The Relationship of Job Performance to Exercise in a Hospital Fitness Program

Sheryl A. Porter

*Western Michigan University*

Follow this and additional works at: [http://scholarworks.wmich.edu/masters_theses](http://scholarworks.wmich.edu/masters_theses)

Part of the [Sports Medicine Commons](http://scholarworks.wmich.edu/masters_theses)

**Recommended Citation**


[http://scholarworks.wmich.edu/masters_theses/1314](http://scholarworks.wmich.edu/masters_theses/1314)

This Masters Thesis-Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Master's Theses by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.
THE RELATIONSHIP OF JOB PERFORMANCE TO EXERCISE IN A HOSPITAL FITNESS PROGRAM

by

Sheryl A. Porter

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Health, Physical Education,
and Recreation

Western Michigan University
Kalamazoo, Michigan
August 1986

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
An investigation of the relationship between job performance and exercise was conducted over a one year period among a group of hospital employees. Participation in the in-house fitness program was voluntary. The experimental group was employed a minimum of one year prior to the study and exercised at least twice a week the first year the fitness program began. Job performance ratings were compared to a matched group using a correlated t-test. The findings were non-significant.
ACKNOWLEDGEMENTS

I sincerely appreciate the assistance of Barb Welton in data collection and Shawn Bennett and Kay Sterken in word processing from Butterworth Hospital.

I am also grateful for the encouragement and guidance of Dr. Edward Heinig and many other instructors at Western Michigan University.

Sheryl A. Porter
INFORMATION TO USERS

This reproduction was made from a copy of a document sent to us for microfilming. While the most advanced technology has been used to photograph and reproduce this document, the quality of the reproduction is heavily dependent upon the quality of the material submitted.

The following explanation of techniques is provided to help clarify markings or notations which may appear on this reproduction.

1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting through an image and duplicating adjacent pages to assure complete continuity.

2. When an image on the film is obliterated with a round black mark, it is an indication of either blurred copy because of movement during exposure, duplicate copy, or copyrighted materials that should not have been filmed. For blurred pages, a good image of the page can be found in the adjacent frame. If copyrighted materials were deleted, a target note will appear listing the pages in the adjacent frame.

3. When a map, drawing or chart, etc., is part of the material being photographed, a definite method of "sectioning" the material has been followed. It is customary to begin filming at the upper left hand corner of a large sheet and to continue from left to right in equal sections with small overlaps. If necessary, sectioning is continued again—beginning below the first row and continuing on until complete.

4. For illustrations that cannot be satisfactorily reproduced by xerographic means, photographic prints can be purchased at additional cost and inserted into your xerographic copy. These prints are available upon request from the Dissertations Customer Services Department.

5. Some pages in any document may have indistinct print. In all cases the best available copy has been filmed.
Porter, Sheryl Ann

THE RELATIONSHIP OF JOB PERFORMANCE TO EXERCISE IN A HOSPITAL FITNESS PROGRAM

Western Michigan University  M.S.  1986

University Microfilms International  300 N. Zeeb Road, Ann Arbor, MI 48106
PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark ✓.

1. Glossy photographs or pages
2. Colored illustrations, paper or print
3. Photographs with dark background
4. Illustrations are poor copy
5. Pages with black marks, not original copy ✓
6. Print shows through as there is text on both sides of page
7. Indistinct, broken or small print on several pages
8. Print exceeds margin requirements ✓
9. Tightly bound copy with print lost in spine
10. Computer printout pages with indistinct print
11. Page(s) lacking when material received, and not available from school or author.
12. Page(s) seem to be missing in numbering only as text follows.
13. Two pages numbered. Text follows.
14. Curling and wrinkled pages
15. Dissertation contains pages with print at a slant, filmed as received
16. Other

University Microfilms International

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
LIST OF TABLES

1. Exercise Equipment Available to Employees.............6
INTRODUCTION

In theory, an employee fitness program could enhance job performance by improving personal health, increasing employee morale, reducing stress, and enhancing an overall sense of well-being. In 1982, the medical care system provided the American public with $287 billion worth of goods and services. Ninety-six percent of that money was spent on prevention and health promotion (Ainsworth & O'Donnell, 1984). Reducing these costs and improving productivity by implementing employee wellness programs has been a priority among American businesses in the past decade.

