

Effects of Group Physical and Social Activities
on the Morale, Mental Alertness, and Self-Esteem
of Geriatric Residents in Nursing Homes

A Thesis

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We hereby recommend that the Thesis prepared under
our supervision by Teresa Harms Struck
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Introduction

The "sound mind in a sound body" axiom has long been accepted and believed despite a lack of supporting research. Studies have indicated that mental age decreases as chronological age increases and that mental decline is related to deteriorating physiological conditions. Horn and Cattell (1966) administered 23 different cognitive tests to 297 persons in state prisons. The primary mental abilities were found to decline after age 30. Reed and Reitan (1963) administered 20 different cognitive tests to 70 persons of all ages and found that the older persons performed lower in tests requiring immediate adaptive intelligence and complexity of responses. Riccitelli (1963) held that "Inactivity has a disintegrative action on the body. Exercise acts as a stimulant to both the mind and body Weakness is nature's signal to quit" (p. 299). Therefore, an important part of geriatric medicine is total rehabilitation--psychological, mental, and physical--resulting in restoration of the patient to his highest possible functional level (Lorenze, 1968).

Several studies have investigated the relationship between various physical fitness criteria and cognitive and personality measures. These studies fall into two main

catagories: research of the effects of different physical activities on geriatric and non-geriatric individuals.

Non-Geriatric Research

Handlon, Byrd, and Gaines (Note 1) and Handlon, Byrd, Gaines, Lloyd, and Cambell (Note 2) conducted studies to determine the perceived tension reducing qualities of the physical activity of bowling. Experienced bowlers had psychometric paper-and-pencil tests and interviews before and after bowling to determine levels of anxiety. The team of investigators concluded that support was obtained for those physicians and psychiatrists who advise tense and anxious patients to engage in physical activities to achieve a reduction in muscular tension and obtain a release from their anxieties.

Byrd (1963a; 1963b) surveyed 430 physicians and 54 psychiatrists in California to determine viewpoints and practices on exercise and tension. Of the respondents, 98% stated that they did believe physical activity was valuable in the relief of tension. Sports or activities for the relief of tension were prescribed by 90% of the respondents. Byrd (1963b) speculated that perhaps some of the activities were recommended for the social element accompanying the physical values.

Menninger (1948) suggested that physical exercise pro-

vides an outlet for instinctive aggressive drives and results in relaxation. Knudson and Davis (1949) observed several hundred mentally ill patients at the V.A. Hospital in Washington, D.C., and stated that physical activity was found to alleviate anxiety, release aggressive feelings, reduce guilt feelings, lessen mental confusion, resolve feelings of inferiority, improve social relationships, and stimulate a return to reality. Knudson and Davis concluded from these findings that exercise therapy has proven its usefulness in the treatment of psychiatric patients.

McAdam and Wang (1967) divided a group of 108 adult males into four treatment groups: exercise, classroom instruction, rest to music, and control. The study determined that a 10 min exercise period did not significantly affect performance on a symbol substitution test (simple mental task); however, exercise did tend to increase the performance on the mental task while the other treatments did not.

Hart and Shary (1964) correlated the SAT scores, Cumulative Index Scores, and Physical Fitness Index Scores of 60 college women taking a physical education course over a nine month period. Although they found that physical fitness did not prove to be a general predictor of academic success, they stated that it could be considered a nec-

essary factor for the improvement of academic index in the general education of the college student. This statement was made on the basis of a positive correlation of grade point average with the Physical Fitness Index Scores.

Gutin (1966) conducted a study in which he assigned 55 college men to a remedial physical fitness course for a 12 week period in a control group pre-test, post-test, design. Using the Employee Aptitude Survey, he found a significant positive relationship between degree of fitness improvement and degree of improvement in mental task ability following stress.

Lebato (Note 3) conducted a nine week study of three selected recreation activity classes (bowling, swimming, and modern dance) at Texas Woman's University using an experimental and a control group each comprising 15 women. Residual neuromuscular tension in the biceps femoris and rectus femoris muscles was determined by quantitative electromyography in a pre-test, mid-point test, and post-test design. Measurements were taken at three time intervals following activity. There was a significant decrease in muscle tension found in all groups for all three time intervals although the significance was greatest at the shortest time interval. There was no significant difference in muscle tension decrease between the three activity classes.

Sainsbury and Gibson (1954) suggested that an increase in bodily tension in one area of the body can be reliably associated with tension in other areas of the body. Electromyography was used to study muscle tension of 26 patients diagnosed as possessing anxiety states, and of 30 healthy soldiers in a relaxed state. The muscle tension of anxious subjects was significantly higher than that of the healthy subjects.

Barger (1968) studied stress relief in 500 University of Florida students as measured by ratings of the university physical education and athletic programs. Tension-reduction and energy-release were found to be important ways in which physical-education and other athletic programs contribute to student mental health.

Kobrynski (1973) stated that a well planned physical activation program stimulates physical and mental activity as well as increasing group social contacts.

Byrd (1967) stated the following:

In general, it can be said that there is definite evidence of social and psychological values of participation in physical activities. It may well be that individual, group, community, and national stability are more dependent upon an interest and participation in

lifetime sports than anyone realizes. (p. 36)

Geriatric Research

Williams, Kriauciunas, and Rodriqueuz (1970) evaluated a one-year program involving physical therapy, speech therapy, psychological therapy, social therapy, and activity therapy for geriatric institutionalized mental patients. All services were available to all patients. The following was found as determined by comparisons of pre-tests and post-tests: (a) all patients gained a higher level of mobility, (b) all patients gained in ability to socialize, and (c) all patients made at least moderate gain in areas of mental efficiency and related behavior judged by general information, memory, arithmetic, and visual-motor coordination tests.

May (1966) evaluated a six month work activity program involving 152 experimental patients and 120 control patients on a geriatric hospital ward. The experimental patients participated in a UNICEF project involving mailing, labeling, sorting, and filing UNICEF material. The project lasted four hours a day for five days a week. Evaluation was made by questionnaires filled out by 10 physicians and floor nurses with guidelines on physical conditions, mental status, and social attitudes. The experimental group as compared to the control group improved

more on physical functions, twice as much on emotional and mental health, and three times as much on socializing activities.

