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ABSTRACT

This study at Edinboro University (Pennsylvania) examined the relationship between faculty members' perceived level of physical fitness and their job satisfaction and stress levels. A 33-item questionnaire was adapted from existing instruments: the retirement descriptive index; the job descriptive index; and the lifestyle questionnaire. The questionnaire was completed by 50 (of 105) faculty members. The results generally indicated increased job satisfaction and decreased stress when faculty members had a higher level of perceived physical fitness. Other findings indicated that the faculty members generally had a high level of job satisfaction, that most felt their physical condition surpassed that of most of their peers, and that most experienced relatively low levels of job-related stress. The questionnaire is attached. (Contains 82 references and 6 tables.) (DB)

The Relationship Between University Members' Job Satisfaction/Stress and Their Perceived Level of Physical Fitness

Presented to
Mr. Karl Nordberg

Course Requirement for
Research in Education

Prepared by
Rosanne Marie Siggia

August 8, 1996

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Abstract

The purpose of this study was to determine the relationship between university faculty members' perceived level of physical fitness and their job satisfaction versus their stress level. Questionnaire methodology was used to gather data from 105 Edinboro University faculty members regarding this topic. The results generally indicated increased job satisfaction and decreased stress when the faculty members had a higher level of perceived physical fitness. The questionnaire used was adapted from the Retirement Descriptive Index (RDI), Job Descriptive Index (JDI), and the Lifestyle Questionnaire. The review of the literature indicates that regular exercise appears to be an effective strategy for reducing stress.

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Chapter 1

The Research Problem

Background Statement. College professors inevitably experience some degree of stress throughout their careers. All types of exercise build a resistance to stress by enhancing one's physiological and psychological self. Maintaining a certain level of physical fitness is a positive means to deal with tension related to the work environment.

There is a great deal of research on physical fitness, but a limited amount has been studied with respect to teaching. This research will attempt to determine if a successful method for reducing stress at work is related to an increase in physical activity. Implementing a successful strategy for reducing stress would probably be reflected in higher productivity at work.

Statement of the Problem. The purpose of this study is to determine the relationship between university faculty members' perceived level of physical fitness and their job satisfaction versus their stress level and to provide recommendations for dealing with stress at work.

The first subproblem. The first subproblem is to determine what the faculty members perceive as their level of physical fitness.

The second subproblem. The second subproblem is to determine the level of satisfaction faculty members have relating to their work.

The third subproblem. The third subproblem is to determine the stress level experienced by the faculty while at work.

The fourth subproblem. The fourth subproblem is to determine the relationship among physical fitness, work satisfaction, and stress through a search of the available literature.

Statement of Hypothesis. Being physically fit can reduce the stress caused from the work environment.

Assumptions.

The first assumption. All of the people answering a questionnaire are employed by the university.

The second assumption. Faculty responding to the survey will answer the questions honestly.

The third assumption. The survey actually measures the physical condition of the faculty surveyed.

The fourth assumption. The survey actually measures the work related stress level of the faculty surveyed.

Statement of definitions.

Physical fitness For the purposes of this study physical fitness implies that an individual is in good physical condition. It includes the level of physical activity. It does not include a person's mental or physical state, diet, weight, or sleep.

Work satisfaction Work satisfaction infers being content at one's place of employment.

Stress Stress indicates physical, mental, or emotional strain or tension.

Regular exercise For the purposes of this research,

regular exercise refers to engaging in a physical activity for thirty minutes at least three times per week.

Statement of limitation. This study is limited to professors at a university.

Statements of delimitation.

The first delimitation. This study will not include all faculty members at the university.

The second delimitation. The professionals, aside from teachers, will not be included in this study.

Chapter 2

REVIEW OF THE RELATED LITERATURE

Historical Background. Physical exercise is popular today. Fitness facilities are flourishing in the United States. Health promotion programs have been multiplying for employees since the mid 1970's (Freudheim, 1990; Eickholt, 1993). More wellness education programs in business and industry began to grow in the 1980's (Reed, Mulvaney, and Billingham, 1986, Chen, 1988, Fielding and Piserchia, 1989, Gebhardt and Crump, 1990, Freudheim, 1990; Green and Kueter, 1990, Watts et al, 1992). For example, the world headquarters of the Continental Oil Company (CONOCO) in Houston employs approximately 2,000 employees and offers indoor and outdoor fitness facilities available to all employees, free of charge (Rudman and Steinhardt, 1988).