Strong associations have been demonstrated between perceived increases in work performance and participation in an exercise program (Palmer, Pauly, & Wright, 1982). This study proposes to validate this theory by reviewing the annual performance ratings of employees who participated in a controlled exercise program in a hospital setting.
REVIEW OF THE LITERATURE

Evaluation of worksite health promotion programs is still in its infancy. A major problem involved in evaluating worksite health promotion programs in the past has been the lack of a control group. Wechsler (cited in Ainsworth & O'Donnell, 1984) pointed to studies stating that employees participating in health promotion programs have fewer sick days, are healthier in general, and are more productive. However, such studies have failed to account for the bias of self-selection. That is, most employees who enroll in health promotion programs were healthy before they began to participate, whereas employees who were older, overweight, and at generally higher risk, did not enroll.

Wechsler (cited in Ainsworth & O'Donnell, 1984) supported this theory also by stating that it was possible that participants enroll in such programs to further their enjoyment of activities that they had previously enjoyed outside the program purely for reasons of convenience and economic savings.

The need for a control was made evident by several other points made by Wechsler (cited in Ainsworth & O'Donnell, 1984). A fitness program study must take into account the fact that better fitness through sports and physical activity is a widespread phenomenon in society. Secondly, a program aimed at improving morale or increasing productivity is subject to changes in the overall economic climate unrelated and beyond the control of a program intervention.

Wechsler (cited in Ainsworth & O'Donnell, 1984) also pointed
out that one of the greatest stumbling blocks to collecting data in an employee assistance program was the inability to assure employees of confidentiality. Although the expense is much greater, many corporations choose to offer programs outside their own facilities to alleviate the problem of confidentiality. Data collection is made more difficult if the program is not in-house.

A growing body of evidence indicates that physical activity has a protective effect on a person's health (Bowne, 1984). Shephard (1983) stated that employee fitness/lifestyle programs could be justified not only on grounds of personal health, but also in terms of corporate effectiveness. From the corporate standpoint, the crucial factor is that positive changes in worker performance are induced for a moderate financial outlay, irrespective of whether the changes in worker performance have a specific origin.

There was an overwhelming consensus supporting fitness programs in the research. Smith, chairman of Kimberly-Clark reasoned:

Kimberly-Clark has a substantial investment in its employees. To us, it is simply good business sense to keep them feeling well, which not only keeps them on the job but even helps them do a better job. If our program is successful, we can look forward to increased productivity. Also, we may have found a partial solution to the continually mounting costs of direct medical care. (Smith, cited in Higgins & Phillips, 1979, p. 53)

Prudential Insurance Company sponsors an in-house fitness program in Houston (Bowne, 1984). It had been in operation for six years when they studied the effects of participation in their fitness program upon disability and health care costs. Prudential found that their program has greater appeal to the better educated
employees, to males, and to management personnel. Since these
groups are in higher salaried and management positions, their par­
ticipation generates greater profits to the company.

Middle management is one of the key areas to teach about the
benefits of exercise. General Foods (cited in Cooper, 1980) has
incorporated a fitness program into its one week middle management
training program. Their immediate benefits have been a perceived
capacity to handle the intensity and stress associated with the
management program, decreased fatigue, and more energy, resulting
in increased productivity.

In the intermediate run the managers' self-image and the image
of the company improves. One manager reported, "I'm impressed with
the fact that the company cares enough about our personal well-being
to incorporate fitness." (Cooper, 1980, p. 6)

For the company this pays off in increased company morale, job
satisfaction, loyalty, and reduced health costs. In the long term
the manager is simply able to put in more productive years of work
and the company experiences a drop in turnover.

Edington (1985) claimed:

We don't have the definitive study, but we have enough data
where I feel very comfortable talking to CEO's about well­
ness programs. I also know that if I run into a CEO who
doesn't want to be persuaded, I won't be able to persuade
him or her. In that case, I recommend they just sit on the
sidelines for five or ten years, at which time the numbers
will either be there or they won't. (p. 47)

The Program

The Butterworth Hospital Employee Fitness Program was designed
to increase the efficiency of the participants' cardiovascular system utilizing an aerobic circuit training format. The facility was located within the hospital and had modern exercise equipment, lockers, and showers available. The program began in January of 1983 with exercise sessions offered at 7:00-8:00 a.m. and between 12:00-6:00 p.m. daily. All three shifts were able to participate during these hours. A fee of $25.00 for three months participation was charged. This program has been conducted by the author since its inception and has remained consistent throughout the time period of this study.

