibilities for family and children and the military mission may impact readiness, even though that is speculative.
2. Most of the research focuses on material/resource readiness rather than personal readiness.

As an outcome variable, readiness has been a difficult variable to measure. In fact, Evanco (1981) makes the claim that no one has adequately been able to operationalize the concept of readiness as of yet, even though efforts have been made to develop a computer-managed readiness assessment system (Thode & Buletza, 1985). Especially lacking is research tying in QOL factors and their impact on readiness. For example, in a review of the readiness literature (Roane, Hibbs, & Horowitz, 1978), the preponderance of research involves material and resource readiness, but has very little to do with QOL and readiness.

There is also some research that addresses physical readiness and how certain lifestyle behaviors (e.g., substance use) and background variables (e.g., age, lower education, previously overweight) may influence this outcome (Conway & Dutton, 1985; Conway, 1987), but very little in the way of QOL factors and their attendant impact. Landrum (1979) discusses that certain conflicts between responsibilities for family and children and their military mission may impact readiness. It is pointed out that (keeping in mind the date of the article) "some of today's military families, reflecting a changing society, place their own needs above the mission . . . the power of

the family requirements in this conflict has indeed affected personnel issues [i.e., readiness] in the military" (p. 4). Landrum (1979) identifies child care as an issue that warrants careful exploration in terms of provision of facilities, programs, and so forth.

What follows is a brief review of the readiness research, and at this time we can only speculate on the QOL-readiness relationship. In an assessment of resource cutback for training and fleet readiness in the Navy, Thomason (1979) comments on the complexity of this relationship, especially given the lack of a direct measure of fleet readiness and the potential influence of background variables. It is pointed out that the current evidence is mixed in terms of diminished resources and readiness. A needs assessment geared to identify deficiencies in the performance of main propulsion personnel in the Navy resulted in proposed training solutions such as on-the-job training and the provision of technical documents (Chiles, Abrams, Flaningam, & Vorce, 1981).

Evanco (1981) points to two studies conducted at the Center for Naval Analyses using readiness measures as a basis for relating resources to readiness (the material condition of the ships was used as the measure of readiness). However, once again it is pointed out that the lack of a unified framework for collecting readiness data and the lack of control of impinging variables (i.e., background) make the measurement of readiness an arduous task.

Lockman and Manheimer (1968) investigated manning readiness with ship performance data used as an indication of readiness. One result of interest is that in some cases a negative relationship was found between the number of personnel in paygrade and rating, and their Refresher Training Operational Readiness Inspection score. The authors point out that "this could have theoretical implications for ship manning, indicating that ship performance for point in time operations . . . may be poorer when more than or less than an optimum number of men is on board" (p. vi).

In an extensive study addressing recommendations to improve Army Reserve Component readiness, Bynum and Fischl (1986) found that MOS qualification and personnel strength were the most critical problems. They point out that even though personnel strength is primarily a function of policy and budget constraints, recruiting and retention problems may stand as contributing factors. Training is proposed as a key issue with recommendations being: (1) improve training quality, (2) use time efficiently, and (3) train dispersed personnel. It is hypothesized that with improvements in training, including increased funding for equipment, will come increased performance/knowledge level, thus, influencing the quality of readiness.

Summary

Outside of the brief references to paygrade and conflicts between family responsibilities and military mission, there is scarce mention of the QOL/readiness relationship. Most of the literature examines personnel/material/resource readiness. Each ship, for example, maintains a manning document that details positions and personnel on the ship, and a report of personnel readiness (e.g., the Pacific Fleet's Personnel Manning Report) must be routinely submitted. Such reports provide an overview of who is on-board ship, their qualifications to perform their work, and the types of positions that need to be filled. Access to manning reports might be one method to attain some information regarding readiness, but: (1) the task of matching unit readiness data to personal data records of sampled individuals would be daunting and (2) they do not provide information to address the concept of personal readiness, which may be more relevant to aspects of QOL.

Whereas personnel readiness focuses on a unit's ability to perform a function, personal readiness focuses on an individual's ability and availability for performing his/her job. Issues that could be related to personal readiness, for example, involve the contribution of financial status to personal readiness as well as family status (i.e., dependents, marital discord). A service member's readiness to perform may be affected by such factors as: (1) concerns about finances, (2) inadequate child care, (3) perceived personal psychological distress, and (4) perceived inadequacy of preparatory training. A large component of personal readiness, therefore, is perceptual in nature and may characterize the individual's life domains (e.g., financial) and their impact on perceived ability to perform.

Measurement of personal readiness, therefore, is most appropriate with a focus on the individual self-report of readiness, most feasibly, via questionnaire responses. Personal readiness assessment, thus, would appear preferable due to its focus on the individual versus the organizational component as the unit of analysis, and due to its closer apparent link with QOL domains.

Recruitment

Major points

1. QOL related factors that have been positively associated with recruitment include: education, training/gaining new skills, wider choice of assignment, and travel.
2. Deterrents to enlistment include: already settled, have a job, and have a family.
3. Unemployment rate and the prevailing economy may be QOL related factors that impact enlistment.