Bonne Bell has offered free use of their exercise facilities and added other incentives for the employees like earning thirty extra minutes at lunch if they are exercising since 1976. Johnson and Johnson, a company that employs 33,000 United States workers, has had a successful health promotion program for eleven years. Sara Lee, employing 70,000 people, builds fitness facilities on company grounds (providing space permits) or pays for part of the membership fee for employees at local health clubs (Harris and Roberts, 1989). This trend is moving toward universities and colleges in the 1990's. McMillin points out that during the past decade wellness programs have been implemented at America's colleges and universities. (McMillin, 1986). The National Wellness Institute at the University of Wisconsin at Stevens Point estimates that perhaps twenty percent of the nation's 3,400 institutions now offer wellness programs of some kind (National Wellness Institute, 1988). Another example is the Health Education and Lifestyle Promotion (H.E.L.P.) Program at Missouri University that has been in existence for fifteen years (Watts et al, 1992). Studies at these universities have implemented either an exercise, physical fitness, aerobics or wellness program: University of Toronto (Cox, 1982), The University of Connecticut (Hayden, 1984), University of Michigan (Horowitz, 1985), The University of Utah (Chaney, 1988), University of Northern Colorado Guerra, 1989), University of Colorado at Denver Graduate School of Public Affairs (Kirschner, 1990),

California School of Professional Psychology (Geis, 1991), Oregon State University (Siripasert, 1991), Old Dominion University (Holland, 1992), Hofstra University, (Altchiler, 1992), and University of Kentucky (Peterson, 1993). The work site could offer a setting to develop exercise habits that could be continued after retirement (Dishman, 1985; Sharp and Connell, 1992).

It is desirable for professionals to be happy and healthy in their careers. One way to obtain this goal is through physical exercise (Smith, Bibeau, Altschuld, and Heit, 1988; Horowicz, 1985; Plate and Stone, 1974). Exercise habits influence an individual's reaction to occupational stress (Happ and Yoder, 1991; Berwick, 1992).

Stress

Professionals involved in interacting with people are at greatest risk for developing occupational stress (Swent and Gmelch, 1977; Gmelch, Lovrich, and Wilke; 1984, and Blix and Lee, 1991). This is one indication that college teaching may be stressful. Occupational stress can lower the level of job satisfaction (Happ and Yoder, 1991; Berwick, 1992). Kirschner found out in a study surveying 387 federal employees that a decrease in stress correlated with an increase in job satisfaction (Kirschner, 1990). Holland conducted a study at Old Dominion University to determine if physical activity had an effect on employees' mood states and job satisfaction. The study consisted of

six groups of two (one male and one female). The faculty members who participated in physical activities had lower levels of tension, depression, fatigue, anger, and mood disturbance. Further, as the amount of time spent exercising climbed, scores in tension, depression and mood disturbance fell (Holland, 1992). People who exercise regularly are able to reduce tension and provide friendly companionship (Health News, 1994). An individual's exercise habits influences his or her reaction to occupational stress (Berwick, 1992). Seldin adds, regular exercise is one way to modify personal behavior and handle stressful situations in a positive manner (Seldin, 1991).

> "The job environment has been found to be central in the experience of stress among adults; for education professionals it is estimated that 60% of the stress experiences is work related." (Happ and Yoder, p. 10, 1991)

Physical Fitness

Exercise can improve a person's health (Giller and Matthews, 1981). "Many people believe they are active enough in recreational sports (like bowling) and their general daily activities (mowing the lawn, cleaning house). These activities, however, are not the type that condition your heart and lungs; they are not aerobic." (Metropolitan Life and Affiliated Companies, brochure, 1988)

When engaging in an aerobic activity a person should achieve his or her target heart rate. Metropolitan Life and

Affiliated Companies offer some guidelines for achieving one's target heart rate. In the first few months of a program, a person should attempt to achieve 60% of his or her target heart rate, and gradually increase to 75%.

1. Subtract your age from 220.

   Example: 45 year old person

   220 - 45 = 175

2. Multiply the answer by the desired percentage for the target heart rate.

   Example continued:

   65% = .65 175 x .65 = 114

   70% = .70 175 x .70 = 123

   75% = .75 175 x .75 = 131

The answer reflects how many beats per minute the person should achieve during a twenty to thirty minute exercise session. Check this during or directly following the exercise (Metropolitan Life and Affiliated Companies, 1988). Regular exercise is perceived beneficial when it is twenty to thirty minutes at a time and at least three times a week (Horowitz et al, 1985; Metropolitan Life and Affiliated Companies, 1988; Altchiler, 1992; Holland, 1992; Watts et al, 1992).

Health problems decrease as physical fitness increases. Regular physical activity is related to lower levels of blood pressure and cholesterol. It reduces the risk of heart disease, decreases body weight and fat, improves blood lipids, bone mineral content, and glucose tolerance. The

level of physical fitness may also have positive psychological effects on an individual (Sonstroem and Walker, 1973; Horowicz et al, 1985; Rudman and Steinhardt, 1988; Connell and Sharp, 1992; Watts et al, 1992).

Horowitz suggests that a wellness intervention program could improve health risks, self-esteem, a tolerance to an abundance of stress (Horowitz et al, 1985). The Missouri University Health Education and Lifestyle Promotion (H.E.L.P.) Program affected the participating subjects significantly in these areas: weight loss, body composition (now less fat), total cholesterol levels, systolic blood pressure levels, diastolic blood pressure levels, decreased resting heart rates, and lowered exercise heart rates (Watts et al, 1992). Much of the physical decline of people is relative to physical disuse rather than disease and can be prevented (Bernadette et al., Bortz, 1982; Sharp and Connell, 1992).