Each session consisted of a five to ten minute warm up of primarily flexibility exercises, approximately thirty minutes on a fifteen station aerobic circuit, and a five minute cool down (see Table 1 for a list of available equipment).

Prior to the first exercise session, the employee had a physical examination, fasting blood cholesterol drawn, and completed a "Health and Lifestyle Questionnaire" (see Appendix A). The questionnaire was sent to a private service, National Computer Systems, Inc., to be analyzed and was completely confidential. It was returned to the participant within three weeks and indicated ways the individual could alter his/her lifestyle to reduce risk factors to certain diseases.

During the first week of the program each participant's flexibility, endurance, strength, and percentage of body fat were assessed. Individualized goals were then established for each area. The last week of the session, each area was reassessed to monitor
improvement. New goals were then established. A target heart rate was determined using a maximum age predicted rate (200 minus their age divided by seventy and ninety percent). Maintaining that rate for twenty to thirty minutes three times per week was emphasized.

Table 1
Exercise Equipment Available to Employees

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycles</td>
<td>2</td>
</tr>
<tr>
<td>Treadmills</td>
<td>2</td>
</tr>
<tr>
<td>Cross Country Ski Machine</td>
<td>1</td>
</tr>
<tr>
<td>Arm Ergometer</td>
<td>1</td>
</tr>
<tr>
<td>Trunk Extension Machine</td>
<td>1</td>
</tr>
<tr>
<td>Situp Machine</td>
<td>1</td>
</tr>
<tr>
<td>Leg Extension Machine</td>
<td>1</td>
</tr>
<tr>
<td>Upper Body Machines</td>
<td>2</td>
</tr>
<tr>
<td>Wall Pulley Unit</td>
<td>1</td>
</tr>
<tr>
<td>Jump Ropes</td>
<td></td>
</tr>
<tr>
<td>Weighted</td>
<td>3</td>
</tr>
<tr>
<td>Non-weighted</td>
<td>4</td>
</tr>
<tr>
<td>Rowing Machine</td>
<td>1</td>
</tr>
</tbody>
</table>

A metronome and computerized clock, with variable time sequences, were used to pace and time the movement of the participants. The electric metronome was developed by Franz manufacturing and has a light at the top which enables participants to either listen to
the clicking sound, set at fifty beats per minute, or watch the light. With this system, everyone moved in a counterclockwise direction at the same time so that each piece of equipment could be used. The computerized clock, which was developed and donated to Butterworth Hospital by a former cardiac rehabilitation patient, was built with sixteen time sequences. The participants used the ninety second time interval for the first six weeks and then advanced to two minutes for the next six weeks. After advancing to two minutes, they were encouraged to increase resistance on the exercise equipment. This enabled them to keep improving their fitness status by providing an "overload" as encouraged by DeVries (cited in Hockey, 1977). For significant improvement to take place, an overload is necessary meaning simply that it is necessary to subject the body to a task slightly beyond its normal level.

DeVries indicated:

Whether we are concerned with strength, muscular endurance, or cardiovascular endurance, improvement in function occurs only when the system involved is challenged. Improvement occurs when, and only when, the workload is greater than that to which the individual is accustomed. (Hockey, p. 188)

The Assessment

Fitness measurements of each employee included endurance, flexibility, percentage of body fat, and strength. All participants were assessed the first week and again after twelve weeks.

Endurance was measured by counting a recovery heart rate after stepping up on a thirteen inch bench for three minutes. The recovery rate was counted for one minute. The participant stepped
to a cadence set on the metronome at 96 beats per minute.

Flexibility was measured using a "sit and reach" test with the employee's feet eight inches apart against a platform. A yardstick was placed on the edge of the platform with fifteen inches even with the end. The measurement was taken from the area the person could reach without bouncing and fully extending the legs and arms.

A trunk extension measurement was taken while the employees lay prone on the floor, put their hands behind their head, and lifted their trunk off the floor. Another person was needed to hold down the hips of the person being tested. The measurement was taken with a yardstick from the employee's chin to the floor.

Body fat percentage calculations were taken with Lange skin fold calipers. The measurement for females was taken one inch above the suprailiac (hip), the midpoint of the tricep (upper arm), and mid-thigh. The measurement for males was taken between the acromion process (shoulder) and the breast, one inch horizontally from the umbilicus, and mid-thigh.