Filer and O'Connell (1962) conducted a study on 70 pairs of men with an average age of 63 in a V.A. Hospital domiciliary unit. The pairs were matched for age, medical prognosis, degree of disability, and medical diagnosis. Members of the pairs were randomly placed in either the control group or the experimental group. The experimental group engaged in constructive work activity while the control group received no special treatment. Pre-test and post-test ratings were obtained for social adjustment, attitude adjustment, and work adjustment for both groups. Filer and O'Connell concluded that work activities improve socialization, work activity, and attitudes toward health, work, usefulness, and happiness.

Gottesman (Note 4) conducted a six month study on a geriatric ward of a mental hospital with 126 men and women from 55 to 80 years of age. Of these, 70% were diagnosed as chronic brain syndrome, 15% as schizophrenic, and 8% as affective disorders. The experimental group was placed on one ward while the control group was scattered throughout other wards. The experimental group cared for their own personal needs and their living quarters, and participated

in a small-parts workshop. Pre-tests and post-tests were given to both groups in measurement of mental status, self-concept, and social behavior. More people in the experimental group showed interest in their surroundings, were helpful to one another, were sociable, and manifested fewer psychotic symptoms. In general, psychological functioning of the experimental group improved more than the control group.

Barry, Steinmetz, Page, and Rodahl (1966) conducted a three month study involving eight experimental group subjects and five control group subjects having an average age of 71 years. Gross motor and sensory motor tests, and tests of personality (Myer-Briggs indicator), perception, cognition (Progressive Matrices, Short-Term Retention, Retention Alternating Series, Simple Addition), and motivation were administered in two 2-hour sessions in a pre-test, post-test design. The treatment consisted of activity primarily directed at modifying working capacity and circulatory-respiratory function. Significant changes were found in gross motor, sensory motor, and perception tests. However, no significant changes were found in tests of cognition, personality, and motivation.

Powell (1972) studied 13 male and 18 female hospitalized mental patients having an average age of 69. The

purpose of the study was to test the hypothesis that mild exercise would improve performance on mental tests and improve behavioral characteristics. The patients were randomly divided into two treatment groups and one control group. Treatments were administered for five days a week for 12 weeks. The exercise group received both exercise and social therapy, while the social group received only social therapy. The control group received no special treatment. The exercises consisted of arm swinging, trunk rotation and flexion, leg flexing, toe raising, walking, and postural exercises. The social activities included walking each day plus one of the following: conversation, music, art, bingo, cards, and movies. Three cognitive and two behavioral scales were used to evaluate the groups prior to and after treatment. The cognitive scales were the Progressive Matrices Test, Memory-for-Designs Test, and Weschler Memory Scale; behavior scales consisted of the Geriatric Assessment Scale and Nurses Observational Scale for Inpatient Evaluation. The mental scales were rated by Powell while the behavior scales were rated by ward nurses. The exercise group's cognitive scores improved significantly but the behavior scores did not. The exercise therapy significantly improved cognitive performance on the three tests while no improvement resulted in the social therapy.

group. No significant behavior changes were found as a result of exercise or social therapy. The changes in behavioral ratings for the entire group were found to have minor negative relationships to changes in cognitive abilities. The "poorer" ratings were found in the social group and to a greater extent in the exercise group. These ratings demonstrated manifestations of self-independence and hostility toward hospitalization. The control group had reasonably constant scores.

In summary, when geriatric patients were exercised with general exercises, the following mental and psychological changes were found: (a) improved cognitive performance (Mann, 1950; Powell, 1972), (b) improved perception (Barry, 1966), (c) improved attitude, morale, and personal adjustment (Allen, 1964; Daykin, 1967; Jeffers & Nichols, 1961; Maddox & Eisdorfer, 1962; Mann, 1950; Strelczyk, 1962), and (d) improvement in patients with anxiety states, conversion hysteria, insomnia, tics, tremors, schizoid personalities, depressive personalities, mildly withdrawn personalities, and retarded personalities (Mann, 1950).

The purpose of this study was to determine whether physical activity performed in a controlled group setting affects the morale, mental alertness, and self-esteem of the geriatric nursing home resident. This study constituted a

contribution in that an experimental design was employed and rating scales appropriate to geriatric residents were used to rate physical activity, mental alertness, morale, and self-esteem.

MethodSubjects

Subjects were 94 volunteer residents in four central Texas nursing homes. All residents were 40-96 years of age or older with a mean age of 77 at the time of the study. All participating residents signed a consent form (see Appendix A) and had a physician's approval (see Appendix A) before participating in the study.

Instruments

The instruments used were the Philadelphia Geriatric Center Morale Scale, Thurstone Test of Mental Alertness, Self-Esteem Inventory, and Physical Classification Scale. Each of these scales are discussed below.

Philadelphia Geriatric Morale Scale, Revised. The revised edition of this scale has 17 items requiring dichotomous answers yielding two factors: Agitation-Tranquility and Attitude Toward Aging-Satisfaction with Life Progression. The estimated time required to complete the test is 20 min. The test was specifically designed for geriatric persons, is an alternative to more direct measures of mood, and states relevant questions clearly and briefly.

"Morale" is viewed as consisting of a series of interrelated parts measured by self report (Lawton, 1975). The items have a high degree of internal consistency as determined by Cornbach's alpha, .81 to .85 (Lawton, 1975). Both factors are reliable, Tranquility-.76 and Satisfaction with Life Progression-.62, as alpha reliabilities of .50 or greater are generally accepted (Morris & Sherwood, 1975). Scale intercorrelation is greater than .80 (Morris & Sherwood, 1975).

Thurstone Test of Mental Alertness, Revised. The test consists of 126 items of four types arranged in order of difficulty. The spiraling item sequence is two same-opposites, one arithmetic reasoning, two definitions, and two number series. The test yields separate quantitative, linguistic, and total scores. Each item is concise and of readable type. On the whole, the test allows a relatively quick measure of verbal and numerical abilities as the required test time is 20 min. Test-retest reliability coefficients over a 30 day period for the four groups of adults range from .84 to .96 for part scores and from .92 to .95 for the total score (North, 1968).

Self-Esteem Inventory. This test is a self-report inventory which expresses approval and disapproval attitudes, and indicates the extent to which an individual believes

himself to be capable, significant, successful, and worthy. The test has 58 items with considerable construct validity establishing theoretically consistent relationships with creativity, anxiety, friends, and level of aspiration. Estimated time required to complete the self-administered dichotomous statement test is 20 min. The test results correlate with lab behavior and projective evidence so that defensive biasing is generally of little importance in this test. Reliability of test-retest after five weeks was .88 and after three years .70 (Robinson & Shaver, 1969).

