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This study was conducted to determine the level of job satisfaction among administrative employees at Eisenhower Army Medical Center. The Job Descriptive Index (a widely used survey instrument) was used to evaluate the satisfaction of EAMC employees. The following demographic information was obtained from all participants so that comparisons could be made of various demographic subgroups within the study population: department, age group, sex, employment status/classification, and race. In addition to subgroup comparisons, EAMC employees scores were compared to normative scores to determine if EAMC differed from national norms. ANOVA was the primary statistical test used to evaluate differences in employee satisfaction. The study concluded that there were significant differences in job satisfaction between demographic subgroups of employees at EAMC. Significant differences were noted in 20 of the 30 subgroup comparisons made. The most notable findings of the subgroup comparisons were that Nutrition Care employees scored significantly lower than employees from all other departments and black employees consistently scored lower than			
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white employees. The study further concluded that EAMC employees scored significantly lower than the national norms on all facets of job satisfaction evaluated by the JDI. The study resulted in the following recommendations: (1) Department chiefs should analyze the results of the survey and propose plans for improving employee satisfaction; (2) Educational programs should be used to enhance personal development of employees; (3) Community meetings should be held on a regular basis to keep employees informed and to solicit their ideas. (SDW)

A Study of Job Satisfaction
at
Eisenhower Army Medical Center

A Graduate Research Project
Submitted to the Faculty of
Baylor University
in Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration

by
Major Stanley C. Schmid, MS
June 20, 1987

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TABLE OF CONTENTS

LIST OF TABLES	iv
ACKNOWLEDGMENTS	v
CHAPTER 1	2
Introduction	2
Conditions Which Prompted the Study	3
Problem Statement	4
Objectives	5
Criteria	6
Assumptions	8
Limitations	8
Review of Literature	9
Importance of Job Satisfaction	9
Factors Related to Job Satisfaction	11
Value of Job Satisfaction Surveys	13
Methods of Measuring Job Satisfaction	14
Procedures for Administering Surveys	17
Research Methodology	18
References	27
CHAPTER 2	31
Findings and Discussion	31
Response to the Survey	31
Analysis of the Study Population	32
Job Satisfaction by Subgroups of	
Employees	34
Job Satisfaction by Job Facet	54
Comparison of EAMC Employee	
Satisfaction with Normative Data	55

Intercorrelation of Facets of the Job Descriptive Index	58
References	60
CHAPTER 3	62
Conclusions and Recommendations	62
Conclusions	62
Recommendations	65
Reference	68
BIBLIOGRAPHY	69
APPENDIXES	
A. Reliability and Validity of the Job Descriptive Index	76
B. Survey Instrument	79
C. Design and Scoring of the Job Descriptive Index	87
D. Normative Table for the Job Descriptive Index	90
E. Testing Differences in Sample and Population Proportions	92
F. Summary of Employee Comments	94
G. Testing Differences Between Proportions .	104
H. Comparison of Respondents and Nonrespondents by Demographic Variables	106
I. Sample Report of Results of the Survey. .	112

LIST OF TABLES

1 - Total Participation by Department	33
2 - Mean Job Facet Scores by Department	36
3 - Mean Scores by Department for Black Employees	38
4 - Mean Scores by Department for Wage-Grade Employees	39
5 - Mean Job Facet Scores by Age Groups	41
6 - Mean Job Facet Scores by Sex	43
7 - Mean Job Facet Scores by Employment Status and Classification	45
8 - Mean Job Facet Scores by Race	48
9 - Mean Scores by Race and by Employment Status and Classification	50
10 - Mean Scores by Race and Department	53
11 - Mean Job Facet Scores (Normative)	54
12 - Comparison of EAMC Scores with Normative Scores	57
13 - Comparison of EAMC Scores (Minus Nutrition Care Department) with Normative Scores	58
14 - Intercorrelations of JDI Facets	59
15 - Results of Subgroup Comparisons (ANOVA)	63

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CHAPTER 1

Introduction

Hundreds of books and thousands of articles have been written concerning the importance of job satisfaction. Studies have demonstrated that job satisfaction affects productivity, absenteeism, and turnover rate (Bechtold, Szilagyi, & Sims, 1980). Previous research indicates that it is desirable to have satisfied employees and that job satisfaction is related to organizational effectiveness (Seybolt & Walker, 1980). Many supervisors, however, know very little concerning the levels of job satisfaction experienced by their employees. This lack of knowledge prevents the supervisors from making or recommending changes which could enhance employee satisfaction and improve organizational effectiveness.

Many businesses, including hospitals, are using job satisfaction and employee opinion surveys to provide feedback to management concerning employee perceptions of the work environment. Seybolt and Walker (1980) report that satisfaction surveys can be a powerful tool for reversing turnover. Their study indicates that if management uses survey results to initiate needed changes, substantial benefits can be obtained from the survey and follow-up process. Woolf (1970) believes employee surveys can be an inexpensive method of obtaining valuable

information which can be used to effect administrative changes. Milbourn and Francis (1981) indicate that employee surveys can provide managers with information concerning specific areas of satisfaction and dissatisfaction so that needed changes can be made.

Conditions Which Prompted the Study

There were three significant conditions which prompted this study. First, Health Services Command (HSC) and Eisenhower Army Medical Center (EAMC) were striving to improve the self-image of their health care personnel. HSC had published guidance which stressed the importance of employee beliefs, attitudes, and perceptions and how these factors affected the public's view of the health care system (US Army Health Services Command, 1985). This guidance indicated that the work environment must be people-oriented and personnel should be challenged, rewarded, and fulfilled by their work. There was strong command emphasis at EAMC to improve its image, and efforts were being made to promote teamwork within the organization. There was also considerable command interest in obtaining feedback from employees which could be used to improve the work environment at EAMC. The Administration at EAMC was particularly interested in evaluating the job satisfaction of

administrative employees because personnel turnover in administrative areas had been higher than normally experienced and staffing shortages in these areas may have increased job pressures.

A second condition which prompted the study was a visit by the researcher to a civilian health care institution which regularly conducted employee surveys. The morale of the personnel in that hospital appeared to be very high, and their management felt one of the most significant reasons for the high level of morale was their regular use of employee surveys to obtain feedback and initiate changes.

The final condition which led to the study was the researcher's interest in the subject area. Having been a supervisor for over 10 years, the researcher had often requested feedback from subordinate personnel. These personnel had been very hesitant to make recommendations concerning organizational improvements or to complain about aspects of their jobs which caused dissatisfaction. The researcher believed that an employee opinion survey could serve as an effective tool for obtaining this desired feedback.

Problem Statement

The purpose of this study was to determine the level of job satisfaction among administrative department employees at Eisenhower Army Medical Center.

Objectives

The objectives of this study were to:

1. Complete a literature review pertinent to the following:
 - a. Importance of job satisfaction.
 - b. Factors related to job satisfaction.
 - c. Usefulness of job satisfaction surveys.
 - d. Measurement of job satisfaction.
 - e. Procedures for administering surveys.
2. Determine a study population.
3. Select the subgroups to be studied and determine a method for data collection.
4. Select an existing employee satisfaction survey which will be used in the study to measure job satisfaction.
5. Conduct the survey.
6. Analyze and interpret the results of the survey:
 - a. Determine if there are significant differences in job satisfaction between defined subgroups of employees. Employees were subgrouped according to (1) department, (2) age, (3) sex, (4) employment status and classification, and (5) race. These factors were chosen because studies have shown that these factors often impact on job satisfaction (Muchinsky, 1983). A discussion concerning the effects of these factors on job satisfaction is included in the literature review.

b. Determine if satisfaction levels are significantly different for various facets of job satisfaction (i.e., pay, promotions, supervision).

c. Determine if job satisfaction of employees surveyed is significantly different from normative satisfaction data which is based upon past research.

7. Make recommendations contingent upon the results of the study.

Criteria

The following criteria were established for the study:

1. The number of employees to be surveyed was to be greater than 200 but less than 400 personnel. The upper limit of 400 was established to control the amount of time required to administer the survey and compile the results. The lower limit of 200 participants ensured an ample sample size to support powerful statistical analysis of the survey (Elifson, Runyon, & Haber, 1982). (The power of a statistical test is the probability of rejecting the null hypothesis when it is indeed false and the power of a test is increased as the sample size increases.) Participation of 200 or more personnel also ensured that subgroups compared had an adequate number of participants to support meaningful comparisons. As a rule of thumb,

subgroups to be compared should have a minimum of 10 participants (R. DeMouy, personal communication, April 28, 1987).

2. All administrative departments with 30 or more personnel assigned were selected to participate in the survey. Administrative departments were selected for two major reasons. First, the Deputy Commander for Administration is directly responsible for these departments and he desired feedback concerning the job satisfaction of employees in his departments. He was concerned that staffing shortages in these areas may have adversely affected the job satisfaction of these employees. Second, numerous studies had been done on job satisfaction of clinical personnel in hospitals, but very few studies had been targeted at administrative personnel. This research was done in part to help fill the void in the literature on employee satisfaction in hospitals. The survey was limited to major departments (over 30 personnel assigned) because these departments provided the desired survey population (200-400 employees) and selection of only large departments ensured meaningful comparisons could be drawn between the departments (Elifson et al., 1982).

3. A number of criteria were utilized in selection of the employee satisfaction survey for the study.

First and most importantly, the survey selected for use was to have established validity and reliability. Also, the survey had to be suitable for measuring satisfaction of employees with a wide range of educational backgrounds including those with limited reading ability. In addition, it was desirable for participants to be able to complete the survey in 30 minutes or less. Finally, the survey instrument had to measure satisfaction with various facets of job satisfaction such as pay and supervision as well as serve as a measure of overall job satisfaction.

4. For all statistical tests utilized, data was considered to be statistically significant at the .05 level.

Assumptions

None.

Limitations

1. This study was limited to employees assigned within five administrative departments at EAMC and cannot be generalized to employees in other departments or medical facilities.

2. This study was the first of its kind conducted at EAMC and therefore, normative data which is specific to this organization was not available. For this reason, trends in employee satisfaction over time could not be evaluated.

Review of Literature

A thorough review of pertinent literature is an essential part of any research study. To conduct this study, it was important to review information concerning the following areas: importance of job satisfaction; factors related to job satisfaction; value of job satisfaction surveys; methods of measuring job satisfaction; and procedures to follow when administering surveys.

Importance of Job Satisfaction

According to Milbourn and Francis (1981), research findings consistently support the conclusion that job dissatisfaction increases absenteeism, turnover, and other costs. They further conclude that the precise relationship between job performance and job satisfaction is not clear-cut because a number of studies have shown little difference in productivity between satisfied and dissatisfied employees. Their conclusions are consistent with those found by Brayfield and Crockett (1955) and Vroom (1964).

In a recent study which utilized meta-analysis to evaluate past correlation studies, Petty, McGee, and Cavender (1984) conclude that job performance is positively correlated to job satisfaction. They believe

most previous studies have understated this relationship because of errors in sampling and measurement.

A number of studies concerning the importance of job satisfaction have been conducted in the hospital setting. Broski, Manuselis, and Noga (1982) conclude that job dissatisfaction in medical technology ultimately results in low morale, decreased productivity, and high turnover. Seybolt and Walker (1980) indicate job dissatisfaction is strongly related to employee turnover which is costly and disruptive to hospitals. Sanger, Richardson, and Larsen (1985) report that reduction of job dissatisfaction is essential to reduce personnel turnover.

After conducting a review of the literature concerning the effects of job satisfaction on job behavior, Muchinsky (1983) reached these conclusions: (a) job satisfaction and absenteeism are negatively correlated, but the magnitude of this correlation is not strong; (b) job satisfaction and turnover show a strong negative correlation, but other factors such as economics also have a significant impact on turnover; (c) job satisfaction and performance are somewhat related and most research supports the claim that performance causes satisfaction as opposed to satisfaction leading to performance.

Factors Related to

Job Satisfaction

Studies have shown that a number of factors impact on job satisfaction. Personal factors including age, sex, and race are often reported as modifiers of job satisfaction. Job-related factors such as salary level and status have also been linked to job satisfaction.

Studies evaluating the relationship between age and job satisfaction have produced mixed results. Hulin and Smith (1965) report that overall (global) job satisfaction is positively related to age. Saleh and Otis (1964) indicate job satisfaction increases with age until about age 60 and then begins to decline. Muchinsky (1983) reports that overall job satisfaction is positively correlated with age but that if various facets of job satisfaction are evaluated (i.e., pay, work, supervision), age affects these factors in different manners. As an example, Hunt and Saul (1975) report that satisfaction with promotion opportunities is negatively related to age.