Even though a direct link between QOL and recruitment has not been specifically addressed, there is some evidence that factors related to QOL may impact recruitment. In an investigation of why airmen (Air Force) enlist, Mullins, Massey, and Riederich (1970) found that the most frequently given reason for enlistment was education, followed by the opportunity for wide choice of assignment. African-Americans gave opportunity for travel and wide assignment choice more often as a rationale for enlistment than non-African-Americans.

In terms of family influence on enlistment, this variable was most negligible for respondents who would have enlisted regardless of the draft, those who had positive attitudes towards the military, those who are careerists, African-Americans, and the better educated/brighter subjects. Similarly, Muldrow (1969) addressed motivational factors that influenced the Naval enlistment decision and found that the opportunity to obtain technical training and the desire to travel were the most influential reasons.

Hosek and Peterson (1985) compared seniors in high school and graduates in terms of their enlistment decision and found that graduates were more sensitive to work-related variables such as employment status, wage rate, labor force experience, job tenure, and duration of joblessness (if they were unemployed). On the other hand, seniors were more sensitive to education-related variables such as learning proficiency, ability to finance further education, and parental influence. In addressing recruitment and policies, Lockman (1975) found that the highest first year losses were of non-high school graduates, minority recruits, men age 17, and those with primary dependents.

In a national telephone survey of men ages 23 to 29, Borack (1982) found that the Air Force was rated as the most preferred service, with Army, Navy, Coast Guard, and Marine Corps rated significantly lower. Training/gaining new skills/experience, patriotism, and economic factors were rated as the most motivating variables to enlistees while those not planning to join listed: (1) already settled, (2) have job, and (3) have a family as deterrents to enlistment. Nord, Schmitz, and Weiland (1986) found that individuals enlisting in the military experienced an increase in educational expectations with enlistment intention/propensity being the strongest explanatory factor in predicting enlistment. They also found that a desire for training beyond high school but outside of college was predictive of enlistment probability.

Bowser (1974) was interested in the use of non-cognitive factors (e.g., measured via biodemographical information, vocational interest inventories, sociological data, and opinion/self evaluation questionnaires) and found that they can be viable tools in predicting success in the U.S. Navy, as well as an asset in the recruitment process. Along the same lines, Gaymon (1977) indicates that the Life Path Questionnaire, which consists of such scales as adaptability, authority figures, early maturity, family relationships, personal competence, and vocational maturity may be a useful tool to aid the Navy in selection, assignment, and remediation.

Vocational Considerations

Taking into account the recruits' vocational interests, values, and preferences has been proposed as an essential consideration in the recruitment process. Diamond (1985) points out that many recruits have not yet given career planning its due accord. It is suggested that a career maturity assessment instrument might be useful in assisting recruits in the decision making process. Holland and Baker (1987) contend that assessing vocational aspirations may be a useful and predictive technique in the recruitment/placement process.

Incentives and Economics

One consideration in the recruitment process is the reward system and the quality of incentives. Alley (1976) researched the effect of Air Force recruiting incentives on volunteer enlistment and found that interesting jobs, utilization of talents, and equitable salary were the most prominent factors in the enlistment process. It is suggested that future recruiting efforts be directed towards emphasizing the prior three factors and de-emphasizing such noncorrelates (with enlistment) as travel, responsibility, leisure, prestige, and rapid promotions. Borack (1982) surveyed enlistment intentions of males from ages 23 to 29 and found that incentives tended to increase both the quantity and quality (in terms of grades and education) of the pool of men who expressed an interest in the military. The most preferred incentives were training and job guarantees, with noncontributory educational benefits also rated highly. It was also found that interest increased with the dollar amount of lateral entry pay incentives, while bonus magnitude did not impact their interest. Shorter enlistment contracts also tended to increase interest.

Brown (1984) addressed economic issues and their corresponding impact on the recruitment process and found that for high quality enlistees, a 10% increase in the unemployment rate increased the number of high-quality enlistees by approximately 6%. Thus, compensation and the prevailing state of the economy may be QOL factors that influence the individual's prospective enlistment decision. Hoiberg (1980) states that besides the inducements of post-service educational

or occupational training benefits, the primary incentive for 4- and 6-year enlistees to remain in the military should be based on an increase in pay.

Educational Programs

Githens and Wilcove (1977) undertook a project to discern the utility of providing off-duty educational services programs and their impact on recruitment, performance, and retention. The programs (e.g., Tuition Assistance, Program for Afloat College education, Resident Education Center) were designed to improve the personnel competence level, assist them in their career development, and enhance their educational foundations. It was found that off-duty educational programs were positively viewed by civilian industry, Navy wives, active duty personnel, recruits, and operational commands. Navy wives indicated that Navy opportunities for advanced education influenced their husband's enlistment decision, and that these programs also were viewed as maintaining a positive effect on the reenlistment decision. Interestingly, no relationship was found with program participation and rated performance. Fernandez (1982) assessed the effects on enlistment of an Educational Assistance Test Program and found that each of the test programs (programs being tuition/stipend program, noncontributory Veterans Educational Assistance Program (VEAP), control program, and ultra-VEAP program) increased enlistments of high-quality males in at least one of the services (i.e., Navy, Marines, Air Force, Army). In reference to these programs, Polich, Fernandez, and Orvis (1982) state that the success of these educational benefits is contingent on the structure of the benefit plan, that is, how it is targeted to the specific subgroups. What may be uniformly appropriate for the Army may not be the case for the Navy.