Physical Classification. This scale is a six-point scale with 28 items. The rating of one to six is determined by the highest numbered category under which any of the 28 items is checked. The ratings communicate a fairly accurate picture of an individual's general physical capability and health. A rating of one would indicate a person with generally unlimited physical capabilities whereas a rating of six would indicate a person requiring assistance for personal care and daily living activities as well as extensive medical care. This scale is a global measure of functional health (Waldman & Fryman, Note 5).

Procedure

Program director training period. Program directors were four volunteer nurses in the four central Texas nurs-

ing homes. The directors received training in group sessions each Friday consisting of a demonstration and explanation of the tests, the physical activities, and the social activities (see Appendix B for directions).

Test period. The residents were randomly divided into two treatment groups and one control group. The three tests were administered on pre-test days, Days 1, 2, and 3, and on post-test days, Days 38, 39, and 40. The test sequence was randomly determined for each resident. All the residents were ushered into the large activity room and instructed to sit in chairs arranged in a semi-circle facing the director's chair. On the first testing day the consent form was reread to the volunteers. They were told that the day's activities would consist of filling out a written questionnaire which had the instructions on it. They were asked to answer each item as best they could and told that they had 30 min to complete the questionnaire. The tests were then passed out and at the end of the 30 minute period collected. The group was then thanked and ushered back to their rooms. Each day a check list was filled out for presence-absence of residents. This same procedure was carried out at all nursing homes.

Treatment period. The residents received treatment on Monday through Friday of each week for two months, Days 4 to

37 of the study. The treatment sequence for the groups was randomly determined with the social activity group receiving treatment first on half the days and the physical activity group being first on the remaining days.

The physical activity group was ushered into the activity room, instructed to sit in the chairs set up as on the first day, told that the day's activity would consist of activity under the director's supervision and instruction, and then proceeded with the activity treatment program for a 20 min period. The physical activity treatment program consisted of ten exercises which remained constant (see Appendix B). The activities were chosen because they were (a) not too strenuous or taxing, due to the physical condition of many of the subjects, (b) suitable for all age subjects, (c) stretching, rhythmical activities rated highly by Physical Therapists for geriatric persons, (d) suitable for more persons because they are done in a sitting position, and (e) moderate in activity level which has been shown to produce similar results as light and heavy activity in tension studies (Lebato, Note 3). The group members were then thanked and ushered back to their rooms.

The social group was treated in the same manner as the physical activity group. However, they were told that the day's activity would consist of certain activities which

were different for each treatment period (see Appendix B for activities). The social program was chosen (a) to control for possible confounding due to social interaction with the leader and the group setting of the physical activity group. The need for such a group is demonstrated in research concerning general activity of geriatric persons (Atchley, 1966; Bennett, 1965; Bulten, 1969; Lawton, 1971; Maddox, 1964; Roman, 1967; Waldman, 1964). (b) The social activities provided an activity with minimal stretching and rhythmical activities. (c) The social program provided activities in the sitting position so as to be suitable for all ages.

The control group did not receive any treatment.

Results

In Tables 1-3 are the means and standard deviations of pretest, posttest, and gain scores for each nursing home on the morale, self-esteem, and mental alertness tests. The gain scores were determined by subtracting pretest scores from posttest scores. During the course of the study one resident died, one dislocated his hip, and one left the nursing home. Since these residents were unable to complete the study, they were eliminated from it. Nine residents did not fill out both the pre and post tests for the questionnaires. Since these nine residents did not meet the set criteria of attendance of at least one-half of the group activities and attempting to complete both forms of the tests, the number of residents decreased accordingly (see Table 4). In the analysis of gain scores with all the residents, those residents not meeting criteria received a score of zero on their posttest and thus a zero or negative computed gain score. In Tables 5-7 are the means and standard deviations of pretest, posttest, and gain scores for those remaining residents' data meeting criteria.

As may be noted in Table 8, the Analyses of Variance (ANOVA's) of pretest scores indicated no difference among pretest means for any of the tests. Thus the effectiveness

Table 1

Means and Standard Deviations
of All Morale Scores

	Physical Activity		Social Activity		Control	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	7.8	4.5	4.0	6.9	4.0	4.6
Posttest	11.5	2.4	5.7	7.2	8.3	5.7
Gain	4.0	4.5	1.7	0.6	4.3	2.5
Nursing Home 2						
Pretest	6.4	6.0	6.7	5.5	9.2	6.2
Posttest	10.0	6.2	9.2	2.8	9.8	5.8
Gain	3.6	8.9	2.5	7.4	0.6	2.5
Nursing Home 3						
Pretest	1.5	2.5	0.4	1.2	4.4	6.4
Posttest	3.9	4.2	4.1	4.4	3.1	5.8
Gain	2.4	4.2	3.7	3.6	-1.3	4.4
Nursing Home 4						
Pretest	1.1	2.1	0.8	2.1	3.5	5.6
Posttest	3.3	3.5	2.3	3.1	3.5	5.6
Gain	2.1	3.9	1.7	2.9	0.3	0.8
Totals						
Pretest	2.9	4.1	2.2	4.1	4.8	5.9
Posttest	5.7	5.1	4.5	4.5	4.9	6.1
Gain	2.7	4.5	2.3	4.6	-0.1	3.0

Table 2

Means and Standard Deviations
of All Self-Esteem Scores

	<u>Physical Activity</u>		<u>Social Activity</u>		<u>Control</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	17	12.8	13	22.5	14	13.8
Posttest	28	7.3	29.3	19.1	16	15
Gain	11	11.2	16.3	16.2	2.0	9.2
Nursing Home 2						
Pretest	24.2	15.1	17	19.6	34.6	20.2
Posttest	32.2	9.2	22.5	18	34.6	19.3
Gain	8	9.8	6.5	22	0	2.5
Nursing Home 3						
Pretest	5.7	10.4	9.7	17.8	13.2	17.5
Posttest	13.8	8.5	3.6	5.2	6.0	14.7
Gain	8.1	10.5	6.1	22.7	7.2	13.1
Nursing Home 4						
Pretest	4.6	8.8	8.5	17.7	8.9	13.9
Posttest	11.6	13.0	7.1	13.6	8.4	13.8
Gain	6.9	5.1	-1.5	10.5	-0.5	1.9
Totals						
Pretest	9.7	13	11	18.3	14.9	17.9
Posttest	17.7	12.8	11.7	15.9	12.6	17.6
Gain	8.0	10.7	0.7	17.1	-2.4	9.6