There needs to be a willingness from employees to make strides toward wellness in order to increase one's level of physical fitness (Watts et al, 1992). There is willingness from employees at the corporate health and fitness program at CONOCO who employs over 2,000 people. Over 85% of the staff from the Continental Oil Company in Houston agreed there was a need to utilize and maintain the wellness facility that has been implemented at their work site (Rudman and Steinhardt, 1988). Fitness programs are one component of a wellness program. They offer assistance to

employees to find the exercise that suits the individual (Sperry, 1984).

The physical dimension is one of the six dimensions of wellness. The other five are social, occupational, emotional, spiritual, and intellectual (National Wellness Institute, 1988). Six of the twelve characteristics of a person who has attained wellness status are these:

1. "trim and physically fit;
2. full of energy, vigorous, rarely tired;
3. free from minor complaints (e.g. indigestion, constipation, headaches, insomnia);
4. alert, able to concentrate, clearheaded;
5. creative and active
6. able to relax easily, free from worry and anxiety" (Bloomfield and Kory, p. 20-21, 1978).

Characteristics listed are those that relate to physical fitness and stress. Ardell also included physical fitness as one of the dimensions of wellness (Ardell, 1977).

Physical Fitness and Stress

Physical fitness can improve a person's stress level. There is a positive correlation between one's fitness and stress levels (Health News, 1994). In a 1992 study at Hofstra University, an aerobic group and control group were tested over an eight week period to determine if regular physical activity affected their stress level. The aerobic group experienced less stress and anxiety than the control

group (Altchiler, 1992). Aerobic exercise helps individuals to perceive their job as less stressful. It is a way to find relief (Horowicz et al, 1985; Goldstein, 1992). Exercise is most commonly and frequently reported as the strategy used for stress management (Hosley, 1992).

Occupational stress, if not dealt with properly, can lead to burnout (Grant, 1991; Berwick, 1992). Burnout is caused by too much stress. It refers to the exhaustion experienced by a person who is unable to compensate for all of the inescapable pressures. Symptoms include fatigue, emotional numbness, job dissatisfaction, and psycho-physiological illness (e.g. ulcers or high blood pressure) (Seldin, 1991). Professionals are affected by their work environment and experience stress. Therefore, they are at risk for burnout (Grant, 1991; Berwick, 1992). Burnout may lead to turnover. Job dissatisfaction is a major predictor of turnover (Koch and Steers, 1978). A significant decrease in turnover was reported in a study including 534 faculty members who participated in a regulated employee fitness program at the University of Toronto in Canada (Cox, 1982).

Physical Fitness and Job Satisfaction

The physical fitness level may also have positive psychological effects on an individual. While engaged in a physical fitness program, as a person's psychological state improves, so will his or her attitude toward the job. As a result, workers will experience higher job satisfaction

(Sonstroem and Walker, 1973; Horowicz, 1985; Rudman and Steinhardt, 1988; Connell and Sharp 1992; Holland, 1992; Watts et al, 1992). At Old Dominion University Holland determined if physical activity had an effect on the faculty member's mood states and job satisfaction. Results indicated a positive correlation between physical activity and job satisfaction. Moreover, as the faculty increased the time of the exercise sessions, tension, mood disturbance and depression decreased (Holland, 1992). At the University of Connecticut the subjects of a physical fitness study also experienced lower levels of depression as a result of regular physical activity (Hayden, 1984).

Eickholt found contrasting results in his study of 300 elementary principals. Eickholt attempted to determine the relationship between wellness, which includes physical and emotional components, and job satisfaction. Of the 300, 192 returned surveys. The males, who were comprised of 132 principals, did not show a relationship between physical exercise lifestyle habits and job satisfaction. The 62 female principals showed no significant relationship as well. However, the relationship between emotional lifestyle habits and job satisfaction did show a positive relationship. The researcher determined that a larger sample size may have revealed different results for their overall wellness. Eickholt's lifestyle habits survey was limited to 10 items on physical exercise nd 23 items on emotional management. Eickholt recommended further data be

gathered on physical exercise lifestyle habits and their relationship to job satisfaction (Eickholt, 1994).

Research suggests that as the physical fitness level increases, the work productivity does as well (Rudman and Steinhardt, 1988; Siriprasert, 1991). "Good health and high energy are important to productivity and reducing stress." (Seldin, p. 19, 1991) Teachers can build an endurance for work. By exercising regularly, they can acquire more energy (Sonstroem and Walker, 1973; and Martinez, 1995). Over three-fourths of the participants of the fitness program at The Continental Oil Company in Houston credited their increase in productivity directly to exercising regularly. In addition, over 98% of the same employees indicated an increase in job satisfaction as a result of their work productivity. Work productivity parallels job satisfaction (Rudman and Steinhardt, 1988). Michigan State University, for example, operates a program to encourage faculty, administrators, and staff to become more healthy individuals. The program focuses on exercise, nutrition, use of alcohol, and stress management. (Seldin, 1991). George Washington University has a wellness center that includes aerobics and yoga programs and stress management workshops (Seldin, 1991).