Strength measurements were taken of the abdominal group by performance of as many bent knee situps done in one minute as possible. Leg, arm, and shoulder strength were measured on Norsk exercise equipment by completing one repetition at a maximum level. Norsk brand exercise equipment was developed in 1970 in Norway by two physical therapists, Hans Gunnari and Olaf Evjenth.

The Participants

The criteria for inclusion in this study required that the
participants were employed at Butterworth Hospital during 1982-1984. The experimental group of 31 participants chose voluntarily to be members of the in-house fitness program. Approximately four hundred employees exercised in the fitness program. The experimental group was selected from employees who had participated on an average of at least twice a week in 1983-1984. The control group of 31 participants had never been members of the fitness program and were matched to the experimental group by the department in which they worked. It was not determined if the control group exercised regularly and the selections were made at random. Matched groups were used to reduce subjectivity of employee appraisal which was uniform within departments but different within the hospital. For example, nursing used an appraisal form which is different from the pharmacy appraisal form (see Appendices B and C).

The population consisted of matched pairs of personnel from the Laboratory (7 control/7 experimental), Nursing (3 control/3 experimental), Finance (3 control/3 experimental), Surgery (2 control/2 experimental), Pharmacy (2 control/2 experimental), Respiratory Therapy (2 control/2 experimental), Plant Operations (2 control/2 experimental), Library (2 control/2 experimental), Administration (1 control/1 experimental), Human Resources (1 control/1 experimental), Medical Records (1 control/1 experimental), Volunteer Services (1 control/1 experimental), Biomedical Communications (1 control/1 experimental), Medical Social Work (1 control/1 experimental), Dietary (1 control/1 experimental), and Loss Prevention (1 control/1 experimental).
The Job Performance Appraisal

Butterworth Hospital has approximately 2,800 employees. All employees are reviewed on, or as close as possible to, their anniversary date (date of employment). The appraisal was designed by the Butterworth Hospital Compensation Task Force (1982) to determine the individual's overall performance in his/her job.

Employees are graded on a scale of one to five with five being exceptional and one being unsatisfactory. Payment per hour is increased by one percent to five percent depending on the merit pay appraisal rating. Once employees have reached an hourly pay limit, set by their job description, they receive bonuses instead of hourly pay increases.

Management personnel account for approximately ten percent of the hospital staff. They were evaluated on the following criteria: responsibilities, individual characteristics, and management methods.

Medical staff account for approximately thirty percent of the hospital staff. They were evaluated according to their clinical practice skills, interpersonal relations, education, and time management.

Technical staff account for approximately sixty percent of the hospital staff. This appraisal form considered the employee's attendance, attitude, interpersonal relations, organization, quality and quantity of work, and knowledge.

The Results

Raw data on performance were compiled by an employee of the
Human Resources Department of Butterworth Hospital. Merit pay increase percentages were compared for the years 1982-1983 and 1983-1984. Confidentiality of employee records precluded this researcher from working with the files (see Appendices D and E).

The mean age of the population and percentages of males and females corresponded closely with that of the hospital. The median age of Butterworth Hospital employees was twenty-eight. Males accounted for thirteen percent of the population and females accounted for eighty-seven percent (Borton & Hendershot, 1986). The mean age of the experimental group was thirty-four and nine-tenths years. The mean age of the control group was thirty-four and two-tenths years. Males accounted for sixteen percent of the experimental group and females eighty-four percent.

A correlated t-test using the direct-difference method on a before/after design was used to compare job performance ratings. The sum of the mean job performance scores for the control group was five. The difference between job performance scores when compared to the control group showed a nonsignificant difference (t = 0.694, 30 df, critical t = 2.042 at .05 level of significance).
DISCUSSION

Approximately ten percent of the 2,800 employees at Butterworth Hospital participate in the employee fitness program during each three month session. Participation in the program was done on the employees' own time. The only criteria for entry into the fitness program was a physical and consent form signed by the participants' physician and a fee of $25.00. Therefore, the population of the experimental group was self-selected.

Confounding variables may include the possibility that employees motivated to participate in a fitness program were already at a maximum level of job performance. The findings show that thirteen participants in the experimental group were at their maximum pay level as compared to only six in the control. Mean change scores in job performance were greater for the experimental group (ten) than the control group (five) but the results were not statistically significant when the direct-difference method was used.