Table 3

Means and Standard Deviations
of All Mental Alertness Scores

	Physical Activity		Social Activity		Control	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	6.5	8.5	0.0	0.0	1.7	1.2
Posttest	5.5	7.0	7.7	11.6	2.7	2.1
Gain	1.3	10.9	7.7	14.5	1.0	1.0
Nursing Home 2						
Pretest	6.4	6.0	6.7	5.5	9.2	6.2
Posttest	6.6	6.2	8.2	10.2	14.6	12.1
Gain	0.2	8.2	1.5	9.7	5.4	9.5
Nursing Home 3						
Pretest	0.7	1.8	0.4	1.2	2.8	5.3
Posttest	3.5	4.0	2.6	2.5	1.8	4.2
Gain	2.6	3.8	2.1	2.1	-1.0	7.4
Nursing Home 4						
Pretest	0.6	1.7	0.4	0.9	0.6	1.0
Posttest	2.8	4.9	1.1	1.8	0.5	0.9
Gain	2.2	4.7	0.7	1.2	0.2	0.7
Totals						
Pretest	2.3	4.6	1.7	3.5	2.8	4.8
Posttest	4.0	5.1	3.6	6.3	3.4	7.1
Gain	1.6	6.2	1.9	6.0	0.6	5.8

Table 4

Ratios of Residents Not Meeting Criteria

Group	Tests		
	Morale	Self Esteem	Mental Alertness
Physical Activity	0/31 ^a	1/31	1/31
Social Activity	4/32	5/32	4/32
Control	1/31	0/31	2/31
Total	5/94	6/94	7/94

^aAll ratios = resident's scores not meeting criteria / total residents.

Table 5

Means and Standard Deviations of Morale Scores
Excluding the Residents Not Meeting Criteria

	Physical Activity		Social Activity		Control	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	7.8	4.5	4.0	6.9	4.0	8.3
Posttest	11.5	2.4	5.7	7.2	4.6	5.7
Gain	4.0	4.5	1.7	0.6	4.3	2.5
Nursing Home 2						
Pretest	6.4	6.0	6.7	5.5	9.2	6.2
Posttest	10.0	6.3	9.2	2.8	9.8	5.8
Gain	3.6	8.9	2.5	7.4	0.6	2.5
Nursing Home 3						
Pretest	1.5	2.5	0.4	1.2	3.6	6.2
Posttest	3.9	4.3	4.1	4.4	3.4	6.1
Gain	2.4	4.2	3.7	3.6	0.2	2.0
Nursing Home 4						
Pretest	1.1	2.1	0.6	2.1	31.1	5.6
Posttest	3.3	3.5	2.5	3.2	32.3	5.7
Gain	2.1	3.9	1.9	2.1	0.3	0.8
Total						
Pretest	2.9	4.2	2.2	4.2	4.5	5.9
Posttest	5.7	5.1	4.7	4.5	5.0	6.1
Gain	2.7	4.5	2.5	4.0	0.4	2.2

Table 6

Means and Standard Deviations of Self-Esteem Scores

Excluding the Residents Not Meeting Criteria

	Physical Activity		Social Activity		Control	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	17.0	12.8	13.0	22.5	14.0	13.8
Posttest	28.0	7.3	29.3	19.1	16.0	15.1
Gain	11.0	11.2	16.3	16.2	2.0	9.2
Nursing Home 2						
Pretest	24.2	15.2	11.2	15.0	34.6	20.2
Posttest	32.2	9.2	22.5	18.0	34.6	19.3
Gain	8.0	9.8	1.4	8.7	0.0	2.5
Nursing Home 3						
Pretest	6.3	10.8	5.7	4.5	13.2	17.5
Posttest	13.1	8.7	4.2	5.4	6.0	14.7
Gain	6.8	4.8	1.8	5.5	7.2	13.1
Nursing Home 4						
Pretest	4.6	8.8	8.5	17.7	8.9	14.0
Posttest	11.6	13.0	7.1	13.6	8.4	13.9
Gain	6.9	5.1	-1.5	10.5	-0.5	1.9
Totals						
Pretest	10.0	13.0	9.9	16.8	14.9	17.9
Posttest	17.7	13.3	10.9	14.9	12.6	17.9
Gain	7.6	6.7	1.0	10.9	-2.4	9.6

Table 7

Means and Standard Deviations of Mental Alertness Scores
Excluding the Residents Not Meeting Criteria

	Physical Activity		Social Activity		Control	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Nursing Home 1						
Pretest	6.5	7.3	0.0	0.0	1.7	1.2
Posttest	5.5	49.7	1.0	1.4	2.7	2.1
Gain	1.3	10.9	1.0	1.4	1.0	1.0
Nursing Home 2						
Pretest	8.0	5.6	6.7	5.5	9.2	6.2
Posttest	5.8	6.9	8.2	10.2	14.6	12.0
Gain	2.3	7.1	1.5	9.7	5.4	9.5
Nursing Home 3						
Pretest	0.7	1.8	0.4	1.2	1.4	2.2
Posttest	3.5	4.0	2.6	2.5	0.6	1.8
Gain	2.6	3.8	2.1	2.1	0.8	2.3
Nursing Home 4						
Pretest	0.6	1.7	0.4	0.9	0.6	1.1
Posttest	2.8	4.9	1.1	1.2	0.5	0.9
Gain	2.2	4.7	0.7	1.2	0.2	0.7
Totals						
Pretest	2.4	4.7	1.7	3.6	2.4	4.1
Posttest	3.8	5.0	2.9	5.4	3.2	7.1
Gain	1.3	5.8	1.3	4.4	0.8	4.4

Table 8

Analysis of Variance of Pretest Scores

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Morale				
Between Groups	103.7	2	51.9	2.2
Within Groups	2083	88	23.7	
Total	2186.7	90		
Self-Esteem				
Between Groups	456	2	228	.84
Within Groups	23907	88	271.7	
Total	24363	90		
Mental Alertness				
Between Groups	19	2	9.5	.49
Within Groups	1711	88	19.4	
Total	1730	90		

of random assignment of residents to the physical activity, social activity, and control groups was verified (see Appendix B for group activities).