Effects on the Workplace

Job stress is a factor affecting absenteeism (Hayden, 1984; Rudman and Steinhardt; 1988, Blix and Lee, 1991).

Hayden found that the 40 participants, in contrast to the 25 control subjects, had fewer sick days, days absent from work, and consultations/visits with a physician (Hayden, 1984). Rudman and Steinhardt found that there had been a 42% decrease in absenteeism after the health and fitness program was implemented at CONOCO, a company that employs 2,000 workers (Rudman and Steinhardt, 1988). Blix and Lee evaluated 575 questionnaires completed by deans, associate deans, and chairpersons to determine the contributing factors in developing occupational stress. The study showed absenteeism, tardiness, and turnovers as results of job stress. There was a correlation between perceived work stress and perceived coping ability. (Blix and Lee, 1991). "The perception of poor coping ability was correlated with stress-related illnesses." (Blix and Lee, p. 289, 1991) A significant decrease in absenteeism has been linked to faculty who are participating in wellness studies. Oregon University showed the 344 volunteer full-time Oregon public university faculty members who participated in the wellness studies missed fewer illness-days than employees who did not participate in the study (Stiriprasert, 1991). Fewer sick-days and job errors, lower insurance costs, more energy, better morale and camaraderie have been reported when people utilize wellness programs (Seldin, 1991). One of twenty-five studies in the review of the literature indicated no significant difference in absenteeism when employees use wellness programs. This was at the University of Toronto

(Cox, 1982). Johnson and Johnson reported medical costs 150 percentage points below the national trend, and in a two year period, absenteeism decreased 15 percent with the implementation of a health promotion program (Tarkan, 1991). New York Telephone credited an annual savings of more than $2 million to the employees that participated in health promotion programs because of their reduced absenteeism and medical costs (Kilpatrick, 1984).

"With rising costs of health care, colleges and universities can't ignore that stress is often unavoidable and measures need to be taken to modify the negative effects that stress has on health." (Horowicz et al, p.4, 1985) It is estimated that $675 billion or 10.5% of the gross national product (GNP) is being spent on health care in the United States (Bunch, 1992). It is also estimated that health care costs may squander 25% to 30% of a company's total payroll (Kilpatric, 1984; Levine, 1983; Violette and Violette, 1990).

It is estimated that twenty percent of the nation's 3,400 institutions have implemented wellness programs in an effort to combat medical costs, increase productivity and morale, manage stress, and lower absenteeism. The wellness programs provide a place to exercise and lose weight and learn more about nutrition (McMillin, 1986; Seldin, 1991). At the University of Connecticut, forty participants involved in an aerobics fitness program had fewer medical visits than the twenty-five control subjects who did not

partake in the study (Hayden, 1984). Another example involving CONOCO, a company who employees 2,000 people, showed research that there was a 58% reduction in health care costs after the health and fitness programs were implemented (Rudman and Steinhardt, 1988). At Safeway, a wholesale bakery plant, tardiness and absenteeism decreased by more than 60% and union grievances by 95% after implementing a wellness program (Harris and Roberts, 1989).

Some of the major benefits of wellness programs include the following:

1. increased worker productivity, morale, loyalty, energy creativity, and job satisfaction

2. improved stress management, views of the company or institution, camaraderie, and employee health

3. decreased absenteeism (including but not limited to absences from illness and injury), tardiness, voluntary turnover, medical and compensation costs, and health insurance claims (Terborg, 1986; Kizer, 1988; Violette and Violette, 1990)

In the review of the literature four of the twenty-five studies determined regular physical exercise had no direct correlation to health care costs; Chaney's study at the University of Utah (Chaney, 1988), Guerra's study at the University of Northern Colorado (Guerra, 1989), Siriprasert's study at Oregon State University (Siriprasert, 1991), and Altchiler's study at Hofstra University (Altchiler, 1992). Chaney's study implied there were no

changes because it was a short term program; the length of the program was not defined (Chaney, 1988). Guerra determined the data based upon the evaluation of the wellness program were too limited to draw conclusions why there was no correlation between health costs and physical fitness (Guerra, 1989). In Siriprasert's study a volunteer sample of 344 full-time employees tended to exercise on their own rather than through the university physical fitness program (Siriprasert, 1991). In Altchiler's study there were two groups, an aerobic (twenty three subjects) and a non-aerobic (twenty subjects). The groups involved both exercisers and non-exercisers and 88% of the subjects were female. The pretest and posttest showed no difference between physical fitness and health care costs (Altchiler, 1992).