Studies evaluating the relationship between sex and job satisfaction have also produced mixed feelings. Rahim (1982) cites some studies which show males to be more satisfied, other studies which indicate females to be more satisfied, and additional studies which show no difference in satisfaction between the sexes. Hulin and

Smith (1964) report that their studies consistently show women to be less satisfied with their jobs; but the authors believe these lower satisfaction levels are related to a constellation of factors, not just sex. Saucer and York (1978) conclude that females are slightly more satisfied with pay but less satisfied than males with work, promotions, supervision, and co-workers.

Most studies concerning differences in job satisfaction have shown small differences in job satisfaction between different races (Muchinsky, 1983). Weaver (1977) did extensive studies on differences in job satisfaction between blacks and whites. His findings indicate whites are more satisfied with their jobs overall; but although the differences in satisfaction are statistically significant, they are not very large.

Studies have consistently shown that high levels of income and status are associated with high job satisfaction (Herzberg, Mausner, Peterson, & Capwell, 1957). These findings are consistent with those of a recent study of the Armed Forces which indicate that officers have much higher levels of job satisfaction than enlisted personnel (Black, 1986).

Value of Job

Satisfaction Surveys

Job satisfaction surveys are most valuable in obtaining employees' feelings about their work circumstances (Barbash, 1976). Barbash reports that getting this information is only worthwhile if management is willing to make changes in response to the information received. He further states that information on overall levels of job satisfaction is not very useful, but that if the survey can be broken down into component parts (such as satisfaction with supervision, pay, etc.), its value is enhanced. His views are supported by Muchinsky (1983) who stresses the importance of evaluating the components of job satisfaction, not just global satisfaction.

The United States Army uses job satisfaction surveys on a regular basis to evaluate soldiers' opinions of their work environment (US Army Organizational Effectiveness Center and School, 1983). They believe surveys can only be valuable if managers are willing to review survey results and use them for decision-making purposes. If such commitment is present, the Army believes surveys can be a valuable source of information.

A number of hospitals have used job satisfaction surveys to obtain information from their employees concerning their workplace. Seybolt and Walker (1980)

believe attitude surveys can provide management with information to help them plan future actions to address problems identified by staff members. They administered a survey at Stanford University Medical Center, and they believe that actions taken based on survey results led to improvements in the operation of the hospital. Woolf (1970) says the effective use of information obtained from satisfaction surveys has improved productivity and reduced turnover and absenteeism in a number of hospitals.

Methods of Measuring

Job Satisfaction

There are basically two methods of measuring job satisfaction: (a) indirect measurement which uses such factors as productivity, turnover, and absenteeism to gauge job satisfaction; and (b) direct measurement which uses interviews and job attitude surveys to assess job satisfaction (Woolf, 1970). Woolf believes the indirect method requires too many assumptions and that the validity of this technique is very questionable. Muchinsky (1983) supports this premise and recommends job satisfaction surveys as the best method for measuring job satisfaction.

Through the years, a large number of surveys have been developed which claim to measure job satisfaction. Some of the surveys attempt only to measure overall job

satisfaction while other surveys measure various components of job satisfaction (Muchinsky, 1983).

One of the earliest surveys was developed by Hoppock (1935). His survey consists of four questions of which each has seven possible answers. Each question is valued equally, and the total satisfaction scores range from a low of 4 to a high of 28. This survey can be administered very quickly and results can be analyzed rapidly. Hoppock's survey instrument has often been used to help validate new survey instruments. A recent report (McNichols, Stahl, & Manley, 1978) supports the validity and reliability of Hoppock's survey and recommends its use in contemporary organizational settings.

The Job Descriptive Index (JDI), developed by Smith, Kendall, and Hulin (1969), has been widely used to measure job satisfaction. This index measures overall job satisfaction and five facets of job satisfaction. These facets are: satisfaction with the work itself, supervision, pay, promotions, and relationships with co-workers. According to Milbourn and Francis (1981), the JDI is the most well-known instrument for measuring job satisfaction. They believe several factors contribute to its wide use in addition to its strong validity and reliability. These factors include: its applicability to all types of jobs,

ease of administration and scoring, and the availability of normative data from which to make comparisons.

The Minnesota Satisfaction Questionnaire (MSQ), developed by Weiss, Dawis, England, and Lofquist (1967), has also been widely used to measure job satisfaction. This survey measures 20 facets of job satisfaction and consists of 100 questions. The primary advantage of the MSQ is it provides feedback on numerous aspects of satisfaction which may be of concern to management. The time required to take and analyze the test is probably the biggest disadvantage of using the MSQ.

Stamps, Piedmont, Slavitt, and Haase (1978) have developed a job satisfaction survey which is specifically designed to measure work satisfaction among health professionals. Their survey is called the Index of Work Satisfaction. It measures six facets of job satisfaction including autonomy, job status, pay, task requirements, interaction, and organizational requirements. It can be used with a weighted scale which values certain facets of job satisfaction more than others based on priorities indicated by the participant, or each facet can be given equal weight. Their research indicates the unweighted scale produces similar results and is much simpler to analyze. This view is supported by Ewen (1967) who found

correlations between weighted and unweighted scores to be as high as .99.

As discussed earlier, a wide variety of surveys have been used to measure job satisfaction. Muchinsky (1983) indicates that selection of a survey instrument for use should be based on what one wants to find out from the survey. Any survey instrument chosen must have demonstrated reliability and validity. After reliability and validity are established, selection can be made based on the needs and resources of the organization.

Procedures for

Administering Surveys

Once it has been decided to conduct a survey and a survey instrument has been selected, the next important step is to administer the survey. This is not a simple process, and poor planning for the administration of the survey can cause a number of problems and limit the survey's value (Williams, Seybolt, & Pinder, 1975).

Some of the major concerns include the designation of the site for the survey, the proper introduction of the survey, the assurance of anonymity for the participants, and the scheduling of multiple administrations of the survey to ensure maximum participation.

Ernest and Baenen (1985) state that surveys can fail to achieve their purposes because of failure on

the part of the administrator to gain the cooperation and support of supervisors. Supervisors should be well informed concerning the purposes of the survey and its potential benefits. Without their support, a valid and meaningful survey cannot be completed.

Many researchers have discussed the importance of maintaining the anonymity of participants. Seybolt and Walker (1980) stress the importance of guaranteeing anonymity to participants because without this guarantee, employees will be discouraged from participating and their answers will be biased. Barbash (1976) also believes surveys must be voluntary and anonymous for the data to be valid. Woolf (1970) recommends the use of consultants to administer the survey, analyze the results, and help assure the anonymity of the responses.

After reviewing the information above, it is clear that proper administration of a job satisfaction survey is essential to achieve reliable and valid feedback from the survey. If the administrator fails to properly plan for the conduct of the survey, much effort will be wasted with little or no gain realized.

Research Methodology

1. The study population included all employees assigned to the following departments at EAMC:

<u>DEPARTMENT</u>	<u>NUMBER OF PERSONNEL</u>
Logistics	89
Nutrition Care	81
Patient Administration	88
Pharmacy	44
Information Management	<u>47</u>
	349 Total

The study population represented all administrative departments with 30 or more personnel assigned and the Pharmacy Service. The Pharmacy Service is technically a clinical service, but a great deal of its functions are administrative in nature and the Deputy Commander for Administration requested that it be included in the study. The study population was within the 200-400 size range identified in the criteria, and this size sample and the department sizes (all over 30 personnel) enabled meaningful comparisons to be made between subgroups within the study population (Elifson et al., 1983).

2. The following demographic information on participants in the study was gathered: (a) department, (b) age group, (c) sex (d) employment status and classification (i.e., military/E1-E5), and (e) race. This information enabled data to be subgrouped so that comparisons could be made of the job satisfaction of

various subgroups within the study population. These comparisons provided much more useful information for consideration than summary data alone would have provided. (As an example, if it is known only that 50 personnel are unhappy with their supervision, there is probably little which could be done with this information. However, if it is known that 40 of the 50 personnel who are unhappy with their supervision are from the same department, corrective action can be targeted toward this department.) Demographic information was not used to attempt to identify individual respondents to the survey.

3. The survey instrument used for the study was the Job Descriptive Index (JDI) developed by Smith et al. (1969). The JDI was selected because its reliability and validity are well established and its design ideally met the requirements of this study. Smith et al. (1969) did extensive studies over a 10-year period which clearly establish the JDI as a reliable and valid measure of job satisfaction. An extensive discussion concerning the reliability and validity of the JDI is presented as Appendix A. The JDI measures employee satisfaction with the job in general and with five facets of job satisfaction including satisfaction with the work itself, supervision, pay, promotions, and relationships with work associates. Normative scores have been established for the five facets

of job satisfaction measured by the JDI. These scores are based on extensive testing of the JDI primarily in industrial plants. (Unfortunately, normative scores specific to administrative personnel are not available.) The JDI is a 90-item survey which normally requires only 10-20 minutes to complete and is designed to be suitable for use by employees with a wide range of educational backgrounds including those with limited reading ability. The JDI is copyrighted and it was purchased from Bowling Green State University. The complete survey used at EAMC is enclosed as Appendix B. It includes an introduction to the survey, a request for demographic information, the JDI, and a form for additional comments from employees. Information on the design and scoring of the JDI is presented in Appendix C.

4. The study was conducted during the month of January 1987. Prior to this time, briefings were held with departmental chiefs to discuss the purposes of the survey and to gain their support. The survey was administered in the auditorium and in the dining facility at EAMC. The survey schedule was distributed to all departmental personnel. Six administrations of the survey were scheduled and conducted during the first three weeks of January 1987. Additional administrations were conducted at times and locations requested by employees to ensure

that all those who desired to participate had an opportunity to do so. Participation in the survey was voluntary, but it was encouraged. Participants were given a short briefing outlining the purposes of the survey and stressing the anonymous nature of the survey. They were then given an opportunity to ask questions prior to completing the survey. Employees who desired to complete the survey at home were provided stamped envelopes addressed for return to the researcher.

5. Once the surveys were completed, the researcher separated employee comments (Part III) from the remainder of the survey. The comments in Part III were provided to the Deputy Commander for Administration for his review, and a summary of written comments was prepared. The remainder of the survey was manually scored by the researcher with assistance from personnel in EAMC Headquarters. This assistance did not prejudice the anonymity of the survey because employees did not place their names on the surveys. Assistants were thoroughly trained on scoring procedures and were closely monitored to ensure accuracy of scoring. Raw JDI scores were determined for the five facets of job satisfaction being measured and overall job satisfaction (job in general). In addition, normative scores were determined for the five facets of job satisfaction by converting raw scores using a normative table prepared

by Smith et al. (1969). Appendix D presents the table which was used to convert raw scores to normative scores. A normative scale is not available for overall job satisfaction; therefore, normative scores for this measure of job satisfaction could not be determined.

6. At the completion of the scoring of the surveys, 16 items of information were available from each completed survey. The first five items related to the answers to the demographic questions. The next six items were the raw scores on the JDI, and the final five items of information were the normative JDI scores. The investigator entered these survey results into a computer data base for convenient statistical analysis.

7. Survey results were then analyzed using manual techniques, LOTUS 1-2-3, and the Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrunner, & Brent, 1975) to determine the following:

a. Were there significant differences in job satisfaction between defined subgroups of employees? Employees were subgrouped according to department, age, sex, employment status and classification, and race. Differences in job satisfaction by facet between subgroups were evaluated by comparing their mean satisfaction scores using Analysis of Variance (ANOVA). Raw scores were used for these comparisons. This test determined if some

subgroups were significantly more or less satisfied than others. For example, it compared results from employees in the five departments to determine if satisfaction scores between departments differed significantly. Data was considered to be statistically significant at the .05 level.

b. Were there significant differences in employee satisfaction between various facets of job satisfaction? As an example, were our employees significantly more or less satisfied with their pay than they were with the other facets being measured? Since evaluations of the JDI have shown that raw scores for the various facets are not directly comparable across facets (Smith et al., 1969), normalized scores were used for these comparisons. Differences in job satisfaction between facets were evaluated by comparing their mean satisfaction scores using ANOVA.

c. Were there significant differences in job satisfaction of EAMC employees when compared to the normative sample? Normative scores have been established for the five facets of job satisfaction measured by the JDI. These scores are based on testing of the JDI on approximately 2500 workers who worked primarily in the industrial setting. (It would have been preferable to compare results with a more appropriate comparative

sample of administrative personnel. Unfortunately, normative scores specific to administrative personnel are not available.) In order to make these comparisons, the proportion of employee normative scores, by facet, which equal or exceed the 50th percentile was tested to determine if this proportion significantly differed from .5. By definition, the proportion of the normative population which equals or exceeds the 50th percentile is .5 for all facets. A two-tailed z test for testing differences between sample and population proportions was used. This test is presented and discussed in Appendix E. Data was considered to be statistically significant at the .05 level. Results indicated whether or not job satisfaction of our employees was significantly higher or lower than the normative population. These relationships were tested for all five facets of job satisfaction.

d. Raw scores for the five facets of job satisfaction and the job in general were correlated to determine if a significant relationship exists between these scores. This test indicated whether employees who scored high (or low) on one facet of the JDI tended to score high or low on other facets of the JDI. Pearson product-moment correlations were used for this evaluation

(Norusis, 1984). Data was considered to be statistically significant at the .05 level.