The mean gain scores on the morale test including all the resident's scores were 2.7 for the physical activity group, 2.3 for the social activity group, and -0.1 for the control group; the mean gain scores on the morale test excluding the resident's scores not meeting criteria were 2.7 for the physical activity group, 2.5 for the social activity group, and .37 for the control group. In Table 9 is the ANOVA of the morale gain scores without elimination of any resident's scores, $F(2, 88) = 12.5, p < .001$. In Table 10 is the ANOVA of the morale gain scores excluding those resident's scores not meeting criteria, $F(2, 86) = 3.6, p < .05$. Duncan's New Multiple Range Test was computed for the morale gain scores, first with all the scores and secondly excluding the resident's scores not meeting criteria. On both computations the physical and social activity groups scored significantly higher on the morale test than the control group, $p < .05$, although there was no significant difference between the physical and social activity groups, $p > .05$.

The mean gain scores on the self-esteem test including all the resident's scores were 8.0 for the physical ac-

Table 9

Analysis of Variance on All Gain Scores

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Morale				
Between Groups	3138	2	1569	12.5*
Within Groups	11025	88	125.3	
Total	14163	90		
Self-Esteem				
Between Groups	136	2	68	4.36**
Within Groups	1372.7	88	15.6	
Total	1508.7	90		
Mental Alertness				
Between Groups	29.7	2	14.9	.44
Within Groups	2985	88	33.9	
Total	3014.7	90		

* $p < .001$ ** $p < .025$

Table 10

Analysis of Variance on Gain Scores
Excluding the Residents Not Meeting Criteria

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Morale				
Between Groups	101	2	50.5	3.6*
Within Groups	1196	86	13.9	
Total	1297	88		
Self-Esteem				
Between Groups	704	2	352	4.14**
Within Groups	7215	85	85	
Total	7919	87		
Mental Alertness				
Between Groups	6	2	3	.12
Within Groups	2070	84	24.6	
Total	2076	86		

* $p < .05$

** $p < .025$

tivity group, 0.7 for the social activity group, and -2.4 for the control group; the mean gain scores on the self-esteem test excluding the resident's scores not meeting criteria were 7.6 for the physical activity group, 1.04 for the social activity group, and -2.4 for the control group. In Table 9 is the ANOVA of the self-esteem gain scores without elimination of any resident's scores, $F(2, 88) = 4.36, p < .025$. In Table 10 is the ANOVA of self-esteem gain scores excluding those resident's scores not meeting criteria, $F(2, 88) = 4.14, p < .025$. On the self-esteem test the control group gain scores actually decreased. Duncan's New Multiple Range Test was completed for the self-esteem test, first with all the scores and secondly excluding the resident's scores not meeting criteria. On the self-esteem test when all the scores were analysed, the physical activity group scored significantly higher than the control group, $p < .005$, and significantly higher than the social activity group, $p < .05$. On recomputation of the self-esteem scores excluding the resident's scores not meeting criteria, the physical activity group scored significantly higher than the control group, $p < .001$, and significantly higher than the social group, $p < .01$. There was no significant difference between the social activity and control group scores when the res-

ident's scores not meeting criteria were excluded, $p > .05$.

The mean gain scores on the mental alertness test including all resident's scores were 1.6 for the physical activity group, 1.9 for the social activity group, and .6 for the control group; the mean gain scores on the mental alertness test excluding the resident's scores not meeting criteria were 1.3 for the physical activity group, 1.25 for the social activity group, and 0.8 for the control group. In Tables 9 and 10 are the ANOVA'S of the mental alertness scores without elimination of any resident's scores and excluding those resident's scores not meeting criteria. The analysis indicates no significant mental alertness effect. On mental alertness there were no significant differences between physical activity, social activity, and control groups gain scores, $p > .05$, although mental alertness did increase slightly for all groups.

The average age, sex, and physical classification of the treatment groups are presented in Table 11. Correlation coefficients of these three variables with gain scores on the three tests for each group and the groups combined were determined (see Table 12). There was a significant positive correlation, overall, between age and self-esteem, $p < .05$; the older resident's had significantly higher self-

Table 11

Means, Standard Deviations, and Percentages
of Age, Sex, and Physical Classification

Group	Age		Sex	Physical Classification	
	<u>M</u>	<u>SD</u>	<u>Percent</u> ^a	<u>M</u>	<u>SD</u>
Physical Activity	77.4	11.0	.54	3.8	3.7
Social Activity	75.0	12.9	.57	3.2	3.4
Control	72.5	12.9	.48	3.5	7.8
Total	75.0	12.4	.55	3.5	2.4

^aPercent = number females / total number residents.

Table 12

Correlations of Test Gain Scores

With Age, Sex, and Physical Classification for Each Group

Group	Tests		
	Morale	Self Esteem	Mental Alertness
Age and Test Gain Scores ^a			
Physical Activity	.15	.03	.03
Social Activity	-.15	.07	.31
Control	.20	.23	-.53**
Total	.09	.19*	.03
Sex and Test Gain Scores ^b			
Physical Activity	.02	.03	-.01
Social Activity	-.21	.07	-.25
Control	.19	-.04	-.20
Total	-.03	.02	-.41***
Physical Classification and Test Gain Scores ^a			
Physical Activity	.22	.24	.30
Social Activity	.02	.03	-.10
Control	.27	.18	.04
Total	.14	.18	.05

^aCorrelated with the Pearson product-moment correlation coefficient.

^bCorrelated with the point-biserial correlation coefficient.

* $p < .05$

** $p < .005$

*** $p < .0005$

esteem gain scores. For the dichotomous variable sex, males received a score of zero and females received a score of one. There was a significant negative correlation between sex and mental alertness, $p < .0005$; the males had significantly higher mental alertness gain scores. There was a significant negative correlation in the control group between age and mental alertness, $p < .005$; the younger residents in the control group had significantly higher mental alertness gain scores. Due to the large number of correlations computed, these significant correlations do not warrant serious consideration.

Discussion

The finding that both physical and social activities significantly increased the morale of the residents, with no significant difference between the physical and social activity groups, suggests that a well-planned, supervised group activity would be beneficial in increasing the morale of nursing home residents. Theoretical papers have stated that exercise improves attitudes, morale, and personal adjustment in geriatric persons (Allen, 1964; Daykin, 1967; Jeffers & Nichols, 1961; Maddox & Eisdorfer, 1962; Mann, 1950; Strelczyk, 1962). Mann (1950) stated that the states of anxiety, depression, insomnia, and withdrawal were improved by exercise in geriatric persons. Menninger (1948) suggested that physical exercise provides an outlet for instinctive aggressive drives. In observing mentally ill non-geriatric patients, Knudson and Davis (1949) found that exercise therapy alleviated aggressive feelings and resolved feelings of inferiority. Filer and O'Connell (1962) conducted a study of geriatric patients and found that engagement in constructive work activity improves attitudes toward health, work, usefulness, and happiness. May (1966) evaluated a work activity program with geriatric patients and found emotional health and social attitudes to increase

twice as much in the activity group as compared to the control group. However, in contrast to all other studies, Barry et al. (1966) found no significant personality changes due to exercise activity in geriatric patients. The morale in the present study seems to be increased by the group setting itself, by doing activities rather than just sitting, by leader and resident interaction, and by receiving attention, regardless of the specific type of activities done.