Summary The review of the literature generally demonstrates a positive relationship between regular physical exercise and stress and job satisfaction. The researcher will attempt to determine if survey results of a selected group of Edinboro University faculty are consistent with the review of the literature by distributing a questionnaire to 105 faculty members. The questionnaire is adapted from the Retirement Descriptive Index (RDI) (Hulin, Kendall, and Smith, 1969), Job Descriptive Index (JDI) Hulin, Kendall, and Smith, 1969; Kock and Steers, 1978), and the Lifestyle Questionnaire (Cavendish, 1991) and will be used to gather

the data. The JDI was used by Cox (1982) in a study including 534 participants and by Altchiler (1992) in a study consisting of forty-three subjects. The findings of this research and the studies cited add to the growing body of knowledge of the relationship between physical fitness and job satisfaction versus stress level.

Chapter 3

Methodology

Chapter three addresses the methodology used to conduct this study. The main components of the chapter are these:

1. Description of the Population
2. Instrumentation
3. Procedure for Collection of Data
4. Technique Used for Analysis of Data
5. Threats to Internal and External Validity

Description of the Population

The Edinboro University of Pennsylvania summer sessions 1996/Fall Semester 1996-97 scheduling book will be used to identify faculty members teaching during the second summer session at Edinboro's main campus. The subjects' campus addresses will be obtained from the 1995-96 Edinboro

University of Pennsylvania Campus Telephone Directory. All of the faculty members teaching second summer session will be mailed questionnaires, via campus mail. This sample of 105/370 faculty members is 28% of the total faculty. This will be an anonymous questionnaire. The researcher will not be able to identify subjects unless they choose to write their name on the questionnaire. Nevertheless, no names will be identified when discussing the results of the questionnaire.

Cates recommends to always use the largest population possible to arrive at the most accurate outcome of how the total population feels (Cates, 1985). For the purposes of this study, all of the faculty members teaching on campus during the second summer session will be mailed a questionnaire, providing their names and campus addresses are in the directory.

Edinboro University of Pennsylvania is a state school in a rural community, employing about 370 faculty members. The most recent census was taken in 1990. The results showed 8,131 students enrolled at Edinboro University of Pennsylvania and 7,776 citizens living in the town of Edinboro.

Instrumentation

An envelope including a cover letter, questionnaire, and self-addressed envelope will be mailed to the faculty members. The cover letter and questionnaire are included at

the end of chapter three. The cover letter will explain the purpose of this study and encourage participation. The questionnaire will consist of thirty-three questions distributed on the front and back of a page. The self-addressed envelope will be provided to return the questionnaire.

The questionnaire will be adapted from the Retirement Descriptive Index (RDI) (Hulin, Kendal, and Smith, 1969), the Job Descriptive Index (JDI) (Hulin, Kendall, and Smith, 1969; Kock and Steers, 1978), and the Lifestyle Questionnaire (Cavendish, 1991). The JDI was used by Cox (1982) in a study including 534 participants and by Altchiler (1992) in a study consisting of forty-three subjects. Thirty questions will be adapted from the RDI and JDI and three from the Lifestyle Questionnaire.

The JDI has been developed using a similar strategy as the RDI. Both tests parallel each other in format. Many of the items are the same but under different subheadings. The subheadings included in the RDI are Activities and Work, Financial Situation, Health, and People You Associate With. The subheadings of the JDI are Work, Supervision, Pay, Promotions, and Coworkers. The answers to the items on the RDI and JDI must be yes or no (Hulin, Kendall, and Smith, 1969; Kock and Steers, 1978). The adapted questionnaire will use items from the following subheadings: Activities and Work, Financial Situation, Health, Pay, and Work. A

Likert scale will be used to give the subjects more freedom of response.

The Lifestyle Questionnaire addresses nine areas: Alcohol Use, Blood Pressure, Weight and Body Fat Levels, Physical Fitness, Stress and Anxiety, Automobile Safety, Relationships, Rest and Sleep, and Life Satisfaction. Questions have been adapted from two areas, Physical Fitness and Stress and Anxiety. The Lifestyle Questionnaire uses a checklist. The adapted questionnaire will use a Likert scale.

The questionnaire will be designed using the Likert scale. It will use a rating scale of strongly disagree (SD), moderately disagree (MD), undecided (U), moderately agree (MA), and strongly agree (SA).

The questions will be categorized to represent certain characteristics. Questions (1-14) will indicate job satisfaction and stress. Questions (15-19) will give an inclination of the financial situation of the subjects, possibly indicating stress. Items (20-22) will indicate an attitude toward coworkers. Questions (23-33) will determine how the faculty members perceive their personal health and physical fitness.

Procedure for Collection of Data

To collect the data for this study, the following procedures and general time frame will be followed:

1. 105 envelopes including a cover letter, questionnaire, and self-addressed envelope will be mailed to the selected subjects through the Edinboro University campus mail.
2. Subjects will be given five days to return the questionnaire.
3. Completed questionnaires will be mailed through the Edinboro campus mail to Karl Nordberg, teacher of Research In Education.
4. The researcher will collect the questionnaires from the mailbox of Mr. Nordberg.