Summary

The desire to travel and the level of education/training potentially provided by the military appear to be two QOL related factors that may impact recruitment. The prevailing labor market (e.g., unemployment rate, competitive pay) also appears to be a significant factor and should be examined. Otherwise, there is little else that provides concrete evidence in regards to the QOL/recruitment relationship. Given the after-the-fact mode of measuring this construct, self-report questionnaire (e.g., factors that influenced recruitment/enlistment) would be the most viable method to assess this relationship.

Conclusions

Based on the extensive literature review conducted in this report, it appears that QOL, even though a complex and multivariate construct, has a reasonable chance of being measured in terms of its relationship to certain Navy outcomes. The outcomes specifically of interest in this report are retention, attrition, performance, readiness, and recruitment. Certain dimensions such as pay, education, housing, and familial considerations appear to impact, to varying degrees, the outcome variables. Demographics, such as gender, may also play an integral part in actions leading to outcomes such as attrition. However, the literature is replete with conflicting findings so that many of the conclusions, such as the job satisfaction/performance relationship, are tenuous at best.

Given the magnitude of the QOL construct, it would be most desirous for the Navy to comprehensively determine the appropriate QOL domains, operationalize the factors, and then ascertain their effect on the military outcomes as reviewed in this article.

Recommendations

1. There is a need to further examine QOL domains and their impact on service members and their Navy careers. The relationship between outcome variables (i.e., retention, attrition, performance, readiness, and recruitment) and QOL factors (e.g., pay) should be systematically investigated.
2. Existing information about QOL domains and military outcomes should be used to construct a survey to examine their relationship. Areas such as housing, pay, career/job satisfaction, and spouses' feelings and their impact on military outcomes should be considered.
3. Some measures relevant to QOL and military outcomes may be available from existing database applications (e.g., current performance rating). The feasibility of linking these objective measures to the subjective questionnaire responses should be assessed. The use of social security numbers on the survey so as to track responses over time should be considered.
4. Expressed intentions of future participation should be used as one measure of retention. A measure of performance will also be necessary given that there may be a mediating effect of performance on retention. Also of importance in the assessment of retention is the solicitation of the spouses' perception of the Navy.
5. Besides using such available measures as performance ratings, the respondent should be asked to provide a subjective assessment/rating of their performance.
6. Personal readiness (as opposed to personnel readiness) and recruitment/enlistment should be assessed via self-report questionnaire.

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Appendix
Navy Performance Appraisals

Ratings of Record

Ratings of record for enlisted personnel and officers vary in format and availability. Enlisted personnel obtain a Performance Evaluation, which includes ratings of their professional (i.e., job relevant) and military (e.g., leadership, military bearing, counseling, directing) performance. A scale ranging from 1.0 to 4.0, with increments of .2, is used. Ratings are given for the individual factors as well as an overall performance rating (Block 39 of the Enlisted Performance Evaluation). The top rating is 4.0 and, due to performance inflation, many enlisted service members obtain a perfect 4.0 rating.

To obtain a better distinction among ratees, therefore, rating officers are required to rank the top half of enlisted personnel receiving 4.0 ratings. These rankings are subjective and emphasize performance in critical fields. To best reflect enlisted performance, it would be necessary to know the person's current overall evaluation mark, whether they were ranked, and, if ranked, their rank.

In addition to the lack of discrimination and subjectivity of the rating, availability of the ratings also presents a problem. Performance evaluations for E-1 through E-3 personnel are only available in locally maintained service records. E-4 records could be obtained from the Advancement Exam Worksheet, kept in records at NETPMSA, Pensacola, FL. Records of performance evaluation scores for E-5 through E-9 are in the Enlisted Master File, and, therefore, the most readily accessible. Service members' social security numbers would be required to link performance evaluation scores to QOL questionnaire responses.

Officer Fitness Reports

Officer Fitness Reports are completed for Officers and Warrant Officers. Letter grades of A through D are assigned. Warrant Officers are typically rated more frequently and at different points in time than Congressionally commissioned officers. Officers are rated on various factors and also receive an overall rating (Block 51 of the Officer Fitness Report). Information is also provided as to how other officers of the same rank, who are rated at the same time by the same person, are rated to provide a basis for comparison (Block 52).

Rankings for early promotions are provided for ranks of Captain, CDR, LCDR, CW04, CW03, and CW02 (Block 66). If desired, junior officers can be ranked on Block 88. Officers would readily know their rating (from Block 51), but may not be as aware of their rank, if they were ranked, as would enlisted personnel. In the current downsizing within the Navy, it would be reasonable to assume that virtually all officers on duty would hold an "A" performance rating. The Report on the Fitness of Officers do not become part of the service record but are held by Bureau of Personnel (PERS-32).

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