Employee appraisal forms may not be a reliable method of assessing a person's performance. The department manager may not be as objective as is needed to make a fair appraisal. Factors such as the candidates sex, race, or age may play a part in the managers' assessment. A matched group by department was used in this study to try to reduce subjectivity. Although the appraisal form was used by the same department in 1982-1984, the person doing the appraisal may have been different. This would have biased the
The length of employment criteria for inclusion in the study biased the study toward longer service employees. This increased the mean age of the population studied (34.5 years) compared to the population of the hospital overall (28 years). However, the difference in mean ages between the experimental group (34.9 years) and the control group (34.2 years) was not significant. Therefore, the age of the participants was probably not a factor in the findings.

Seventy-two participants of the fitness program met the requirement of having exercised at least two times per week during 1983. When merit pay levels were compared for 1982-1983 and 1983-1984, only thirty-one samples from the experimental group were returned due to lack of employment for the full year of 1982 or termination of employment before the end of 1983. The raw data was returned using a generic numbering system to protect confidentiality. The control group was matched by department to the experimental group and merit pay levels were also returned generically. Therefore, the control group may have exercised regularly, but confidentiality of employee records did not allow the author to inquire about the exercise habits of the control group.
CONCLUSIONS and RECOMMENDATIONS

Certainly a limitation of this study was the sample taken from the select population of Butterworth Hospital. Since the mean age and sex percentages of the study groups matched closely with the population of the hospital as a whole, the results of this study can be generalized to Butterworth Hospital. The results may be applied to this population only. It was not known how many participants included in this research may have been exercising regularly on their own before the fitness program began in 1983.

Baun (1984) said:

Establishing a fitness program can pay off for a company even if you can't prove a causal association. The issue is not whether exercise makes people more productive, but rather that people who exercise are more productive and it is worth a company's investment to make a program available for employees who already exercise and to attract new employees who exercise as well. We've shown that people who are successful at exercise are also successful at their jobs, and that's a powerful statement. (p. 30)

Pyle (cited in Hobson & Hoffman, 1984) has developed a timetable to determine when a company can expect benefits from an Employee Assistance Program. Short-term (three to four months) values of a fitness program are to the individual participant who benefits from improved overall physiology, especially reduced risk of cardiovascular disease and minimization of various other health hazards. During the intermediate time frame (one year), the company sees reduced absenteeism and improved employee morale. It is not until the longer term (minimum of 3-5 years), Pyle main-
tains, that corporate management truly begin to reap the benefits of Employee Assistance Programs. It is during this time frame that increases in productivity and overall organizational effectiveness can be noticed. The fitness program will now have had sufficient time to produce significant impact on health care costs. It is during this period, Pyle claims, that a cost benefit analysis should be conducted to get a true evaluation of the fitness program.

A repeated comparison with a longer term study may show significant differences in job performance ratings comparing participants in the Butterworth Hospital Fitness Program. This short term study lacked sufficient scope to show the differences this writer believes exist between fit and sedentary employees. This researcher hopes to conduct such a study in the near future with help from Butterworth Hospital.
DEFINITIONS

Cardiovascular endurance: The ability to continue or persist in strenuous tasks involving large muscle groups for long periods of time.

Ergometer: An apparatus for measuring the work capacity of a muscle.

Flexibility: The functional capacity of the joints to move through a full range of motion.

Strength: The maximal one effort force that can be exerted against a resistance.
Appendix A

Example of a Health and Lifestyle Questionnaire
Mark the PHYSICAL ACTIVITY LEVEL usually required by your JOB or DAILY ROUTINE (a few occupations are shown as examples).

<table>
<thead>
<tr>
<th>LOW</th>
<th>MODERATE</th>
<th>HEAVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Work</td>
<td>Assembly Line</td>
<td>Lumberjack/Heavy Manual Labor</td>
</tr>
</tbody>
</table>

YES  NO  Do you-

2  O  O  Know how to monitor your exercise level by taking your pulse?
3  O  O  Get regular vigorous exercise, such as jogging, for at least 20 minutes, 3 times per week?
4  O  O  Get some type of REGULAR EXERCISE?