Technique Used for Analysis of Data

The researcher will manually tabulate the number of responses for each item and domain (SD, MD, U, MA, SA) in the item using the tally system (/=1, ////=5).

Analysis of the data will determine if there is relationship between job satisfaction and stress; a relationship between job satisfaction and the subjects' perceived levels of physical fitness, and a relationship between stress and perceived level of physical fitness. On the basis of this analysis, the following groups of questions will be compared using tables:

1. Table 1 1 - 6
2. Table 2 7 - 14
3. Table 3 23 - 33

Table 1

The purpose of this table will be to visualize the faculty members' perceived level of job satisfaction and stress.

Item	SD	MD	U	MA	SA
1.Tiresome					
2.Discouraging					
3.Boring					
4.Useless					
5.Nothing to do					
6.Nothing to look forward to					

Table 2

The purpose of this table will be to visualize the faculty members' perceived job satisfaction and stress.

Item	SD	MD	U	MA	SA
7.Exciting					
8.Fascinating					
9.Challenging					
10.Interesting					
11.Creative					
12.Relaxing					
13.New things to do					
14.Gives sense of accomplishment					

Table 3

The purpose of this table is to visualize the faculty members' perceived level of physical fitness and stress.

Item	SD	MD	U	MA	SA
23.Have a lot of minor ailments					
24.Need little or no medical care					
25.feel tired all the time					
26.Must be careful what I do					
27.Poor					
28.Failing					
29.Never felt better					
30.Excellent					
31.Better condition than most people my age					
32.Do enough physical activity					
33.Get fatigued easily while doing work					

Threats to Validity

Internal Validity

A threat to internal validity is the factor of honesty. Subjects may not answer the questions honestly for unknown reasons. A second threat of internal validity is answering questions carelessly. In this instance, questions would be answered in the same dimension from (1-14). For this reason a built in check will be established. For example, if a person responds strongly agree regarding the job as boring and strongly agree regarding the job as interesting, and the subject does this for other items, then there is a discrepancy. A third threat to internal validity is if a question(s) is left blank. If this happens, there will not be the same number of response for each item.

External Validity

A threat to external validity is if a small sample, such as 10%, returns the questionnaires. Another threat to external validity is only a select group will be included in this study. Only the faculty teaching second summer session on campus (105/370) will be included in this study.

Invalid Questionnaires

Questionnaires will be counted invalid for three reasons. A questionnaire will be invalid if a subject fails to answer ten or more questions. The second reason is if a person responds in the same dimension from (1-14), unless

marked undecided. Finally, if questionnaires are returned after the eighth day, they will be counted invalid.

July 24, 1996

Dear Edinboro Faculty,

My name is Rosanne Siggia. I am a graduate student completing a research project. I am asking for your assistance in answering this questionnaire so I may complete my research study.

The purpose of this study is to determine if there is a relationship between university faculty members' perceived level of physical fitness and their work satisfaction versus their stress level. This study is limited to summer faculty due to time constraints. Each questionnaire returned will be significant in completing this study.

Please send this questionnaire through Edinboro's campus mail in the enclosed envelope by Monday, July 29. This questionnaire is anonymous - don't put your name on it.

Thank you in advance for your cooperation.

Sincerely,

Rosanne Siggia

Circle the abbreviation that best indicates how you feel about your current position at the university. The Likert Scale indicates the following:

SD = strongly disagree
MD = moderately disagree
U = undecided
MA = moderately agree
SA = strongly agree

1.	Tiresome.	SD	MD	U	MA	SA
2.	Discouraging.	SD	MD	U	MA	SA
3.	Boring.	SD	MD	U	MA	SA
4.	Useless.	SD	MD	U	MA	SA
5.	Nothing to do.	SD	MD	U	MA	SA
6.	Nothing to look forward to. .	SD	MD	U	MA	SA
7.	Exciting.	SD	MD	U	MA	SA
8.	Fascinating.	SD	MD	U	MA	SA
9.	Challenging.	SD	MD	U	MA	SA
10.	Interesting.	SD	MD	U	MA	SA
11.	Creative.	SD	MD	U	MA	SA
12.	Relaxing.	SD	MD	U	MA	SA
13.	New things to do.	SD	MD	U	MA	SA
14.	Gives sense of accomplishment	SD	MD	U	MA	SA
15.	Barely live on income. . . .	SD	MD	U	MA	SA
16.	Insecure.	SD	MD	U	MA	SA
17.	No money to meet emergencies.	SD	MD	U	MA	SA
18.	Good life insurance plan. . .	SD	MD	U	MA	SA
19.	Income provides luxuries. . .	SD	MD	U	MA	SA
20.	Coworkers are hard to meet. .	SD	MD	U	MA	SA
21.	Coworkers complain.	SD	MD	U	MA	SA