A well supervised physical activity program appears to be beneficial for increasing the self-esteem of geriatric nursing home residents. However, a social activity program alone seems more limited as a technique for increasing the self-esteem of the residents. Byrd (1963b) speculated that some of the exercise activities recommended by physicians and psychiatrists were recommended for the social elements accompanying the physical values. Mann (1950) suggested that mildly withdrawn personalities in geriatric patients improved with exercise. Physical therapy, social therapy, and activity therapy were found by Williams, Kriauciunas, and Rodriguez (1970) to help geriatric patients gain ability to socialize. May (1966) evaluated a work activity program and found that social attitudes and emotional health improved in geriatrics following the program. Filer

and O'Connell (1962) conducted a study with geriatric patients and found that work activities improve the level of adjustment in socialization and in attitudes toward health, work, usefulness, and happiness. Geriatric persons in a constructive work activity program improved in self-concept and social behavior (Gottesman, Note 4). Menninger (1948) suggested that physical exercise provides an outlet for instinctive drives. Knudson and Davis (1949) observed non-geriatric mental patients and found physical activity to alleviate aggressive feelings, reduce guilt feelings, resolve feelings of inferiority, and improve social relationships. Barry et al (1966) found no significant changes due to exercise activity in geriatric patients. Powell (1972) found what he termed negative behavior changes due to both exercise and social therapy; these changes were manifestations of self-independence and hostility toward hospitalization. The improvement of the physical activity group and lack of effect of the social activity program in the present study might be due to the following: a) the physiological and psychological benefits of the physical activities themselves, b) feedback gained from an increased ability to complete the exercises, and c) lack of enthusiasm for some of the social activities with the feeling that some of the activities were for school children and thus de-

grading.

The failure to find an effect of physical activity on mental alertness is surprising in light of a number of previous studies demonstrating such an effect. McAdam and Wang (1967) found that short duration exercise did not effect performance on simple mental tasks in non-geriatrics, although trends were in favor of the exercise group. No changes were found in geriatric patients after participating in a long term exercise program in tests of cognition (Barry et al, 1966). However, on a study with college men, Gutin (1966) found improvement in mental task ability following a long term exercise program. Powell (1972) found exercise therapy but not social therapy to significantly improve cognitive performance in geriatric mental patients in a long term program. Knudson and Davis (1949) observed mental non-geriatric patients and found physical activity to lessen mental confusion. May (1966) found a productive work activity program to increase mental health in geriatric patients. In a program of milieu therapy, Williams, Kriauciunas, and Rodriquez (1970) found geriatric patients to make at least moderate gains in areas of mental efficiency, general information, memory, and arithmetic. Mental alertness did increase slightly in all groups in the present study, despite the trend

for mental age decline as chronological age increases (Horn & Cattell, 1966; Riccitelli, 1963). Since this increase was greater in the physical and social activity groups as compared to the control group, by increasing the length of the treatment period a significant increase might be found in either or both the physical and social activity groups.

A well supervised physical or social activity program of limited duration does not seem to be highly helpful in increasing the physical classification of nursing home residents. Previous work, however, indicates that physical activity increases physical functions and activity (May, 1966; Kobrynski, 1973) and increases gross motor and sensory motor abilities (Barry et al., 1966). Possibly, if the treatment program were extended over a longer period of time, a significant change in physical classification might occur in the physical activity group as the residents in this group made tremendous gains in their ability to do the physical activities and in their endurance for the physical activities.

Reference Notes

1. Handlon, J. H., Byrd, O. E., Gaines, J. D., Lloyd, R. A., & Cambell, J. H. The effects of moderate exercise on the reduction of tensions as measured by the interview. Unpublished manuscript, Stanford University, 1963. Cited in Lebato, L. T., 1970.
2. Handlon, J. H., Byrd, O. E., & Gaines, J. D. Psychometric measurement of relief of tension by moderate exercises. Unpublished manuscript, Stanford University, 1963. Cited in Lebato, L. T., 1970.
3. Lebato, L. T. An electromyographic study of the effect of participation in three selected gross motor activities on residual neuromuscular tension. Unpublished doctoral dissertation, Texas Woman's University, 1970.
4. Gottesman, L. E. Resocialization of the geriatric patient. Presented at the American Public Health Association Conference, 1964. Cited in Ward, R. M., 1971.

References

- Allen, J. The use of isometric exercises in a geriatric treatment program. Geriatrics, April 1964, 20, 346-347.
- Atchley, R. C. Theories of aging. Social forces in later life-An introduction to social gerontology. New York: Academic Press, 1966.
- Barger, B. Some relationships of physical education to mental health. Journal of School Health, 1968, 38, 65-68.
- Barry, A. J., Steinmetz, J. R., Page, H. F., & Rodahl, K. The effects of physical conditioning on older individuals. II. Motor performance and cognitive function. Journal of Gerontology, 1966, 21, 192-199.
- Bennett, R., & Nahemow, L. The relations between social isolation, socialization, and adjustment in residents of a home for the aged. Proceedings of the Institute on the Mentally Impaired Aged, Philadelphia: Maurice Jacob Press, 1965, 88-105.
- Bulten, G. L. Life continuity and morale in old age. Gerontologist, 1969, 9(4), 251-253.
- Burros, O. K. The seventh mental measurements yearbook (Vol. 1), Highland Park, New Jersey: The Gryphon Press,

1972.

- Byrd, O. E. The relief of tension by exercise-A survey of medical viewpoints and practices. Journal of School Health, 1963, 38, 238-239. (a)
- Byrd, O. E. A survey of benefits and practices of psychiatrists on the relief of tension by moderate exercise. Journal of School Health, 1963, 38, 426-427. (b)
- Byrd, O. E. Studies on the psychological values of lifetime sports. Journal of Health, Physical Education, and Recreation, November-December 1967, 38, 35-36.
- Daykin, H. P. The application of isometrics in geriatric treatment. American Corrective Therapy Journal, November-December 1967, 21, 203-205.
- Filer, R. N., & O'Connell, D. D. A useful climate for the aged. Journal of Gerontology, 1962, 51-57.
- Gutin, B. Effects of increase in physical fitness on mental ability following physical and mental stress. Research Quarterly, 1966, 37, 211-220.
- Hart, M., & Shay, C. Relationship between physical fitness and academic success. Research Quarterly, 1964, 35, 443-445.
- Horn, J., & Cattell, R. Age differences in primary mental ability factors. Journal of Gerontology, 1966, 21, 210-220.