The research methodology detailed above indicates how the study was conducted and how the results were evaluated. The next chapter presents the findings of the study and a discussion of the findings.

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CHAPTER 2

Findings and Discussion

Response to the Survey

Three hundred forty-nine personnel were invited to participate in the survey. This number represents all personnel assigned to the five participating departments. Two hundred sixty-three personnel responded to the survey for an overall response rate of 75.4%. This response rate is very similar to rates reported by Lemler and Leach (1986) and Woolf (1970) for their voluntary employee opinion surveys.

Out of 263 surveys which were returned, 23 (8.7%) were incomplete (Parts I and II were not completed in their entirety) and could not be used in the analysis. Thus, responses from 240 (68.8%) out of the 349 personnel assigned were used in the survey analysis. Of the 263 personnel who returned surveys, 127 (48.3%) wrote comments (optional) in Part III of the survey. A summary report which discusses comments made on Part III of the survey is presented in Appendix F.

The number of incomplete surveys returned was unexpectedly high. One of the reasons the JDI was selected as the survey instrument was its simplicity. Precise written instructions were provided on how to complete the survey, and these instructions were verbally reiterated

by the survey administrator. Despite these safeguards, 23 surveys were still returned incomplete. The errors of completion were of three types. First, 19 participants failed to respond to a number of questions on the JDI. Most of this group only responded to one question on each page. Second, two participants failed to complete the demographic questions on the survey (Part I). Table I depicts the participation in the survey by department and breaks down participants who completed and failed to complete the survey. From reviewing this table, it is apparent that most of the personnel (17 out of 23) who failed to complete the survey were assigned to the Nutrition Care Directorate. The Chief of Nutrition Care had indicated prior to the administration of the survey that a number of her employees might have problems with the survey because of their limited reading ability. Therefore, a few were assisted by their co-workers in reading the survey, but a number who either did not understand the instructions or could not read the questions attempted to complete the survey.

Analysis of the Study Population

Respondents and nonrespondents were compared for differences in demographic variables to include: department, age, sex, employment status and classification

TABLE 1
Total Participation by Department

	Logistics	Nutrition Care	Patient Administration	Pharmacy	Information Management	Unknown	Total
Assigned	89	81	88	44	47		349
Participated in Survey	70	63	64	24	40		263
% Participated	78.6	77.8	72.7	54.5	85.1		75.4
Completed Survey	69	46	63	24	38		240
% Completed	77.5	56.8	71.6	54.5	80.9		68.8
Failed to Complete Survey	1	17	1	0	2	2*	23
% Failed to Complete	1.1	21.0	1.1	0	4.2		6.6

*Two participants did not complete the demographic portion of the survey and therefore, their departments are unknown.

and race. The demographic characteristics of the employees assigned to each department were obtained from the department chiefs. The answers to the demographic questions provided the demographic characteristics of the respondents to the survey. The demography of the nonrespondents was obtained by subtraction analysis.

For the purposes of this analysis, respondents were defined to be personnel who successfully completed the survey. A chi-square test for the differences between proportions was used to determine if significant differences in response rates were present (see Appendix G). Response rates did vary according to demographic characteristics. Of the five variables analyzed, three showed significant differences at the .05 level. These variables were department, age, and race. As with the studies by Smith, Kendall, and Hulin (1969), the bias caused by differences in participation could not be specifically determined. A detailed discussion of the results of the comparisons of respondents and nonrespondents is presented in Appendix H.

Job Satisfaction by Subgroups of Employees

Differences in satisfaction by job facet between subgroups of employees were evaluated using Analysis of Variance (ANOVA). Employees were subgrouped according to department, age, sex, employment status and classification,

and race. When significant differences were noted between subgroups, Tukey's Honestly Significant Difference (HSD) tests were performed to specify which subgroups significantly differed (Norusis, 1984). Results were considered to be statistically significant at the .05 level. Mean raw scores for the five facets of job satisfaction and the job in general were used for this analysis. The results of the analysis are presented in this section by demographic variables.

By Department

Significant differences in job satisfaction between departments were evident for three of the five facets of job satisfaction evaluated and the job in general. Results of these evaluations are presented in Table 2.

The mean satisfaction scores for the present job facet and the job in general both differed significantly by department. Results of Tukey's HSD revealed an identical pattern of differences between departments for these facets. In both cases, the mean score for Information Management was significantly higher than the mean scores for Nutrition Care, Pharmacy, and Patient Administration. Also, the mean score for Logistics was significantly higher than mean scores for Nutrition Care and Pharmacy. No other significant differences were noted.

TABLE 2

Mean Job Facet Scores by Department

Job Facet	Information Management			Patient Administration		Pharmacy	Nutrition Care		Total	F-Ratio ^a	p Value ^b
	Management	Logistics	Administration	Administration	Administration		Care	Care			
Present Job	31.6	28.5	23.4	21.8	19.6	25.3	6.84	.0001			
Present Pay	24.3	21.8	18.5	19.9	16.4	20.1	2.12	.0791			
Promotion	15.0	14.4	10.7	11.3	11.0	12.6	1.11	.3505			
Supervision	38.7	33.1	33.1	39.5	21.5	32.4	7.66	.0001			
People	37.4	34.0	34.3	37.4	26.1	33.5	3.87	.0046			
Job in General	40.2	35.3	32.1	23.3	26.1	32.3	7.53	.0001			
Number of Participants	38	69	63	24	46	240					

^aCritical value of F-ratio is 2.37 for the .05 level of significance with 4 DF for the numerator and 235 DF for the denominator.

^b_p value is the likelihood of obtaining results this extreme or more extreme if there are no actual differences in the means of the groups.

The mean satisfaction scores for the supervision and people facets also differed significantly by department. Specific departmental differences identified by Tukey's HSD also revealed an identical pattern for those facets. In both cases, the mean score for the Nutrition Care was significantly lower than the mean scores for all other departments. No other significant differences were noted. Departmental differences in mean satisfaction scores for the present pay and promotion facets were not significant.

Discussion of departmental comparisons. The analysis of scores by department indicated Nutrition Care personnel were much less satisfied with their jobs than personnel from other departments. This relationship was particularly apparent for the supervision and people facets for which Nutrition Care mean scores were significantly lower than all other departments. Since Nutrition Care had a higher proportion of blacks and wage-grade personnel than the other departments and since these subgroups also scored lower on the JDI than their counterparts (as will be reported later), it was felt that more study was appropriate to determine if these demographic factors may have biased the results of the departmental comparisons. Table 3 displays mean scores by department for black employees. From reviewing this table, it is evident that black employees

in Nutrition Care consistently scored lower than black employees in all other departments. Likewise, Table 4 shows that wage-grade employees in Nutrition Care consistently scored lower than wage-grade employees in all other departments. These results indicate that departmental differences in job satisfaction, not simply the higher proportions of blacks and wage-grade personnel, explain low scores by Nutrition Care personnel. A hospital study reported by Dunn and Stephens (1972) also indicated Nutrition Care employees had the lowest mean scores of any department in the hospital. Their study also used the JDI to evaluate employee satisfaction.

TABLE 3

Mean Scores by Department for Black Employees

	Information Management	Logistics	Patient Adminis- tration	Pharmacy	Nutrition Care	Total
<u>Facet</u>						
Present Job	31.6	25.3	18.8	33.6	14.4	20.9
Present Pay	20.0	17.0	14.8	25.6	9.8	14.6
Promotion	12.6	15.2	7.9	15.6	8.9	10.6
Supervision	40.0	29.4	25.5	40.0	15.8	24.9
People	37.0	31.7	35.6	48.2	18.0	29.0
Job in General	42.6	34.3	28.0	43.0	18.3	28.2
Number of Participants	3	22	14	5	25	69

TABLE 4
Mean Scores by Department for Wage-Grade Employees

	Information Management	Logistics	Patient Adminis- tration	Pharmacy	Nutrition Care	Total
<u>Facet</u>						
Present Job	19.0	23.7	25.0		14.0	18.4
Present Pay	39.0	25.1	10.0		10.0	17.0
Promotion	12.0	12.6	19.0		6.1	9.4
Supervision	22.5	26.1	43.5		13.6	20.1
People	22.5	36.1	42.0		19.4	26.9
Job in General	39.5	34.7	38.0		20.7	27.6
Number of Participants	2	18	2	0	25	47

By Age

Significant differences in job satisfaction were evident for two of the five facets of job satisfaction and for the job in general. Results of these comparisons are presented in Table 5.

Mean satisfaction scores for the promotion facet differed more significantly than any other facet ($p = .0015$). Tukey's test indicated the mean score for the 24-and-under

group was significantly higher than the mean scores for all other groups except the 35 - 44 group. No other significant differences were noted.

The job in general yielded the next most significant differences ($p = .0091$). Tukey's test revealed the mean score for the 25 - 34 group was significantly lower than the mean scores for the 35 - 44 and the 45 - 54 groups. No other significant differences were noted.

Mean satisfaction scores for the present job facet also differed significantly ($p = .0061$). The only significant difference identified by Tukey's HSD was the higher mean score for the 45 - 54 group when compared to the 25 - 34 group. Age group differences in mean satisfaction scores for the present pay, supervision, and people facets were not statistically significant at the .05 level.

Discussion of age group comparisons. The analysis of scores by age group produced some interesting results (Table 5). The 24-and-under group had the highest mean scores for promotions, supervision, and people; but the group's mean scores for present job and job in general were lower than the overall (total) mean scores for these facets.

The 25 - 34 group had the lowest mean score on all facets evaluated except supervision and promotion for which

TABLE 5
Mean Job Facet Scores by Age Groups

Facet	24 and Under			45-54			55 and Above			F-Ratio*	p Value
	25-34	35-44	Total	25-34	35-44	Total	25-34	35-44	Total		
Present Job	24.3	21.2	24.8	29.8	27.6	25.3	3.70			.0061	
Present Pay	21.8	17.0	20.9	20.9	22.4	20.1	1.16			.3272	
Promotion	20.6	9.9	15.4	10.6	8.5	12.6	4.55			.0015	
Supervision	35.4	31.4	32.8	33.6	28.2	32.4	.66			.6208	
People	38.8	33.5	30.6	33.2	37.1	33.5	1.62			.1687	
Job in General	30.7	26.9	34.6	36.4	31.8	32.3	3.46			.0091	
Number of Participants	23	65	70	58	24	240					

*Critical value for the .05 level of significance with 4 DF in the numerator and 235 DF in the denominator is 2.37.

they had the second lowest mean scores. The 35-44 group's mean scores were neither the highest nor the lowest on any facet, and the group's mean scores varied little from the overall mean scores. The 45-54 group had the highest mean scores for present job and job in general, but the group's mean scores for promotions and people were lower than the overall mean scores for these facets. The 55-and-above group had the highest mean score for present pay but had the lowest mean score for supervision. The results of this analysis were consistent with findings by Muchinsky (1983) which indicated age affects various factors of job satisfaction in different ways.

By Sex

ANOVA testing indicated significant differences in job satisfaction were present for two of the job facets evaluated (see Table 6). Scores for males were significantly higher than female scores for the supervision and promotion facets. Sex group differences in mean satisfaction scores for all other job facets and the job in general were not significant.

Discussion of sex group comparisons. Mean scores for males were higher than females for all job facets except present pay for which both were identical. Differences were relatively small and statistically insignificant for all facets except supervision

and promotion. The relatively low mean score for females on the supervision could be related to females having greater expectations of supervisors than males or perhaps some supervisors relate differently to female subordinates than they do to males. Lower scores by females on the promotion facet may indicate that many females believe they are in deadend jobs with little or no advancement potential.