22. Coworkers are interesting. . SD MD U MA SA

Health

23. Have a lot of minor ailments. SD MD U MA SA

24. Need little or no medical care. . . . . .SD MD U MA SA

25. Feel tired all the time. . SD MD U MA SA

26. Must be careful what I do . .SD MD U MA SA

27. Poor. . . . . .SD MD U MA SA

28. Failing. . . . . ..SD MD U MA SA

29. Never felt better. . . . . SD MD U MA SA

30. Excellent. . . . . SD MD U MA SA

31. Better condition than most people my age. . . . . SD MD U MA SA

32. Do enough physical activity.SD MD U MA SA

33. Get fatigued easily while doing physical work. . . .. SD MD U MA SA

NOTE: This questionnaire is based upon the Retirement Descriptive Index (RDI) (Hulin, Kendal, and Smith, 1969), the Job Descriptive Index (JDI) (Hulin, Kendall, Smith, 1969; Kock and Steers, 1978), and the Lifestyle Questionnaire (Cavendish, 1991).

Chapter 4

Presentation of Data

Introduction

The purpose of this study was to determine if a relationship exists between Edinboro University faculty members' perceived level of physical fitness and their work satisfaction versus their stress level.

Subjects

For this research project a selected sample of 105 faculty members at Edinboro University was identified. There were originally 108 members, but three were not listed in the Edinboro University campus directory. The 105 faculty members were identified as teaching at Edinboro's main campus during the second summer session. Each identified faculty member was mailed and requested to complete and return the questionnaire that was adapted from

the Retirement Descriptive Index (RDI), Job Descriptive Index (JDI), and the Lifestyle Questionnaire.

Response Information

The total possible responses of this study were 105. The sample population that responded to this study was 53. This was an actual rate of 50.5% of the sample population.

Three of the 53 questionnaires returned were counted invalid. Two of the three questionnaires were invalid because the subjects answered in the same dimension for (1-14). For example, a subject marked strongly agree for both of the questions indicating that the job was boring and interesting. On another questionnaire, more than ten items were left blank.

The researcher has tabulated a total of 50 responses for each item. However, questions 2, 18, 21, 24, and 26 have only 49 responses because these items were skipped by individual subjects.

Data Analysis

Job Satisfaction

A significant number of Edinboro faculty members who responded to the questionnaire appears to have a high level of job satisfaction. 90% of the respondents strongly disagreed their job was useless (item 4) and 100% strongly disagreed there was nothing to do on the job (item 5). Therefore, it appears the faculty members perceive what they

are doing is useful and important. 94% of the subjects look forward to work (item 6).

Physical Fitness

A considerable number of faculty members perceived themselves in better physical condition than most people their age (item 31). Almost half of the subjects moderately agreed and an additional 36% strongly agreed their physical condition surpassed most of their peers. 48% of the faculty members agreed they do enough physical activity (item 32). It appears that some of the faculty members who feel they are in better physical condition than most people their age, perceive their physical fitness level to need improvement. Over three-fifths of the subjects disagreed they get fatigued easily while doing physical work (item 33).

Stress

The Edinboro faculty sample generally appears to have a lower level of stress based on the information about job satisfaction. The faculty members appear to be highly motivated for the most part. 94% feel their job is interesting (item 10). 90% of the members feel their job gives them a sense of accomplishment (item 14).

There is an indication of some job-related stress among the university faculty. Over half of the people (64%) agreed that their position is not relaxing (item 12). 16% of the respondents viewed their job as tiresome (item 1) and

one-fifth of the sample agreed they are tired all of the time (item 25).

Health Care

Over half of the sample of the Edinboro University faculty members implied they need some (moderately agree and moderately disagree) medical care (item 24). 12% of the subjects moderately agreed that they have a lot of minor ailments; 6% were undecided (item 23). A lot of minor ailments could be a sign of stress or poor physical condition. More energy could be achieved from a higher level of physical fitness, which could lead to increased productivity.

Analysis of Hypothesis Results

The hypothesis was developed to determine if physical fitness can reduce the stress caused by the work environment as measured by the questionnaire adapted from the RDI, JDI, and the Lifestyle Questionnaire. The data associated with the hypothesis generally showed: 84% of the subjects perceived themselves in better physical condition than most people their age (item 31). Item 31 indicates the faculty members perceive themselves to be in good physical condition. 90% of the faculty members felt their job gave them a sense of accomplishment (item 14). In addition, almost all (94%) of the employees find their job interesting (item 10). Over half of the faculty members indicated a

higher level of job satisfaction than stress based on their responses from questions 1-14. About one in every five faculty members felt their position was discouraging (item 2). Item 2 shows more faculty members in this study generally have a lower level of stress due to a greater level of job satisfaction.

Summary

Chapter four has presented the data collected for this research project and analyzed the information in a manner which makes it possible to determine relationships. The data indicated that a significant relationship generally existed between the faculty members' perceived level of physical fitness and their job satisfaction versus their stress level by using a questionnaire adapted from the RDI, JDI, and Lifestyle questionnaire.

Table 1

The purpose of this table will be to visualize the faculty members' perceived level of job satisfaction and stress. An = separates the actual number of people with the percentage.