- Jeffers, F. C., & Nichols, C. R. The relationships of activities and attitudes to physical well-being in older people. Journal of Gerontology, 1961, 16, 67-70.
- Johnson, G. R. Physical Therapy in geriatrics. The Physical Therapy Review, 1958, 38(3), 163-164.
- Knudson, A. B. C., & Davis, E. Medically prescribed exercises for neuropsychiatric patients. American Medical Association, 1949, 140, 1090-1095.
- Kobrynski, B. Innovations in programs of care for the elderly. Gerontologist, 1973, 13(1), 50-53.
- Lawton, M. P. Functional assessment of elderly people. Journal of the American Geriatrics Society, June 1971, 19(6), 468-469.
- Lawton, M. P. The Philadelphia geriatric center morale scale: A revision. Journal of Gerontology, 1975, 30(1), 85-89.
- Lorenze, E. J. Geriatrics as seen by the psychiatrist. Journal of American Geriatric Society, August 1968, 16, 859-866.
- Maddox, G. Disengagement theory: A critical evaluation. Gerontologist, 1964, 4, 80-82.
- Maddox, G., & Eisdorfer, C. Some correlates of activity and morale among the elderly. Social Forces, 1962, 40, 254-260.

- Manness, D. B. Symposium on care and rehabilitation of the geriatric patient. Three rehabilitative therapies. Physical therapy for the geriatric patient. Journal of American Geriatric Society, December 1969, 17, 1151.
- Mann, C. Music and exercise as a form of psychotherapy. Psychoanalytic Review, 1950, 37, 143-155.
- May, S. H. Purposeful mass activity. Geriatrics, 1966, 21(3), 193-200.
- McAdam, R., & Wang, Y. K. Performances of a simple mental task following various treatments. Research Quarterly, 1967, 38, 208-212.
- Menninger, W. C. Recreation and mental health. Recreation, 1948, 42, 340-346.
- Morris, J. N., & Sherwood, S. A retesting and modification of the Philadelphia geriatric center morale scale. Journal of Gerontology, 1975, 30(1), 77-84.
- Murray, W. Functional training in geriatrics. Physical Therapy Review, 1952, 32, 446-449.
- Pelz, K. S., Ames, L. B., & Pike, F. Measurement of psychological function in geriatric patients. Journal of American Geriatric Society, 1961, 9, 740-754.
- Powell, R. R. Psychological effects of exercise therapy upon institutionalized geriatric mental patients (Doctoral dissertation, University of Illinois at Urbana-

- Champaign 1972). Dissertation Abstracts International, 1972, 33, 3306-A. (University Microfilms No. 72-19908, 2771)
- Powell, R. R., & Pohndorf, R. H. Comparison of adult exercisers and non-exercisers on IQ. Research Quarterly, March 1971, 42(1), 70-77.
- Reed, H., & Reitan, R. Changes in psychological test performance associated with the normal aging process. Journal of Gerontology, 1963, 18, 271-274.
- Riccitelli, M. L. The therapeutic value of exercise in the aged and infirm. Journal of American Geriatric Society, April 1963, 11, 299-302.
- Robinson, J. P., & Shaver, P. R. Measures of social psychological attitudes. Ann Arbor, Michigan: Survey Research Center Institute for Social Research, 1969.
- Roman, P., & Laietz, P. Organizational structure and disengagement: The emeritus professor. Gerontologist, 1967, 7(3), 147-152.
- Sainsbury, P., & Gibson, J. G. Symptoms of anxiety and the accompanying physiological changes in the muscular system. Journal of Neurological and Neurosurgical Psychiatry, 1954, 17, 216-224.
- Salzman, C., Kochanski, G. E., & Shader, R. I. Rating scales for geriatric psychopharmacology. A review.

Appendix A
Resident and Physician
Consent Forms

Psychopharmacology Bulletin, July 1972, 8(3), 3-50.

Strelczyk, R. E. Treatment of geriatric patients in nursing homes. Journal of American Physical Therapy Association, 1962, 42(5), 319-322.

Waldman, A., & Fryman, E. Classification in homes for the aged. In H. Shore & M. Leeds (Eds.), Geriatric institutional management. New York: Putnam Press, 1964.

Ward, R. M. Review of research related to work activities for aged residents of long-term-care institutions. American Journal of Occupational Therapy, 1971, 25(7), 348-351.

Williams, J. R., Kriauciunas, R., & Rodriguez, A. Physical, mental, and social rehabilitation for elderly and infirm patients. Hospital and Community Psychiatry, April 1970, 21(4), 130-132.

Resident Consent Form

The study will be conducted with residents of nursing homes in central Texas and authorized by Texas Woman's University.

The study will measure the effects of general group activities by the use of three written questionnaires.

The results obtained will be kept confidential and used only to promote greater public interest and understanding of nursing home residents.

Each resident's physician must approve of his participation in the study although there are no intended risks involved.

If for some reason you are not able to complete the study you are free to withdraw from it.

When completed the final report of the study will be made available to you.

I do consent to participate in this study,

Resident's Signature

Date

Researcher's Signature

Date

Please find enclosed a copy of the title page, abstract page, and exercises for my study. The following patients have consented to participate in my study. Please sign whether or not you as their physician would approve of their participating in this study.

Comments

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears slightly aged or off-white. There is no handwriting or other markings on the page.

Thank-you very much for your help.

Appendix B

Activity Director Directions
and Physical and Social Activity Programs

Activity Director Directions

I. Enclosed are copies of the title page, abstract page, physical activity program, social activity program, and resident consent form.

II. Daily schedule

A. Pre-test and post-test schedule. Days 1, 2, 3, 38, 39, and 40. (April 21, 22, 23; June 11, 12, 13)

1. Set chairs for all residents in a semi-circle fashion with no more than 12 chairs in each circle. Set your chair facing the circle.