TABLE 6
Mean Job Facet Scores by Sex

	Male	Female	Total	F-Ratio*	p Value
<u>Facet</u>					
Present Job	26.1	24.6	25.3	.8642	.3535
Present Pay	20.1	20.1	20.1	.0001	.9994
Promotion	15.0	10.5	12.6	6.64	.0106
Supervision	35.6	29.7	32.4	7.16	.0080
People	34.6	32.5	33.5	1.09	.2983
Job in General	32.7	31.9	32.3	.13	.7222
Number of Participants	110	130	240		

*Critical value for the .05 level of significance with 1 DF in the numerator and 238 DF in the denominator is 3.84.

By Employment Status
and Classification

Significant differences in job satisfaction by employment status and classification were identified for all five facets of job satisfaction and the job in general (see Table 7). The results of Tukey's HSD tests are presented below by job facet.

The mean score for wage-grade personnel on the present job facet was significantly lower than the mean scores for GS7s and below, GS8s and above, and E6s-E9s. (Even though the mean score for officers was identical to the mean score for GS7s and below, the difference between the mean scores for the wage-grade group and officers was not significant because of the relatively small sample size of officers.) In addition, the mean score for E1s-E5s was significantly lower than the mean scores for GS7s and below and GS8s and above. No other significant differences were noted.

For the present pay facet, the mean score for E6s-E9s was significantly higher than the mean scores for E1s-E5s, wage grade, and GS7s and below. No other significant differences were noted.

There were several significant relationships identified on the promotion facet. The mean score for E6s-E9s was significantly higher than the mean scores for GS7s and below, GS8s and above, wage grade, and E1s-E5s. In addition, the

TABLE 7
Mean Job Facet Scores by Employment Status and Classification

Facet	Civilian GS7 and Below	Civilian GS8 and Above	Civilian Wage Grade	Military Enlisted E1-E5	Military Enlisted E6-E9	Military Officers	Total	F-Ratio*	p Value
Present Job	27.8	30.2	18.4	20.7	30.4	27.8	25.3	6.21	.0001
Present Pay	20.2	22.7	17.0	14.6	30.2	24.9	20.1	4.46	.0007
Promotion	9.9	10.3	9.4	14.0	25.9	21.3	12.6	7.69	.0001
Supervision	34.0	36.4	20.1	31.8	40.2	44.8	32.4	8.79	.0001
People	35.4	33.5	26.9	34.2	33.5	39.3	33.5	2.57	.0273
Job in General	35.1	31.4	27.6	28.4	38.4	31.9	32.3	2.63	.0246
Number of Participants	95	24	47	38	20	16	240		

*Critical value for the .05 level of significance with 5 DF in the numerator and 234 DF in the denominator is 2.21.

mean score for officers was significantly higher than mean scores for GS7s and below, GS8s and above, and wage grade.

For the supervision facet, the mean score for wage-grade personnel was significantly lower than mean scores for all other groups. No other significant differences were noted.

The only significant relationship identified for the people facet was that the mean score for the GS7s-and-below group was significantly higher than the mean score for the wage-grade group.

For the job in general, the following significant relationships were identified. The mean score for E6s-E9s was significantly higher than the mean scores for GS8s and above, wage grade, E1s-E5s, and officers. Also, the mean score for GS7s and below was significantly higher than the mean scores for wage grade and E1s-E5s.

Discussion of employment status and classification comparisons. Wage-grade personnel had the lowest mean scores for all facets of job satisfaction evaluated except present pay for which they had the second lowest mean score. The mean score for wage-grade personnel on supervision was substantially lower than mean scores for all other groups which indicates wage-grade personnel were much less satisfied with their supervision than the other groups. The E6-E9 group

had the highest mean scores for present job, present pay, promotion, and job in general. Officers had the highest mean scores for supervision and people. Somewhat surprisingly, GS8s and above had a relatively low mean score (10.3) for the promotion facet even though most have received numerous promotions during their careers. The relatively higher mean scores achieved by E6s-E9s and officers were consistent with findings of other studies which have shown that high levels of income are associated with high job satisfaction (Herzberg, Mausner, Peterson, & Capwell, 1957; Smith, Kendall, & Hulin, 1969).

By Race

ANOVA testing indicated there were significant differences (at the .05 level) in job satisfaction between racial groups for four of the five facets of job satisfaction and for the job in general (see Table 8). Results of these comparisons are presented below.

The mean satisfaction scores for the present job facet and the job in general both differed significantly by racial group. In both cases, Tukey's test indicated whites had significantly higher mean scores than both blacks and others. There was not a significant difference between the mean scores for blacks and others for these facets.

TABLE 8
Mean Job Facet Scores by Race

Facet	White	Black	Other	Total	Critical Value*	F-Ratio	p Value
Present Job	27.8	21.0	19.6	25.3	3.00	8.64	.0002
Present Pay	22.7	14.7	18.3	20.1	3.00	8.22	.0004
Promotion	13.5	10.6	12.4	12.6	3.00	1.05	.3518
Supervision	35.8	24.9	32.0	32.4	3.00	10.10	.0001
People	35.4	29.0	33.5	33.5	3.00	4.23	.0156
Job in General	34.4	28.2	28.9	32.3	3.00	4.17	.0166
Number of Participants	155	69	16	240			

*Critical value for the .05 level of significance with 2 degrees of freedom in the numerator and 237 degrees of freedom in the denominator.

Significant differences were also identified for the present pay and people facets. For these facets, Tukey's test indicated mean scores for whites were significantly higher than mean scores for blacks. No other significant differences were noted.

Mean satisfaction scores for supervision facet also differed significantly by racial group. The mean scores for whites and others were both significantly higher than the mean score for blacks. There was not a significant difference between the mean scores for whites and others. Racial group differences in mean satisfaction scores for the promotion facet were not significant.

Discussion of racial group comparisons. The analysis of scores by racial groups indicates blacks were much less satisfied than whites on all job satisfaction facets except the promotion facet. On the promotion facet, mean scores for all groups were low, indicating all groups were dissatisfied with promotions. In general, the "other" group was more satisfied than blacks but less satisfied than whites. Since earlier results showed that department and employment status had significant influence on satisfaction, it was felt that more study was needed to determine how these factors may have influenced the racial group comparisons. Table 9 displays mean scores by race and employment status.

TABLE 9

Mean Scores by Race and by Employment Status and Classification

<u>Employment Status & Classification</u>	<u>Race</u>	<u>Facets</u>					Number of Participants
		Present Job	Present Pay	Promotion	Supervision	People General	
GS7 and Below	White	29.2	21.4	9.7	35.4	36.2	70
	Black	24.0	17.0	11.0	30.2	32.6	23
	Other	20.0	15.0	4.0	28.5	39.0	2
GS8 and Above	White	31.1	24.1	10.9	38.6	35.8	19
	Black	24.2	10.5	2.5	18.0	17.5	4
	Other	22.5	23.0	15.0	38.5	41.5	2
Wage Grade	White	22.5	23.3	10.4	22.4	32.3	21
	Black	15.2	12.4	9.0	18.9	21.4	24
	Other	19.0	10.0	2.0	10.0	38.0	1
E1-E5	White	23.2	16.1	18.0	37.0	34.9	19
	Black	19.4	15.2	12.0	20.8	34.0	11
	Other	16.3	10.0	7.3	34.5	32.6	8
E6-E9	White	31.6	33.3	25.1	42.8	33.6	12
	Black	29.6	15.6	23.2	39.4	38.0	5
	Other	26.3	42.0	33.3	30.6	25.3	3

(Table continues)

TABLE 9 (continued)

Mean Scores by Race and by Employment Status and Classification

		<u>Facets</u>						
		Present		Promotion	Supervision	People	Job in	Number of Participants
		Job	Pay				General	
<u>Employment Status & Classification</u>	<u>Race</u>							
Officers	White	26.8	25.8	23.8	46.0	37.5	30.1	14
	Black	34.5	18.0	3.0	36.0	51.0	44.0	2
	Other							0
Total	White	27.8	22.7	13.5	35.8	35.4	34.4	155
	Black	21.0	14.7	10.6	24.9	29.0	28.2	69
	Other	19.6	18.3	12.4	32.0	33.5	28.9	16

Out of the 36 comparisons (does not include a "total" category) presented in Table 9, 30 of the mean scores were higher for whites. For the comparisons involving civilians and lower enlisted personnel, 23 out of 24 mean scores were higher for whites than blacks.

Table 10 presents mean scores by race and department. Thirty comparisons for blacks and whites are presented (not including a "total" category). For 20 of these comparisons, mean scores for whites were higher than mean scores for blacks. All six mean scores for whites in Nutrition Care were substantially higher than mean scores for blacks in this department. Other departments showed much smaller differences in satisfaction by race. Blacks in the Pharmacy had higher mean scores than whites for five of the six comparisons. Interestingly, the Pharmacy was the only department surveyed which had a black department chief. Although there were some exceptions, the results of the "by department" and "by employment" status comparisons of the racial groups support the finding that blacks were less satisfied with their jobs than whites.

Results of this study revealed larger differences in job satisfaction between blacks and whites than are generally reported (Muchinsky, 1983; Weaver, 1977). These authors indicate most studies have shown blacks to be less satisfied than whites but only slightly less satisfied.

TABLE 10
Mean Scores by Race and Department

Department	Race	Facet					Job in General	Number of Participants
		Present Job	Present Pay	Promotion	Supervision	People		
Logistics	White	30.5	23.7	13.7	34.6	35.6	36.0	45
	Black	25.3	17.0	15.2	29.4	31.7	34.3	22
	Other	18.5	30.0	19.0	39.5	21.0	26.5	2
Nutrition Care	White	26.0	23.7	14.7	28.8	36.7	35.1	18
	Black	14.4	9.8	8.9	15.8	18.0	18.3	25
	Other	23.6	27.3	23.3	24.0	29.0	36.3	3
Patient Adminis- tration	White	25.0	20.3	11.8	34.6	33.2	33.1	44
	Black	18.8	14.8	7.9	25.5	35.6	28.0	14
	Other	21.2	12.4	8.8	41.2	41.4	34.6	5
Pharmacy	White	20.5	20.2	10.5	42.3	36.7	29.9	16
	Black	33.6	25.6	15.6	40.0	48.2	43.0	5
	Other	8.7	8.7	8.7	23.0	22.6	8.7	3
Information Management	White	32.2	25.0	16.0	39.5	36.8	40.5	32
	Black	31.6	20.0	12.6	40.0	37.0	42.6	3
	Other	24.6	20.6	6.7	28.6	44.0	34.0	3
Total	White	27.8	22.7	13.5	35.8	35.4	34.4	155
	Black	20.9	14.6	10.6	24.9	29.0	28.2	69
	Other	19.6	18.3	12.4	32.0	33.5	28.9	16

Job Satisfaction by Job Facet

Differences in job satisfaction by job facet were evaluated using ANOVA. Normative (standard) scores were used for these comparisons since raw scores are not directly comparable across facets (Smith et al., 1969). Table 11 presents the normative mean scores by facet and the results of the ANOVA testing. The results of the ANOVA testing indicated the mean normative scores for the job facets differed significantly at the .05 level. Tukey's HSD test was completed to specify which mean facet scores differed significantly from each other. The results of this test indicated the mean score for the present job facet was significantly lower than mean scores for all other facets. Also, the mean score for the supervision facet was significantly higher than the mean scores for the promotion and pay facets. No other significant differences were noted.

TABLE 11
Mean Job Facet Scores (Normative)

Present Job	28.9
Present Pay	35.1
Promotion	34.1
Supervision	40.2
People	35.7

n = 240 for each job facet

F-ratio = 4.08

$p < .01$

Critical Value for .05 level of significance
with 4 DF in numerator and 1195 DF in denominator
is 2.37

Discussion of Results of

"by Facet" Comparisons

The analysis of normative scores by facet indicated that on a relative basis, EAMC employees were less satisfied with work on their present job than they were with all other job facets measured. This means that when the raw scores for the present job facet were compared to established norms for this facet, the resultant normative scores were lower for this facet than for similar comparisons for the other facets. These results were somewhat surprising since pay raises in recent years in the federal sector have not kept pace with inflation and there is a common perception that promotion opportunities are very limited at EAMC. These results do not indicate EAMC employees were satisfied with their present pay and promotion opportunities, but they were relatively more satisfied with these facets than with their present job. A discussion of how EAMC employee scores compared with other workers who have taken the JDI previously is presented in the next section.