Item	SD	MD	U	MA	SA
1. Tiresome	25=50%	17=34%	0	8=16%	0
2. Discouraging	22=44%	13=27%	3=6%	10=20%	1=2%
3. Boring	37=74%	10=20%	3=6%	0	0
4. Useless	45=90%	2=4%	1=2%	2=4%	0
5. Nothing to do	50=100%	0	0	0	0
6. Nothing to look forward to	40=80%	7=14%	1=2%	1=2%	1=2%

Table 2

The purpose of this table will be to visualize the faculty members' perceived job satisfaction and stress.

Item	SD	MD	U	MA	SA
7.Exciting	1=2%	3=6%	4=8%	28=56%	14=28%
8.Fascinating	0	3=6%	5=10%	31=62%	11=22%
9.Challenging	1=2%	1=2%	3=6%	23=46%	22=44%
10.Interesting	0	1=2%	2=4%	23=46%	24=48%
11.Creative	0	5=10%	5=10%	20=40%	20=40%
12.Relaxing	9=18%	23=46%	7=14%	10=20%	1=2%
13.New things to do	0	4=8%	4=8%	23=46%	19=38%
14.Gives sense of accomplishment	1=2%	2=4%	2=4%	24=48%	21=42%

Table 3

The purpose of this table is to visualize the faculty members' perceived level of physical fitness and stress.

Item	SD	MD	U	MA	SA
23.Have a lot of minor ailments	27=54%	14=28%	3=6%	6=12%	0
24.Need little or no medical care	3=6%	7=14%	2=4%	20=40%	17=35%
25.feel tired all the time	13=26%	22=44%	5=10%	8=16%	2=4%
26.Must be careful what I do	29=59%	14=29%	1=2%	4=8%	1=2%
27.Poor	41=82%	6=12%	2=4%	1=2%	0
28.Failing	44=88%	4=8%	1=2%	1=2%	0
29.Never felt better	5=10%	7=14%	9=18%	25=50%	4=8%
30.Excellent	2=4%	5=10%	6=12%	26=52%	11=22%
31.Better condition than most people my age	0	0	8=16%	24=48%	18=36%
32.Do enough physical activity	5=10%	15=30%	6=12%	16=32%	8=16%
33.Get fatigued easily while doing work	12=24%	22=44%	2=4%	14=28%	0

Chapter 5

Summary, Conclusions, and Recommendations

The Research Problem

This research project was designed to investigate the relationship between university faculty members' perceived level of physical fitness and their work satisfaction versus their stress level.

Summary

The review of the literature for this project provided evidence that there is generally a significant relationship between the level of physical fitness and job satisfaction and stress. The study developed by the researcher also provided evidence that generally a significant relationship exists between the faculty members' perceived level of physical fitness and their job satisfaction/job stress at Edinboro University of Pennsylvania.

The subjects of this project included a selected sample of 105 out of approximately 370 university faculty members at Edinboro University. Of the 105 questionnaires that were mailed to the faculty members, fifty-three employees returned questionnaires. Fifty of the questionnaires were valid. The response rate comprised of 50.5%, but 48% of the questionnaires were used to calculate the results which are displayed in Chapter four.

Conclusions

The hypothesis developed for this study was expected to show being physically fit can reduce the stress caused by the work environment. A conclusion that can be drawn from the findings of this study is that generally a significant relationship existed between faculty members who perceived themselves in good physical condition and their levels of job satisfaction and stress. It appears that over half of the faculty members perceive themselves to be in good physical shape and enjoy their position at Edinboro University, but do not find their work relaxing.

Discussion

The principle of this study was to determine if university faculty members who perceive themselves to be physically fit experience greater levels of job satisfaction and lower levels of stress. The conclusion offers support to previous studies and reports that overall wellness, with

physical fitness identified as one of its primary components, produces healthier employees, increases levels of job satisfaction, morale, and productivity, and reduces absenteeism, stress, burnout, and medical costs. The money that a company or institution spends on a health promotion program is a profitable investment for the future.

A dean who is interested in physical fitness could have a positive impact on an institution. A fitness-minded president or dean at a university might become committed to supporting a wellness program, just as a top executive at a company (Roberts and Harris, 1989).

Recommendations

This study was limited to participants responding to a questionnaire that was comprised of 14 items regarding job satisfaction and stress, 8 items primarily on job satisfaction, and 11 items on health and physical fitness. It is recommended that further study focus on more data gathered regarding physical exercise habits, employee productivity, and whether faculty members have an interest in a fitness center at their university. It is also recommended that the Minnesota Job Satisfaction Questionnaire-Short form be used as one of the instruments for gathering data.

Given the importance of the positions that the faculty members play in the overall educational process at Edinboro University, it appears that the employees would benefit

using a fitness facility tailored to meet the needs of each individual. Perhaps a fitness facility would help meet the needs of university faculty members. In turn, they could more effectively meet the needs of their graduate and undergraduate students. A health promotion program may assist faculty members in fulfilling their role as educational leaders.

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