If “yes” for REGULAR EXERCISE, mark HOW OFTEN AND HOW LONG per session for each type. If “no”, go to unit 6.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Don't Do This</th>
<th>How Often (Times/week)</th>
<th>How Long (Minutes/session)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobics</td>
<td></td>
<td>1 2 3 4 5+</td>
<td>15 30 45 60+</td>
</tr>
<tr>
<td>Walking slow (20 min/mile)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walking fast (15 min/mile)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jogging (10 min/mile)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Running (8 min/mile)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycling slow (6 mph)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cycling fast (12 mph)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming slow (25 yrs/min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swimming fast (50 yrs/min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racquet sports (doubles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racquet sports (singles)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Callisthenics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dancing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basketball, football or similar sport</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf or bowling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Downhill skiing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cross country skiing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rowing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SMOKING HABITS

Mark items that apply to SMOKING.

1  O  I do not smoke and never have. If so, go to unit 7.
2  O  I currently smoke cigarettes.
3  O  I used to smoke cigarettes, but I stopped.
4  O  I smoke a pipe/cigar and inhale 5 or more times per day.
5  O  I would like to quit smoking.

If you have EVER SMOKED CIGARETTES, mark daily amount and total number of years you have smoked.

Daily Amount: Number of Years
6  O  ½ pack/day or less
7  Less than 1 year
8  O  1 - 2 packs/day
9  O  1 - 5 years
10  O  2 packs or more/day
11  O  6 - 10 years
12  O  More than 10 years

If you FORMERLY SMOKED CIGARETTES BUT STOPPED, mark number of years since you have stopped.

8  O  1 year
9  O  2 years
10  O  3 years
11  O  4 years
12  O  5 years
13  O  6 years
14  O  7 years
15  O  More than 7 years

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix B

Butterworth Hospital
Nursing Appraisal Form
### BUTTERWORTH HOSPITAL | LPN PERFORMANCE APPRAISAL

**I. CLINICAL PRACTICE**

**A. ASSESSMENT**
1. Obtains specified assessment data on admission according to unit policy
2. Observes and reports significant changes in client's condition to RN

**B. PLAN OF CARE**
Collaborates in the development of written care plans

**C. INTERVENTION**
1. Nursing action consistent with the plan of care
2. Anticipates and acts to maintain a safe therapeutic environment (i.e.: takes direct and appropriate action during stressful situations), keeps work area clean
3. Technical competence determined by unit need
4. Utilizes incidental teaching opportunities

**D. EVALUATES**
1. Documents the results of nursing activities and client's response
2. Participates in the ongoing evaluation of care given
3. Provides opportunities for client and/or significant others to evaluate care

**II. INTERPERSONAL RELATIONS**

**PROFESSIONAL BEHAVIOR**
1. Supports and encourages staff members
2. Communicates professionally with clients/significant others and staff
3. Respects all individual rights
4. Accepts responsibility and accountability of own nursing practice (i.e.: is aware of and complies with hospital and departmental policies)
5. Accepts constructive criticism
6. Gives constructive criticism

**III. EDUCATION**

**ASSUMES RESPONSIBILITY FOR SELF-DEVELOPMENT AND PROFESSIONAL GROWTH**
1. Participates in self-evaluation and implements goals for self growth
2. Utilizes formal and/or informal resources (i.e.: professional literature, workshops, inservices, professional organizations, college or university courses)

**IV. TIME MANAGEMENT**

**ESTABLISHES PRIORITIES USING OBSERVATIONS AND ASSESSMENTS TO IMPLEMENT DAILY CLIENT CARE**
1. Anticipates potential problems and adapts to change on unit
2. Shows initiative — utilizes time effectively to meet unit and patient needs
3. Complies with unit departmental scheduling guidelines and needs

**GOALS FOR GROWTH**

---

**To Be Re-evaluated:**
- [ ] 1 Month
- [ ] 2 Months
- [ ] 3 Months

**Signature:**
Department Head _____________________ Evaluator ______________________________ Employee ______________________________

**Date** _____________________ Date _____________________ Date _____________________

---

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix C

Butterworth Hospital Technical Staff Appraisal Form
# EMPLOYEE APPRAISAL

<table>
<thead>
<tr>
<th>EMPLOYEE NAME</th>
<th>REVIEW DATE</th>
<th>DEPT.</th>
<th>POS. NO.</th>
<th>TITLE</th>
<th>CURRENT RATE</th>
<th>GRADE/STEP</th>
</tr>
</thead>
</table>

## PART I

Please rate the Employee's Work Related Behavior during review period, (+) Meets Standards, (-) Below Standards. Enter plus or minus in the box for each category below.