Comparison of EAMC Employee

Satisfaction with Normative Data

Job satisfaction of EAMC employees was compared with normative data by using a two-tailed z test for testing differences between sample and population proportions (Freund & Williams, 1977) (see Appendix E). The proportion

of employee normative scores by facet which equaled or exceeded the 50th percentile was tested to determine if this proportion was significantly different from .5 (which is, by definition, the proportion of the normative population which equals or exceeds the 50th percentile). Results of these tests are presented in Table 12. The test results indicate EAMC employees scored significantly lower than the normative population for all facets of job satisfaction measured. Since normative scores for the JDI are based on surveys conducted primarily in the industrial setting, as opposed to the hospital setting, the results of the above tests must be carefully reviewed. The normative scales used for this analysis were the most appropriate available but were less than ideal. From the results, it can be concluded only that administrative employees at Eisenhower Army Medical Center were less satisfied with their jobs than employees from the industrial setting. Conclusions concerning how EAMC administrative employees compare with administrative employees from other hospitals cannot be clearly drawn because of the limitations of the normative scales used. Three studies (Dunn & Stephens, 1972; Mobley, Horner, & Hollingsworth, 1978; Broski, Manuselis, & Noga, 1982) in the literature indicate hospital personnel scores were slightly below the JDI norms but not nearly as low as the Eisenhower results. Studies specific to administrative

employees in hospitals were not found. However, this and future studies provide baseline data for formulation of normative values for administrative employees in the hospital setting.

TABLE 12
Comparison of EAMC Scores
with Normative Scores

Facet	# Employees At or Above 50th Percentile	Proportion At or Above 50th Percentile	$\bar{z}$ Value	p
Present Job	65	.271	-7.10	<.0001
Present Pay	78	.325	-5.42	<.0001
Promotion	68	.283	-6.71	<.0001
Supervision	93	.388	-3.48	.0006
People	75	.313	-5.81	<.0001

Critical value for $\bar{z}$ at .05 level of significance is ± 1.96

$n = 240$ for all facets

Since the Nutrition Care employee scores were significantly lower than the scores from all other departments, there was a concern that the relatively low scores for employees in this department may have unduly influenced the normative comparisons. Table 13 displays the results of comparing satisfaction of employees in all departments except Nutrition Care with normative data. The results of these tests again indicate

Eisenhower employees scored significantly lower than the normative population for all facets measured. Thus, it can be concluded that the low satisfaction scores for Nutrition Care employees did not unduly influence the normative comparisons.

TABLE 13
Comparison of EAMC Scores (Minus Nutrition
Care Department) with Normative Scores

	# Employees At or Above 50th Percentile	Proportion At or Above 50th Percentile	$\bar{z}$ Value	p
<u>Facet</u>				
Present Job	57	.293	-5.75	< .0001
Present Pay	66	.340	-4.45	< .0001
Promotion	58	.299	-5.60	< .0001
Supervision	83	.428	-2.01	.0444
People	66	.340	-4.45	< .0001

Critical value for $\bar{z}$ at .05 level of significance is ± 1.96

$n = 194$ for all facets

Intercorrelation of Facets of
the Job Descriptive Index

Correlation studies were conducted using Pearson product-moment correlations to determine if raw scores for the five facets of job satisfaction and the job in general were significantly intercorrelated. Table 14 presents the

results of the correlation studies. It is evident from reviewing the table that all facet intercorrelations were quite high. They range from a low of .235 for people and promotion to a high of .712 for present job and job in general. All intercorrelations were statistically significant at the .001 level. These results indicate employees who scored high or low on one facet of job satisfaction tended to score similarly on the other facets and the job in general. These results are very similar to those attained by Smith et al. (1969) in their studies.

TABLE 14
Intercorrelations of JDI Facets

Facet	Present Job	Pay	Promotion	Supervision	People
Present Job	---				
Pay	.400	---			
Promotion	.414	.325	---		
Supervision	.536	.279	.343	---	
People	.467	.333	.235	.480	---
Job in General	.712	.322	.411	.506	.517

All relationships are significant at the .001 level

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CHAPTER 3

Conclusions and Recommendations

This study evaluated the level of job satisfaction among administrative employees at Eisenhower Army Medical Center.

Conclusions

On the basis of the research conducted, the following conclusions were made:

1. There were significant differences in job satisfaction between subgroups of employees at EAMC. Table 15 presents the results of the subgroup comparisons by job facet. The results indicate significant differences were present in 20 of the 30 subgroup comparisons made. Listed below are the most notable findings of the subgroup comparisons.

a. Nutrition Care employees were much less satisfied with their jobs than personnel from the other departments. This relationship was still present after consideration of demographic differences between departments.

b. Age affected the various facets of job satisfaction in different ways. In general, the 24-and-under age group and the 45-54 age group were more satisfied than the other age groups. Overall, the 25-34 age group had the lowest satisfaction scores.

c. Males were significantly more satisfied than females with their supervision and opportunities for promotion.

TABLE 15
Results of Subgroup Comparisons (ANOVA)

Facet	Subgrouping			
	Department	Age	Sex	Employment Status & Classification Race
Present Job	.0001	.0061	NS	.0001 .0002
Present Pay	NS	NS	NS	.0007 .0004
Promotion	NS	.0015	.0106	.0001 NS
Supervision	.0001	NS	.0080	.0001 .0001
People	.0046	NS	NS	.0273 .0156
Job in General	.0001	.0091	NS	.0246 .0166

Listed above are p values for all comparisons for which significant relationships were identified (at the .05 level) by the ANOVA tests.

d. Wage-grade personnel were considerably less satisfied than other groups. Enlisted personnel in the E6-E9 category and officers were the most satisfied groups.

e. Blacks were significantly less satisfied than whites on all facets evaluated except the promotion facet for which there was no significant difference. The "others" group was generally more satisfied than blacks but less satisfied than whites. Further study indicated the satisfaction of black wage-grade personnel and black employees assigned to the Nutrition Care Department was particularly low.

2. There were significant differences in job satisfaction by job facet. Normative scores for the present job facet were significantly lower than normative scores for all other facets.

3. EAMC employees scored significantly lower than the normative population for all facets of job satisfaction evaluated. The normative population consisted primarily of employees from the industrial setting, and it was not an ideal comparison group. Nonetheless, comparisons of EAMC employee scores with those obtained in three hospital studies also indicated EAMC employee scores were substantially lower than were the scores of employees in these hospitals.

4. Raw scores for the five facets of job satisfaction and the job in general were all significantly intercorrelated at the .001 level. This indicates that employees who were satisfied (or dissatisfied) with one facet of job satisfaction tended to feel similarly about other facets of job satisfaction.

5. Employee comments identified a number of major concerns of EAMC employees. A number of employees complained of being overworked and underpaid. Another common observation was that supervision and communication in their sections needed to be improved. Several employees indicated they were dissatisfied with the promotion and awards systems at EAMC. Crowded working conditions and poor employee parking facilities were also frequently mentioned dissatisfiers. A summary listing of employee comments and their frequency is enclosed as Appendix F.

Recommendations

Based on the above conclusions, the following recommendations were made:

1. A summary of survey results should be provided to each department chief. The Deputy Commander for Administration should request each department chief to study and evaluate the results and to meet with him when ready to discuss his or her perception of the results and to propose any action plans for changing employee attitudes.

A copy of the proposed summary of results for the Department of Logistics is enclosed as Appendix I. Similar reports have been prepared for each department.

2. Once the above tasks have been completed and a consensus has been reached on appropriate actions, department chiefs should inform their employees of the survey results and of the initiatives which are being undertaken to improve employee satisfaction.

3. Educational programs should be utilized to enhance personal development and potential attainment of EAMC employees. The Investment in Excellence (Tice, 1983) videotape series offers an excellent tool for this purpose. This series is designed to improve the self-image of employees and unleash their development potential. The videotape series is available for checkout at the EAMC library.

4. Community meetings should be held on a regular basis within the departments to keep employees informed of ongoing events and to solicit their ideas. Hospital administrators should visit departments on a regular basis to let the employees know their efforts are appreciated.

5. All possible actions should be taken to relieve crowded working conditions prevalent throughout most of the hospital and to improve and expand employee parking areas. There are already initiatives in place to improve

these factors, and these initiatives should continue to receive command emphasis.

6. Further study should be done to determine causes of low levels of job satisfaction of Nutrition Care employees, black employees, and wage-grade employees.

7. This study should be duplicated in approximately one year to determine if desired changes in employee satisfaction have been achieved. Consideration should also be given to widening the scope of the survey to include all personnel assigned to EAMC.

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Appendix A

Reliability and Validity of the

Job Descriptive Index

Reliability and Validity of the Job Descriptive Index

Studies by Smith, Kendall, and Hulin (1969) strongly support the reliability and validity of the Job Descriptive Index (JDI). The reliability of the JDI was demonstrated by measuring split-half internal consistencies for the five facets of the original JDI (i.e., work, pay, promotions, supervision, and co-workers). These correlations, after being corrected to full length by Spearman-Brown formula, all are over .80. Two types of validity were measured during the Smith et al. studies. First, discriminant validity indicates how well the JDI distinguishes satisfaction between the various facets of job satisfaction it measures. For example, how well is the JDI able to distinguish satisfaction with pay from the other facets of satisfaction being measured? They conducted factor analysis tests which clearly identified five factors, each of which correspond to one of the facets measured by the JDI. Their tests indicate these five factors account for 75% of the total variance. These results indicate the JDI has excellent discriminant validity. Convergent validity indicates how well JDI measurements correspond to other measurement techniques commonly used to evaluate employee satisfaction. Smith et al. (1969) tested all facets of the JDI against the Faces Scale which was developed by Kunin (1955) and is widely used. Correlations which resulted from this

comparison ranged from .69 to .78 for the various facets being measured. These results indicate the JDI has good convergent validity. The strong validity of the JDI is supported by Soutar and Weaver (1982) who report that the JDI is the best validated job satisfaction measure available.

Appendix B
Survey Instrument

EMPLOYEE OPINION SURVEY
EISENHOWER ARMY MEDICAL CENTER

The Administration of Eisenhower Army Medical Center is interested in your opinions and feelings concerning your work. This survey is one method of obtaining information from you concerning your work and work environment. Your participation in this survey is totally voluntary. Please answer the questions in this survey honestly and frankly. Your individual responses will be held in the strictest confidence. Identifying codes will not be placed anywhere on the questionnaire, and it is not required that you sign the questionnaire. No one but you will know how you answered the questionnaire items.

The survey consists of three parts. The first part requests general information which will be used to compare various groups of employees who complete the survey. It is important that you answer each of these questions. The second part is the Job Descriptive Index (JDI). This is a survey tool which is widely used in business to obtain feedback from employees. It consists of 90 items and each requires a response of "Yes" (Y)," "No (N)," or "Undecided (?)." Please take your time and respond to each of these items. The third part of the survey provides you an opportunity to make comments concerning your work and this survey. We encourage you to use this opportunity to provide additional feedback.

If you have any questions at this time or while you are completing the survey, please address these questions to Major Schmid, the Survey Administrator. If you prefer to complete the survey at another time, please feel free to take it with you. When you have completed the survey, please place it in the envelope which has been provided, seal the envelope, and turn it in to Major Schmid. Major Schmid will conduct an analysis of the survey and report the results to EAMC's Administration in summary form only. Feedback will also be provided to employees concerning the results of the survey. Do you have any questions at this time?

PART I

Please answer each of the following questions by placing an X in the appropriate blanks. This information is necessary to provide a meaningful breakdown of survey results for groups of employees. This information will not be used to identify you. Results of survey will be reported in summary form only.

1. What department do you work in?

- ☐ a Logistics
- ☐ b Food Service
- ☐ c Patient Administration
- ☐ d Pharmacy
- ☐ e Information Management/Admin Svcs

2. What is your age?

- ☐ a 24 or under
- ☐ b 25 - 34
- ☐ c 35 - 44
- ☐ d 45 - 54
- ☐ e 55 or over

3. What sex are you?

- ☐ a Male
- ☐ b Female

4. What is your employment status and classification?

- ☐ a Civilian/GS 7 and below
- ☐ b Civilian/GS 8 and above/Wage Supervisor/Wage Leader
- ☐ c Civilian/Wage Grade
- ☐ d Military/Enlisted E-1 - E-5
- ☐ e Military/Enlisted E-6 - E-9
- ☐ f Military/Officer or Warrant Officer

5. What is your race?

- ☐ a White
- ☐ b Black
- ☐ c All others

PART II

**THE
JOB
DESCRIPTIVE
INDEX**

CODE NUMBER _____

Company _____

City _____

Please fill in the above
blanks and then turn the
page.