2. Gather all residents into the activity room and have them sit in the chairs.

3. On April 21 read the consent form.

4. Inform the group that the day's activity will consist of filling out a written questionnaire which has the instructions written on it. Ask the group not to discuss the test with the others, to answer each item as best they can, and tell them they will have 30 min to complete the questionnaire.

5. Hand out the questionnaires to the residents; tearing off the name page concomitantly. Hand out pencils.

6. Tell the group to begin.

7. When time is up, pick up the questionnaires

and pencils.

8. Thank the members for their cooperation and reassure them of the confidentiality of the questionnaires.

B. Treatment period. Days 4 to 37 (April 24-25, 28-30; May 1-2, 5-9, 12-16, 19-23, 26-30; June 2-6, 9-10).

1. Set chairs in a semi-circle fashion with no more than 12 chairs in each circle. Set your chair facing the circle.

2. Gather the residents of the groups into the activity room and have them sit in the chairs. Write down the presence-absence of the group members.

3. Inform the group of the day's activity, ask them not to discuss the activity with the others, then proceed with the activity for a 20 min period.

4. Physical activity group--do exercises exactly as outlined in the physical activity program. This group will be first on Days 6, 7, 8, 9, 11, 15, 20, 21, 22, 23, 28, 30, 31, 32, 33, and 35.

5. Social activity group--do activities exactly as outlined in the social activity program. This group will be first on the remaining days.

6. When time is up, pick up the materials.

7. Thank all the members for their cooperation.

Social Activity Program

Days 4-37. Have residents date each activity with time, day, month, and year.

Days 4-5 (April 24-25). (4) Trace over geometric figures on paper and on separate paper draw each of the geometric figures. (5) Cut out the geometric figures. Materials: paper with geometric figures, plain paper, scissors, and pencils.

Days 6-10 (April 28-30; May 1-2). (6) Draw, name, and label fruits. (7) Cut out fruit drawings. (8) Draw, name, and label vegetables. (9) Cut out vegetable drawings. (10) Paste fruit and vegetable cut outs on appropriate geometric forms on paper with geometric forms. Materials: paper with geometric forms, plain paper, scissors, pencils, fruits (apple, banana, orange, strawberry, grape, cherry, pear, cantelope, watermelon, peach), and vegetables (eggplant, corn, squash, carrot, avocado, lettuce, asparagus, peas, beans).

Days 11-15 (May 5-9). (11) Collect pictures out of magazines to tell a story. (12) Cut out pictures. (13) Paste pictures in order on paper. (14) Write story and 1/2 of group tell story. (15) Other 1/2 tell story. Materials: scissors, paste, paper, pencils, and magazines.

Days 16-20 (May 12-16). Listen to music on records.

(16) Classical music. (17) Jazz music. (18) Country Western music. (19) Soul music. (20) Acid rock music.

Materials: records and record players.

Days 21-25 (May 19-23). (21-22) Draw a picture to

tell a story. (23) Cut out letters to tell the story.

(24) Paste letters on paper and 1/2 tell story. (25)

Other 1/2 tell story. Materials: paper, pencils, scissors, paste, and newspapers.

Days 26-30 (May 26-30). Listen to readings. (26)

Poems. (27) Short stories. (28) News articles. (29)

Essays. (30) Jokes. Materials: the above.

Days 31-35 (June 2-6). Draw and tell a story of the

following. (31) Your home. (32) The nursing home. (33)

Your family. (34) Your friends. (35) Yourself. Materials: paper, pencils.

Days 36-37 (June 9-10). Listen to favorite Bible pas-

sages chosen by residents themselves. Materials: Bible.

Physical Activity Program

Shoulder flexion. Starting position is sitting with arms at sides. Raise arms above the head as far as possible, keeping the elbows straight and close to the head. Return to starting position, rest, repeat the exercise 5 times.

Shoulder abduction. Starting position is sitting with arms at sides. Keeping elbows straight and palms down, raise your arms out to the side away from your body to shoulder height. Turn your palms up and continue the arms up over the head. Return to starting position, rest, then repeat the exercise 5 times.

Wing arm. Starting position is sitting with arms at sides, elbows bent at right angles, and palms touching. Take the hands away from each other as far as they will go. Return to the starting position, rest, then repeat the exercise 5 times.

Elbow flexion and extension. Starting position is sitting with arms at sides and palms facing frontward. Bend your elbows and bring your hand as close to your shoulders as possible. Return to starting position, rest, then repeat exercise 5 times.

Wrist flexion and extension. Starting position is sit-

ting with arms at sides and elbows bent at a right angle with palms facing down. Bend your wrists upward as far as possible and then down as far as possible. Return to starting position, rest, then repeat exercise 5 times.

Finger flexion and extension. Starting position is sitting with arms at sides, elbows bent, and hands in lap. Curl your fingers making a fist, then uncurl them making them completely straight. Return them to starting position, relax, then repeat exercise 5 times.

Finger abduction and adduction. Starting position is sitting with arms at sides, elbows bent, and hands relaxed palm down in lap. Keeping the fingers straight spread them as far as possible and then bring them back together. Return to starting position, rest, then repeat exercise 5 times.

Hip and knee flexion and extension. Starting position is sitting with arms at sides and feet flat on the floor. Bend the right knee up towards the chest and then lower the right foot to the floor. Repeat the exercise with the left leg. Rest, then repeat the entire exercise 5 times alternating legs.

Knee extension and flexion. Starting position is sitting in a chair with arms at sides and feet flat on the floor. Straighten the right knee and then return knee to

the starting position. Repeat the exercise with the left knee. Rest, then repeat the entire exercise 5 times alternating legs.

Ankle and toe flexion and extension. Starting position is sitting with arms at sides and feet on the floor out from the chair. Bend both ankles up, pointing the toes up. Relax feet, and then bend both ankles down, curling or cupping the toes. Relax, then repeat the exercise 5 times.

Abstract

The purpose of this study was to determine whether physical activity performed in a group setting affects morale, mental alertness, and self-esteem of the geriatric nursing home resident. Residents in four nursing homes were randomly assigned to one of the three treatment groups: physical activity group, social activity group, and control group. The scales administered before and after treatment were the Philadelphia Geriatric Center Morale Scale, Thurstone Test of Mental Alertness, Self-Esteem Inventory, and Physical Classification Scale. Both the physical activity and social activity programs significantly increased morale in the residents; however, there was no significant difference between the effects of the physical activity and social activity groups on the variable. The physical activity program significantly increased the self-esteem of the residents, but the social activity group did not. There were no significant increases in mental alertness or physical classification in either the physical activity or social activity groups.