- [ ] ATTENDANCE — Arrives at work on schedule. Takes breaks as scheduled.
- [ ] DEPENDABILITY — Completes a given task with minimum follow-up.
- [ ] APPEARANCE — Adheres to grooming standards. Wears and maintains proper uniform (where applicable).
- [ ] INTERPERSONAL RELATIONS — Communicates work related subjects in a courteous manner to fellow employees, supervisors and patients. Willingly assists others when possible.

Behavior Improvement Goals:

---

## PART II

Please rate the Employee's Work Related Performance during review period on a scale of 1 through 5.

1 = Outstanding, 2 = Exceeds Standards, 3 = Meets Standards, 4 = Below Standards, 5 = Unacceptable

Enter the performance number in the box for each category below.

- [ ] QUALITY — Is neat and accurate regardless of volume.
- [ ] KNOWLEDGE — Demonstrates through performance, an awareness of all job requirements.
- [ ] PROBLEM RESOLUTION — Resolves problems in a positive manner without requiring undue assistance from supervision.
- [ ] ORGANIZATION — Performs all tasks in an organized manner.

Total of numbers: 

Performance Improvement Goals:

---

<table>
<thead>
<tr>
<th>EMPLOYEE SIGNATURE</th>
<th>DATE</th>
<th>EVALUATOR SIGNATURE/TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TO BE RE-EVALUATED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MO.</td>
<td>2 MOS.</td>
<td>3 MOS.</td>
<td>6 MOS.</td>
</tr>
</tbody>
</table>
Appendix D

Before/After Appraisal Scores
### Appendix D

**Before/After Appraisal Scores**

<table>
<thead>
<tr>
<th>Pair</th>
<th>Before/After Change</th>
<th></th>
<th>Before/After Change</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X1</td>
<td>X2</td>
<td>X2-X1</td>
<td>X1</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>5</td>
<td>+2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>4</td>
<td>-1</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>3</td>
<td>4</td>
<td>+1</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>5</td>
<td>+2</td>
<td>5</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>5</td>
<td>4</td>
<td>-1</td>
<td>3</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
<table>
<thead>
<tr>
<th></th>
<th>5</th>
<th>5</th>
<th>0</th>
<th></th>
<th>5</th>
<th>5</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td></td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>22</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td></td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>3</td>
<td>5</td>
<td>+2</td>
<td></td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>24</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td></td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>5</td>
<td>3</td>
<td>-2</td>
<td></td>
<td>5</td>
<td>4</td>
<td>-1</td>
</tr>
<tr>
<td>26</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td></td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td></td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>28</td>
<td>4</td>
<td>5</td>
<td>+1</td>
<td></td>
<td>5</td>
<td>4</td>
<td>-1</td>
</tr>
<tr>
<td>29</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td></td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>3</td>
<td>4</td>
<td>+1</td>
<td></td>
<td>4</td>
<td>5</td>
<td>+1</td>
</tr>
<tr>
<td>31</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td></td>
<td>4</td>
<td>3</td>
<td>-1</td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix E

Direct Differences of Appraisal Scores
## Appendix E

### Direct Differences of Appraisal Scores

<table>
<thead>
<tr>
<th>Pair</th>
<th>Experimental Change Score</th>
<th>Control Change Score</th>
<th>Diff, D</th>
<th>D2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>+3</td>
<td>-3</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>+2</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>+1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>+1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>+1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>+1</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>-1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>+1</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>-1</td>
<td>0</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>+1</td>
<td>+1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13</td>
<td>0</td>
<td>-2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>+1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>+2</td>
<td>0</td>
<td>+2</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>0</td>
<td>+3</td>
<td>-3</td>
<td>9</td>
</tr>
<tr>
<td>18</td>
<td>0</td>
<td>+1</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>-1</td>
<td>0</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>---</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>22</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23</td>
<td>+2</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>24</td>
<td>+1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>-2</td>
<td>-1</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>28</td>
<td>+1</td>
<td>-1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>29</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>+1</td>
<td>+1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>31</td>
<td>0</td>
<td>-1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