Think of your present work. What is it like most of the time? In the blank beside each word given below, write

Y for "Yes" if it describes your work

N for "No" if it does NOT describe it

? if you cannot decide

WORK ON PRESENT JOB

- _____ Fascinating
- _____ Routine
- _____ Satisfying
- _____ Boring
- _____ Good
- _____ Creative
- _____ Respected
- _____ Hot
- _____ Pleasant
- _____ Useful
- _____ Tiresome
- _____ Healthful
- _____ Challenging
- _____ On your feet
- _____ Frustrating
- _____ Simple
- _____ Endless
- _____ Gives sense of accomplishment

Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put

Y if it describes your pay

N if it does NOT describe it

? if you cannot decide

PRESENT PAY

- _____ Income adequate for normal expenses
- _____ Satisfactory profit sharing
- _____ Barely live on income
- _____ Bad
- _____ Income provides luxuries
- _____ Insecure
- _____ Less than I deserve
- _____ Highly paid
- _____ Underpaid

Go on to the next page

Now please turn to the next page

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put

Y for "Yes" if it describes your opportunities for promotion

N for "No" if it does NOT describe them

? if you cannot decide

OPPORTUNITIES FOR PROMOTION

- _____ Good opportunities for promotion
- _____ Opportunity somewhat limited
- _____ Promotion on ability
- _____ Dead-end job
- _____ Good chance for promotion
- _____ Unfair promotion policy
- _____ Infrequent promotions
- _____ Regular promotions
- _____ Fairly good chance for promotion

Go on to the next page

Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put

Y if it describes the supervision you get on your job

N if it does NOT describe it

? if you cannot decide

SUPERVISION ON PRESENT JOB

- _____ Asks my advice
- _____ Hard to please
- _____ Impolite
- _____ Praises good work
- _____ Tactful
- _____ Influential
- _____ Up-to-date
- _____ Doesn't supervise enough
- _____ Quick tempered
- _____ Tells me where I stand
- _____ Annoying
- _____ Stubborn
- _____ Knows job well
- _____ Bad
- _____ Intelligent
- _____ Leaves me on my own
- _____ Around when needed
- _____ Lazy

Please go on to the next page

Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put

Y if it describes the people you work with

N if it does NOT describe them

? if you cannot decide

PEOPLE ON YOUR PRESENT JOB

- ☐ Stimulating
- ☐ Boring
- ☐ Slow
- ☐ Ambitious
- ☐ Stupid
- ☐ Responsible
- ☐ Fast
- ☐ Intelligent
- ☐ Easy to make enemies
- ☐ Talk too much
- ☐ Smart
- ☐ Lazy
- ☐ Unpleasant
- ☐ No privacy
- ☐ Active
- ☐ Narrow interests
- ☐ Loyal
- ☐ Hard to meet

JOB IN GENERAL

Think of your job in general. What is it like most of the time? In the blank beside each word given below write

Y for "Yes" if it describes your job

N for "No" if it does NOT describe it

? if you cannot decide

- ☐ Pleasant
- ☐ Bad
- ☐ Ideal
- ☐ Waste of time
- ☐ Good
- ☐ Undesirable
- ☐ Worthwhile
- ☐ Worse than most
- ☐ Acceptable
- ☐ Like to leave
- ☐ Better than most
- ☐ Disagreeable
- ☐ Makes me content
- ☐ Inadequate
- ☐ Excellent
- ☐ Rotten
- ☐ Enjoyable
- ☐ Poor

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PART III
EMPLOYEE COMMENTS

Please use the space below to make any comments you would like concerning your work or this survey. Thank you very much for your participation.

Appendix C

Design and Scoring of the Job Descriptive Index

Design and Scoring of JDI

The JDI is a 90-item survey (Smith et al., 1969). A copy of the survey is enclosed in Appendix B. Each item requires a response of "Yes (Y)," "No (N)," or "Undecided (?)." About one-half of the items describe positive factors and the other half are negatively oriented. Positive responses to positive factors and negative responses to negative factors each receive a score of 3 points. Undecided responses each receive a score of 1 point. Negative responses to positive factors and positive responses to negative factors each receive a score of 0. Points are totaled for the five facets of job satisfaction and for overall job satisfaction (job in general). Since only nine items are included in the facets of pay and promotions while the other facets have 18, the scores for pay and promotions are doubled.

The raw scores which result from the above procedure can be used to compare satisfaction of employees within the facets of job satisfaction. As an example, a raw score of 40 on pay indicates greater satisfaction with pay than a raw score of 20 on pay. However, these raw scores should not be used to compare satisfaction between various facets of job satisfaction. For example, a score of 50 on pay does not indicate the same satisfaction with pay as a score of 50 on promotions indicates with promotions. In order for meaningful comparisons to be made of satisfaction

between facets, raw scores must be converted to normative scores. These normative scores are based on extensive testing of the JDI. A normative score is basically a percentile ranking of a raw score in comparison with scores obtained in the normative sample. If a raw score of 25 on pay converts to a standardized score of 35, this indicates that 35% of the normative sample had raw scores of 25 or less on the facet of pay. Once these normative scores have been determined, comparisons can be made to determine what facets of job satisfaction are most/least satisfying to employees. Normative scores are not available for the job in general because it was only recently added to the JDI.

Appendix D

Normative Table for the Job Descriptive Index

Normative JDI Scores
Satisfaction with All JDI Variables: Stratified by Sex

Percentile	Male					Female				
	Work	Pay	Promotions	Supervision	Co-Workers	Work	Pay	Promotions	Supervision	Co-Workers
01	07	00	00	08	12	08	00	00	10	12
05	15	04	00	18	21	16	05	00	20	20
10	21	08	01	25	28	22	07	02	27	25
15	25	12	04	30	33	25	11	04	31	30
20	27	15	06	33	36	27	13	05	33	33
25	30	18	08	35	38	29	16	07	35	36
30	31	20	10	37	41	30	19	09	37	38
35	33	24	12	39	42	32	22	10	39	40
40	35	26	14	41	44	34	23	11	40	42
45	36	28	16	42	45	35	25	12	41	43
50	38	30	18	44	46	37	28	14	42	44
55	39	32	20	45	47	38	30	16	44	45
60	40	34	24	45	48	39	32	17	45	46
65	42	36	26	47	49	40	34	18	47	48
70	43	39	30	48	50	41	36	21	47	49
75	44	41	34	48	50	42	37	23	48	50
80	45	42	36	50	51	44	40	25	50	51
85	47	46	41	51	52	45	42	30	51	52
90	48	48	46	51	52	47	44	38	51	53
95	50	50	50	52	54	49	48	47	53	53
99	52	54	54	54	54	52	52	52	54	54
Number per column	1970	1961	1941	1949	1926	638	634	632	636	635

Appendix E

Testing Differences in Sample
and Population Proportions

Testing Differences in Sample and Population Proportions

The following formula will be used to determine if the sample proportion is significantly different from the true population proportion.

$$\underline{z} = \frac{X - \Lambda Po}{\sqrt{\Lambda Po(1-Po)}}$$

with

- Po = true population proportion
- $\underline{p}$ = sample proportion
- $\underline{z}$ = $\underline{z}$ score
- X = number in sample meeting criteria
- Λ = total number in sample

This formula will be used to test the null hypothesis $\underline{p} = Po$. A two-tailed will be used. The critical value for $\underline{z}$ at the .05 level of significance is ± 1.96 .

Note. From Elementary Business Statistics: The Modern Approach (p. 324) by J. Freund and F. Williams, 1977, Englewood Cliffs, NJ: Prentice-Hall.

Appendix F

Summary of Employee Comments

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HSHF-DCA/CS - R

Summary of Employee Comments from Employee Opinion Survey

TO DCA/CS
EAMC

FROM MAJ Schmid
Admin Resident

DATE 18 May 87

CMT 1

SCHMID/jtz/4654

1. An employee opinion survey was conducted at EAMC in January 1987. All personnel in the following departments were encouraged to participate: Logistics, Nutrition Care, Patient Administration, Pharmacy and Information Management. A total of 263 out of the 349 personnel assigned to these departments participated in the survey.
2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is widely used to measure job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.
3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by employees on Part III of the survey (Employee Comments).
4. Of the 263 personnel who participated in the survey, 127 chose to make comments on Part III of the survey. Length of comments varied from one line to several pages. Some employees only commented on one concern while others discussed a number of their concerns.
5. Enclosure 1 lists the major concerns identified by our employees. A number of the concerns are closely related and in some cases they were very difficult to categorize. The enclosure lists the concerns and the number of employees that discussed these concerns.
6. Enclosures 2-6 are reports to the chiefs of the departments who participated in the survey. These reports list concerns which were identified by their personnel.

6 Encls



STANLEY C. SCHMID
MAJ, MS
Admin Resident

MAJOR CONCERNS IDENTIFIED IN EMPLOYEE COMMENTS

CONCERN	NUMBER OF EMPLOYEES
Too much job pressure and stress/employees overworked	22
Poor supervision	22
Need more people	17
Parking areas need to be improved/expanded	16
Work area crowded	10
Not enough recognition for job well done/awards unfair	6
Like my job	11
Need more training	6
Poor communication	9
Too much overtime	5
Better teamwork needed	4
Promotion system unfair	14
Grades/pay are too low for work/underpaid	15
Smoking rules not enforced	4
Need a la carte in dining facility	3
Too much profanity in work area	2

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL	SUBJECT
HSHF-DCA/CS	Employee Comments from Employee Opinion Survey

TO Director, Patient Administration	FROM DCA/CS EAMC	DATE 18 May 87	CMT 1 SCHMID/jtz/4654
--	---------------------	----------------	--------------------------

1. During January 1987, all personnel in your directorate were encouraged to participate in an employee opinion survey. Of the 88 personnel assigned to your directorate, 64 participated in the survey.
2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is a widely used measure of job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.
3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by your employees on Part III of the survey (Employee Comments).
4. Of the 64 Patient Administration personnel who participated in the survey, 40 made comment in Part III of the survey. In order to protect the anonymity of the participants, it was agreed that the results from Part III would be reported to department/directorate chiefs in summary form. Some employees only identified one concern while others identified two or more. Listed below are concerns which were identified by employees in your directorate and the number of employees who identified these concerns.

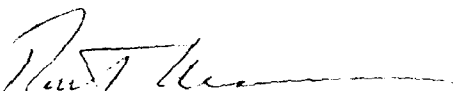
CONCERN	NUMBER OF EMPLOYEES
Too much job pressure/employees harassed/overworked	10
Work area crowded	7
Need more people	6
Poor supervision	6
Too much overtime	5
Not enough recognition for job well done	5
Work area too noisy	4
Inadequate training for employees	3
Grade/pay too low	3
Promotion system unfair	3
Like my job	3
Too much profanity in work area	2
Need more job rotation	2
Poor cooperation with other departments and physicians	2
Should not allow smoking in offices	2
More paved parking needed	2
Poor communication	1
Better team work needed	1
Supervisors do not understand civilians	1
Things are improving recently	1
Employees are super	1

HSHF-DCA/CS

SUBJECT: Employee Comments from Employee Opinion Survey

18 May 87

3. If you have any questions concerning this report, contact MAJ Schmid at 4654/6226.



ROBERT T. MARUCA
COL, MS
DCA/CS

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HSHF-DCA/CS

Employee Comments from Employee Opinion Survey

TO Director,
Nutrition Care

FROM DCA/CS
EAMC

DATE 18 May 87

CMT 1

SCHMID/jtz/4654

1. During January 1987, all personnel in your directorate were encouraged to participate in an employee opinion survey. Of the 81 personnel assigned to your directorate, 63 participated in the survey.

2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is a widely used measure of job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.

3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by your employees on Part III of the survey (Employee Comments).

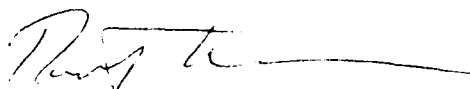
4. Of the 63 Nutrition Care personnel who participated in the survey, 22 made comments in Part III of the survey. In order to protect the anonymity of the participants, it was agreed that the results from Part III would be reported to department/directorate chiefs in summary form. Some employees only identified one concern while others identified two or more. Listed below are concerns which were identified by employees in your directorate and the number of employees who identified these concerns.

CONCERN

NUMBER OF EMPLOYEES

Need more people	6
More parking needed/keep parking lot graded	5
Need more equipment (food carts)	3
Promotion system unfair	3
Supervisors don't listen/poor communication	2
Poor supervision	2
Like "No Smoking" policy	1
Job graded too low	1

5. If you have any questions concerning this report, contact MAJ Schmid at 4654/6226.



ROBERT T. MARUCA
COL, MS
DCA/CS

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL	SUBJECT
HSHF-DCA/CS	Employee Comments from Employee Opinion Survey

TO Director, Logistics	FROM DCA/CS EAMC	DATE 18 May 1987	CMT 1 SCHMID/jtz/4654
---------------------------	---------------------	------------------	--------------------------

1. During January 1987, all personnel in your directorate were encouraged to participate in an employee opinion survey. Of the 89 personnel assigned to your directorate, 70 participated in the survey.
2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is a widely used measure of job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.
3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by your employees on Part III of the survey (Employee Comments).
4. Of the 70 Logistic Directorate personnel who participated in the survey, 32 made comments in Part III of the survey. In order to protect the anonymity of the participants, it was agreed that the results from Part III would be reported to department/directorate chiefs in summary form. Some employees only identified one concern while others identified two or more. Listed below are concerns which were identified by employees in your directorate and the number of employees who identified these concerns.

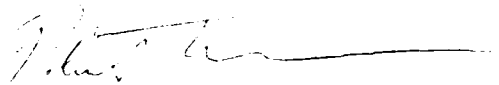
CONCERN	NUMBER OF EMPLOYEES
Poor supervision/lack of concern	7
Promotion system unfair	5
Parking is poor/parking rules not enforced	4
Need better communication	3
Better teamwork needed	3
Favoritism shown to some employees	3
Jobs graded too low/underpaid	4
Like co-workers	2
Like job	2
Smoking rules not enforced	2
Too much harassment on job/job pressure	3
Crowded work area	1
Looking for another job	1
Like supervisors	1
Need more training	1
Awards system unfair	1
Need a la carte in dining facility	1
Smokers are being treated unfairly	1
Area is understaffed/need more people	1

HSHF-DCA/CS

18 May 1987

SUBJECT: Employee Comments from Employee Opinion Survey

5. If you have any questions concerning this report, contact MAJ Schmid at 4654/6226.



ROBERT T. MARUCA
COL, MS
DCA/CS

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HSHF-DCA/CS

Employee Comments from Employee Opinion Survey

TO Chief,
Pharmacy Service

FROM DCA/CS
EAMC

DATE 18 May 87

CMT 1

SCHMID/jtz/4654

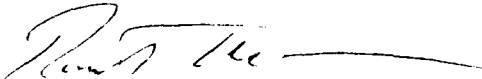
1. During January 1987, all personnel in your service were encouraged to participate in an employee opinion survey. Of the 44 personnel assigned to your service, 24 participated in the survey.
2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is a widely used measure of job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.
3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by your employees on Part III of the survey (Employee Comments).
4. Of the 24 Pharmacy Service personnel who participated in the survey, 13 made comments in Part III of the survey. In order to protect the anonymity of the participants, it was agreed that the results from Part III would be reported to department/directorate/service chiefs in summary form. Some employees only identified one concern while others identified two or more. Listed below are concerns which were identified by employees in your service and the number of employees who identified these concerns.

CONCERN

NUMBER OF EMPLOYEES

Employees overworked/too much stress	7
Need more people	4
Lack of concern for employees and their ideas	3
Poor supervision	3
Looking for another job	3
Like fellow workers	2
Underpaid	2
Work is satisfying	1
Dislike weekend work	1

5. If you have any questions concerning this report, contact MAJ Schmid at 4654/6226.


ROBERT T. MARUCA
COL, MS
DCA/CS

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HSHF-DCA/CS

Employee Comments from Employee Opinion Survey

TO Chief,
IMO

FROM DCA/CS
EAMC

DATE 18 May 87

CMT 1

SCHMID/jtz/4654

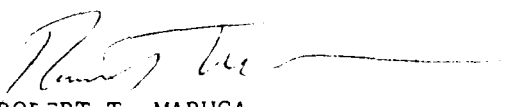
1. During January 1987, all personnel in your service were encouraged to participate in an employee opinion survey. Of the 47 personnel assigned to your directorate, 40 participated in the survey.
2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JPI), which is a widely used measure of job satisfaction. The third part gave employees the opportunity to comment on their job and the work environment at EAMC.
3. The results of the first two parts of the survey will be reported at a later date. The purpose of this report is to summarize comments made by your employees on Part III of the survey (Employee Comments).
4. Of the 40 IMO personnel who participated in the survey, 20 made comments in Part III of the survey. In order to protect the anonymity of the participants, it was agreed that the results from Part III would be reported to department/directorate chiefs in summary form. Some employees only identified one concern while others identified two or more. Listed below are concerns which were identified by employees in your service and the number of employees who identified these concerns.

CONCERN

NUMBER OF EMPLOYEES

Parking needs to be improved	7
Like my job	6
Grades too low for work/underpaid	5
Poor communication	5
Poor supervision	4
Promotion system unfair/too many promotions from outside department	3
Overworked	2
Not enough training	2
Need a la carte in dining facility	2
Need gift shop for civilians	2
Unhappy with job	1
Dead-end job	1
Some employees abuse sick leave	1
Poor work area	1
Needs more phones	1

5. If you have any questions concerning this report, contact MAJ Schmid at 4654/6226.


ROBERT T. MARUCA
COL, MS
DCA/CS

Appendix G

Testing Differences Between Proportions

Testing Differences Between Proportions

The following formula will be used to determine if significant differences exist between sample proportions for subgroups of the population being considered:

$$\chi^2 = \sum \frac{(\underline{f} - \underline{e})^2}{\underline{e}}$$

with

$$\begin{aligned} \chi^2 &= \text{chi-square value} \\ \underline{f} &= \text{observed frequency} \\ \underline{e} &= \text{expected frequency} \end{aligned}$$

This formula will be used to test the null hypothesis

$$P_1 = P_2 = P_3 \dots$$

The level of significance for this test will be .05 and the critical value for the test statistic will vary depending on the number of proportions being compared.

Note. From Elementary Business Statistics: The Modern Approach (p. 330) by J. Freund and F. Williams, 1977, Englewood Cliffs, NJ: Prentice-Hall.

Appendix H

Comparison of Respondents and Nonrespondents

by Demographic Variables

Comparison of Respondents and Nonrespondents
by Demographic Variables

Respondents and nonrespondents were compared for differences in demographic variables to include department, age, sex, employment status and classification, and race. The demographic characteristics of the employees assigned to each department were obtained from the department chiefs. The answers to the demographic questions provided the demographic characteristics of the respondents to the survey. The demography of the nonrespondents was obtained by subtraction analysis. For the purposes of this analysis, respondents were defined to be personnel who successfully completed the survey. A chi-square test for the differences between proportions was used to determine if significant differences in response rates were present (see Appendix G). Response rates did vary according to demographic characteristics. Of the five variables analyzed, three showed significant differences at the .05 level. These variables were department, age, and race. This appendix describes each of the variables tested.

Department

Five departments were represented by the study population: Logistics, Nutrition Care, Patient Administration, Pharmacy, and Information Management (IMO). Response rates

differed significantly among the departments (Table H-1). Logistics, Patient Administration, and IMO had response rates over 70% while Nutrition Care and Pharmacy response rates were both under 60%. The Nutrition Care response rate was low primarily because 17 of these employees submitted incomplete surveys.

TABLE H-1

Respondents Versus Nonrespondents by Department

	<u>Department</u>					
	Logistics	Nutrition Care	Patient Administration	Pharmacy	IMO	Total
Respondents	69	46	63	24	38	240
Nonrespondents	20	35	25	20	9	109
Total	89	81	88	44	47	349
% Respondents	77.5	56.8	71.6	54.5	80.9	68.8

$$\chi^2 = 16.24$$

Critical Value (CV) for .05 level of significance with 4 DF = 9.49

$$p < .01$$

Age

Response rates varied significantly by age group with employees in the youngest and oldest age groups being less likely to respond than the middle groups (Table H-2). The response rate for the 25-34 age group was substantially higher than all other groups.

TABLE H-2

Respondents Versus Nonrespondents by Age Group

	<u>Age Group</u>					<u>Total</u>
	24 and Under	25-34	35-44	45-54	55 and Above	
Respondents	23	65	70	58	24	240
Nonrespondents	22	9	36	25	17	109
Total	45	74	106	83	41	349
% Respondents	51.1	87.8	66.0	69.9	58.5	68.8

$$\chi^2 = 21.57$$

$$DF = 4$$

$$CV = 9.49$$

$$p < .01$$

Sex

There was no significant difference between respondents and nonrespondents based on sex (Table H-3). The response rate for females was slightly higher than for males.

TABLE H-3

Respondents Versus Nonrespondents by Sex

	<u>Sex</u>		<u>Total</u>
	Male	Female	
Respondents	110	130	240
Nonrespondents	55	54	109
Total	165	184	349
% Respondents	66.7	70.7	68.8

$$\chi^2 = .64$$

$$CV = 3.84$$

$$DF = 1$$

$$p = \text{Not significant}$$

Employment Status and
Classification

There were no significant differences between respondents and nonrespondents based on employment status and classification (Table H-4). However, response rates for lower level GS employees, higher enlisted, and officers were higher than for the other groups.

TABLE H-4
Respondents Versus Nonrespondents by Employment
Status and Classification

	<u>Employment Status & Classification</u>						Total
	GS7 & Below	GS8 & Above	Wage Grade	E1 - E5	E6 - E9	Officers	
Respondents	95	24	47	38	20	16	240
Nonrespondents	31	13	30	24	6	5	109
Total	126	37	77	62	26	21	349
% Respondents	75.4	64.9	61.0	61.3	76.9	76.2	68.8

$$\chi^2 = 8.03$$

$$CV = 11.07$$

$$DF = 5$$

$$p = \text{Not significant}$$

Race

There were significant differences in response rates based on race (Table H-5). Both whites and others had much higher response rates than blacks. The response rate for blacks was substantially reduced because 18 blacks submitted incomplete surveys.

TABLE H-5
 Respondents Versus Nonrespondents by Race

	<u>Race</u>			<u>Total</u>
	<u>White</u>	<u>Black</u>	<u>Other</u>	
Respondents	155	69	16	240
Nonrespondents	52	53	4	109
Total	207	122	20	349
% Respondents	74.9	56.6	80.0	68.8

$$\chi^2 = 13.18$$

$$CV = 5.99$$

$$DF = 2$$

$$p < .01$$

Appendix I

Sample Report of Results of the Survey

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL

SUBJECT

HSHF-DCA/CS

Results of Employee Opinion Survey

TO Director, Logistics

FROM DCA/CS
EAMC

DATE 30 June 1987

CMT 1

MAJ Schmid/mtl/4654

1. During January 1987, all personnel in the following directorates were encouraged to participate in an Employee Opinion Survey: Logistics, Nutrition Care, Patient Administration, Pharmacy, and Information Management. Of the 89 personnel assigned to your directorate, 70 participated in the survey.

2. The survey consisted of three parts. The first part asked demographic questions. The second part was the Job Descriptive Index (JDI), which is a widely used measure of job satisfaction. The JDI measures satisfaction with the job in general and five facets of satisfaction including present job, present pay, opportunities for promotion, supervision, and people. National norms have been established for the five facets of satisfaction measured by the JDI, and these norms enable comparisons to be made of EAMC employees' results with these norms. The third part of the survey gave employees the opportunity to comment on their job and the work environment at EAMC. A copy of the entire survey is attached as Enclosure 1.

3. The results of Part III of the survey were reported earlier. The purpose of this report is to summarize the results of Parts I and II of the survey.

	Overall Raw Mean Scores	Raw Mean Scores for Logistics	Overall Mean Normative Scores	Normative Mean Scores for Logistics
<u>Job Facet</u>				
Present Job	25.3	28.5	28.9	34.3
Present Pay	20.1	21.8	35.1	36.9
Promotion	12.6	14.4	34.1	38.0
Supervision	32.4	31.1	40.2	40.9
People	33.5	34.0	35.7	39.3
Job in General	32.5	35.3	NA	NA

SUBJECT: Results of Employee Opinion Survey

4. Results of the overall survey (240 personnel from the five directorates) indicate the following:

a. There were significant differences in job satisfaction by department/directorate.

b. There were significant differences in job satisfaction by age group (see Enclosure 2). Age affected various facets of job satisfaction in different ways. In general, however, the 24-and-under group and the 45-54 age group were more satisfied than the other age groups. Overall, the 25-34 age group had the lowest satisfaction scores.

c. For the sex group comparisons, there were significant differences in satisfaction for two of the job facets evaluated (Enclosure 3). Scores for males were significantly higher than female scores for the supervision and promotion facets. Sex group differences in mean satisfaction scores for all other job facets were not statistically significant at the .05 level.

d. Significant differences in job satisfaction by employment status and classification were identified for all five facets of job satisfaction and for the job in general (Enclosure 4). Wage-grade personnel were considerably less satisfied than other groups. Enlisted personnel in the E6-E9 group and officers were the most satisfied groups.

e. Job satisfaction differed significantly by race for four of the five facets of job satisfaction evaluation and for the job in general (Enclosure 5). Blacks were significantly less satisfied than whites on all facets except the promotion facet for which there was no significant difference. The "others" group was generally more satisfied than blacks but less satisfied than whites.

f. The mean normative scores for the job facets differed significantly (Enclosure 6). The analysis of normative scores by facet indicated that on a relative basis, EAMC employees were less satisfied with work on their present job than they were with all other job facets. This means that when raw scores for the present job facet were compared to established norms for this facet, the resultant normative scores were lower for this facet than for similar comparisons for the other facets.

g. EAMC employees scored significantly lower than the national norms for all facets of job satisfaction evaluated (Enclosure 7). The population used to establish the national norms consisted primarily of employees from the industrial setting, and it is not an ideal comparison group. Nonetheless, comparisons of EAMC employee scores with those obtained in three hospital studies also indicated that EAMC employee scores were substantially lower than were the scores of employees in these hospitals.

HSHF-DCA/CS

30 June 1987

SUBJECT: Results of Employee Opinion Survey

5. Please study and evaluate the results of the survey thoroughly and schedule a meeting with me NLT 31 July 1987 to discuss the results. I am interested in your perception of the results and any proposals you may have for changing employee attitudes.

7 Encls

ROBERT T. MARUCA
COL, MS
Deputy Commander for Admin/
Chief of Staff

EMPLOYEE OPINION SURVEY
EISENHOWER ARMY MEDICAL CENTER

The Administration of Eisenhower Army Medical Center is interested in your opinions and feelings concerning your work. This survey is one method of obtaining information from you concerning your work and work environment. Your participation in this survey is totally voluntary. Please answer the questions in this survey honestly and frankly. Your individual responses will be held in the strictest confidence. Identifying codes will not be placed anywhere on the questionnaire, and it is not required that you sign the questionnaire. No one but you will know how you answered the questionnaire items.

The survey consists of three parts. The first part requests general information which will be used to compare various groups of employees who complete the survey. It is important that you answer each of these questions. The second part is the Job Descriptive Index (JDI). This is a survey tool which is widely used in business to obtain feedback from employees. It consists of 90 items and each requires a response of "Yes" (Y)," "No (N)," or "Undecided (?)." Please take your time and respond to each of these items. The third part of the survey provides you an opportunity to make comments concerning your work and this survey. We encourage you to use this opportunity to provide additional feedback.

If you have any questions at this time or while you are completing the survey, please address these questions to Major Schmid, the Survey Administrator. If you prefer to complete the survey at another time, please free to take it with you. When you have completed the survey, please place it in the envelope which has been provided, seal the envelope, and turn it in to Major Schmid. Major Schmid will conduct an analysis of the survey and report the results to EAMC's Administration in summary form only. Feedback will also be provided to employees concerning the results of the survey. Do you have any questions at this time?

PART I

Please answer each of the following questions by placing an X in the appropriate blanks. This information is necessary to provide a meaningful breakdown of survey results for groups of employees. This information will not be used to identify you. Results of survey will be reported in summary form only.

1. What department do you work in?

- ☐ a Logistics
- ☐ b Food Service
- ☐ c Patient Administration
- ☐ d Pharmacy
- ☐ e Information Management/Admin Svcs

2. What is your age?

- ☐ a 24 or under
- ☐ b 25 - 34
- ☐ c 35 - 44
- ☐ d 45 - 54
- ☐ e 55 or over

3. What sex are you?

- ☐ a Male
- ☐ b Female

4. What is your employment status and classification?

- ☐ a Civilian/GS 7 and below
- ☐ b Civilian/GS 8 and above/Wage Supervisor/Wage Leader
- ☐ c Civilian/Wage Grade
- ☐ d Military/Enlisted E-1 - E-5
- ☐ e Military/Enlisted E-6 - E-9
- ☐ f Military/Officer or Warrant Officer

5. What is your race?

- ☐ a White
- ☐ b Black
- ☐ c All others

PART II

**THE
JOB
DESCRIPTIVE
INDEX**

CODE NUMBER _____

Company _____

City _____

Please fill in the above
blanks and then turn the
page.

Think of your present work. What is it like most of the time? In the blank beside each word given below, write

Y for "Yes" if it describes your work
N for "No" if it does NOT describe it
? if you cannot decide

WORK ON PRESENT JOB

_____ Fascinating
 _____ Routine
 _____ Satisfying
 _____ Boring
 _____ Good
 _____ Creative
 _____ Respected
 _____ Hot
 _____ Pleasant
 _____ Useful
 _____ Tiresome
 _____ Healthful
 _____ Challenging
 _____ On your feet
 _____ Frustrating
 _____ Simple
 _____ Endless
 _____ Gives sense of accomplishment

Think of the pay you get now. How well does each of the following words describe your present pay? In the blank beside each word, put

Y if it describes your pay
N if it does NOT describe it
? if you cannot decide

PRESENT PAY

_____ Income adequate for normal expenses
 _____ Satisfactory profit sharing
 _____ Barely live on income
 _____ Bad
 _____ Income provides luxuries
 _____ Insecure
 _____ Less than I deserve
 _____ Highly paid
 _____ Underpaid

Go on to the next page

Now please turn to the next page

Think of the opportunities for promotion that you have now. How well does each of the following words describe these? In the blank beside each word put

Y for "Yes" if it describes your opportunities for promotion

N for "No" if it does NOT describe them

? if you cannot decide

OPPORTUNITIES FOR PROMOTION

- _____ Good opportunities for promotion
- _____ Opportunity somewhat limited
- _____ Promotion on ability
- _____ Dead-end job
- _____ Good chance for promotion
- _____ Unfair promotion policy
- _____ Infrequent promotions
- _____ Regular promotions
- _____ Fairly good chance for promotion

Go on to the next page

Think of the kind of supervision that you get on your job. How well does each of the following words describe this supervision? In the blank beside each word below, put

Y if it describes the supervision you get on your job

N if it does NOT describe it

? if you cannot decide

SUPERVISION ON PRESENT JOB

- _____ Asks my advice
- _____ Hard to please
- _____ Impolite
- _____ Praises good work
- _____ Tactful
- _____ Influential
- _____ Up-to-date
- _____ Doesn't supervise enough
- _____ Quick tempered
- _____ Tells me where I stand
- _____ Annoying
- _____ Stubborn
- _____ Knows job well
- _____ Bad
- _____ Intelligent
- _____ Leaves me on my own
- _____ Around when needed
- _____ Lazy

Please go on to the next page

Think of the majority of the people that you work with now or the people you meet in connection with your work. How well does each of the following words describe these people? In the blank beside each word below, put

Y if it describes the people you work with
N if it does NOT describe them
? if you cannot decide

PEOPLE ON YOUR PRESENT JOB

_____ Stimulating
 _____ Boring
 _____ Slow
 _____ Ambitious
 _____ Stupid
 _____ Responsible
 _____ Fast
 _____ Intelligent
 _____ Easy to make enemies
 _____ Talk too much
 _____ Smart
 _____ Lazy
 _____ Unpleasant
 _____ No privacy
 _____ Active
 _____ Narrow interests
 _____ Loyal
 _____ Hard to meet

JOB IN GENERAL

Think of your job in general. What is it like most of the time? In the blank beside each word given below write

Y for "Yes" if it describes your job
N for "No" if it does NOT describe it
? if you cannot decide

_____ Pleasant
 _____ Bad
 _____ Ideal
 _____ Waste of time
 _____ Good
 _____ Undesirable
 _____ Worthwhile
 _____ Worse than most
 _____ Acceptable
 _____ Like to leave
 _____ Better than most
 _____ Disagreeable
 _____ Makes me content
 _____ Inadequate
 _____ Excellent
 _____ Rotten
 _____ Enjoyable
 _____ Poor

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PART III
EMPLOYEE COMMENTS

Please use the space below to make any comments you would like concerning your work on this survey. Thank you very much for your participation.

Mean Job Facet Scores by Age Groups

Facet	24 and Under				55 and Above		Total	F-Ratio*	p Value [†]
	25-34	35-44	45-54	Above					
Present Job	24.3	21.2	24.8	29.8	27.6	25.3	3.70	.0061	
Present Pay	21.8	17.0	20.9	20.9	22.4	20.1	1.16	.3272	
Promotion	20.6	9.9	15.4	10.6	8.5	12.6	4.55	.0015	
Supervision	35.4	31.4	32.8	33.6	28.2	32.4	.66	.6208	
People	38.8	33.5	30.6	33.2	37.1	33.5	1.62	.1687	
Job in General	30.7	26.9	34.6	36.4	31.8	32.3	3.46	.0091	
Number of Participants	23	65	70	58	24	240			

*Critical value for the .05 level of significance with 4 DF in the numerator and 235 DF in the denominator is 2.37.

[†]p value is the likelihood of obtaining results this extreme or more extreme if there are no actual differences in the means of the groups.

Mean Job Facet Scores by Sex

	Male	Female	Total	F-Ratio*	p Value
<u>Facet</u>					
Present Job	26.1	24.6	25.3	.8642	.3535
Present Pay	20.1	20.1	20.1	.0001	.9994
Promotion	15.0	10.5	12.6	6.64	.0106
Supervision	35.6	29.7	32.4	7.16	.0080
People	34.6	32.5	33.5	1.09	.2983
Job in General	32.7	31.9	32.3	.13	.7222
Number of Participants	110	130	240		

*Critical value for the .05 level of significance with 1 DF in the numerator and 238 DF in the denominator is 3.84.

Mean Job Facet Scores by Employment Status and Classification

Facet	Civilian GS7 and Below	Civilian GS8 and Above	Civilian Wage Grade	Military Enlisted E1-E5	Military Enlisted E6-E9	Military Officers	Total	F-Ratio*	p Value
Present Job	27.8	30.2	18.4	20.7	30.4	27.8	25.3	6.21	.0001
Present Pay	20.2	22.7	17.0	14.6	30.2	24.9	20.1	4.46	.0007
Promotion	9.9	10.3	9.4	14.0	25.9	21.3	12.6	7.69	.0001
Supervision	34.0	36.4	20.1	31.8	40.2	44.8	32.4	8.79	.0001
People	35.4	33.5	26.9	34.2	33.5	39.3	33.5	2.57	.0273
Job in General	35.1	31.4	27.6	28.4	38.4	31.9	32.3	2.63	.0246
Number of Participants	95	24	47	38	20	16	240		

*Critical value for the .05 level of significance with 5 DF in the numerator and 234 DF in the denominator is 2.21.

Mean Job Facet Scores by Race

Facet	White	Black	Other	Total	Critical Value*	F-Ratio	p Value
Present Job	27.8	21.0	19.6	25.3	3.00	8.64	.0002
Present Pay	22.7	14.7	18.3	20.1	3.00	8.22	.0004
Promotion	13.5	10.6	12.4	12.6	3.00	1.05	.3518
Supervision	35.8	24.9	32.0	32.4	3.00	10.10	.0001
People	35.4	29.0	33.5	33.5	3.00	4.23	.0156
Job in General	34.4	28.2	28.9	32.3	3.00	4.17	.0166
Number of Participants	155	69	16	240			

*Critical value for the .05 level of significance with 2 degrees of freedom in the numerator and 237 degrees of freedom in the denominator.

Mean Job Facet Scores (Normative)

Present Job	28.9
Present Pay	35.1
Promotion	34.1
Supervision	40.2
People	35.7

n = 240 for each job facet

F-ratio = 4.08

p < .01

Critical Value for .05 level of significance
with 4 DF in numerator and 1195 DF in denominator
is 2.37

Comparison of EAMC Scores
with Normative Scores

Facet	# Employees	Proportion	$\bar{z}$	p
	At or Above 50th Percentile	At or Above 50th Percentile	Value	
Present Job	65	.271	-7.10	<.0001
Present Pay	78	.325	-5.42	<.0001
Promotion	68	.283	-6.71	<.0001
Supervision	93	.388	-3.48	.0006
People	75	.313	-5.81	<.0001

Critical value for $\bar{z}$ at .05 level of significance is ± 1.96

n = 240 for all facets