ABSTRACT

OLSON, L. S. The effects of video game tournament play on the levels of morale of geriatric residents in a nursing home setting. M.S. in Therapeutic Recreation, 1985. 46 pp. (Dr. Thomas Gushiken)

A Pac-Man tournament was implemented to evaluate the effects of video game tournament play on the levels of morale of geriatric residents at Bethany-St. Joseph Care Center. 40 Ss were randomly assigned to one of two groups. The experimental group (N=20) participated in the video game tournament play which consisted of daily pac-man play on 19 consecutive weekdays. The remaining 20 Ss comprised the control group and did not participate in the tournament play. Pre and post experiment morale levels of all Ss were measured by the Philadelphia Geriatric Center (PGC) Morale Scale. Chi square analysis of the total P scores from the PGC Morale Scale, indicating overall level of morale, indicated a significant difference ($p < .05$) between the two groups. The statistical findings in this study documented the effectiveness of video game tournament play in improving the morale of geriatric residents in a nursing home setting.

THE EFFECTS OF VIDEO GAME TOURNAMENT PLAY ON THE LEVEL OF MORALE OF GERIATRIC RESIDENTS IN A NURSING HOME SETTING

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by

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CHAPTER I

INTRODUCTION

With the exception of the few who choose to move into nursing homes, elderly persons confronted with life in a nursing home are faced with the realization that they are no longer able to function as independent persons. In working with nursing home residents for a number of years, it has been observed that certain residents adjust to and cope with these feelings of forced dependency rather quickly while other residents seem to exhibit consistently low levels of morale. Morale has been defined as "a sense of meaningful integration into a social group" (George and Bearson, 1980, p. 39). According to Lawton (1972), a person possessing a high morale could be described as someone having:

> a basic satisfaction with oneself-- a feeling that there is a place in the environment for one's self-- that people and things in one's life offer some satisfaction to the individual-- a fit between personal needs and what the environment offers...(and) a certain acceptance of what cannot be changed.

In recent years, resident morale, a psychosocial aspect of nursing home living, has become increasingly recognized as an important factor in the nursing home resident's adjustment to the facility as well as one's

satisfaction with one's lifestyle within the facility. This is evidenced in part by the existence of the state Health and Social Service Code 132 of 1985, and Federal Code 405.1131 of 1985 governing the provisions of recreational and social services for nursing home residents.

A basic responsibility of recreation personnel is to assist the residents in becoming well integrated into the social setting of the nursing home. This involves reaching an acceptance of placement and satisfaction with the institutional lifestyle on the part of the resident. Nursing home recreation personnel are in a key position to foster high levels of morale or feelings of "meaningful integration" among residents. Recreation personnel can help residents meet this psychosocial need through the structuring of socialization opportunities. Often this calls for ingenuity and creativity on the part of the recreator.

One potential morale enhancing activity which at this time has been largely unexplored by nursing home recreators is that of video game tournament play. In realizing the need to continually seek out new and meaningful ways to enhance nursing home residents morale, an attempt was made to explore nursing home resident involvement in video game tournament play as one possible vehicle for enhancing resident morale.

Need for the Study

Nursing home activity directors are well aware of the need to plan and implement programs which serve to enhance nursing home resident morale. However, little documented research has been conducted to determine which nursing home program offerings have the greatest potential to achieve this end. In selecting to do this study it was recognized that there was a need to help fill the void of research in the area of nursing home recreation programming. Little documented information is available regarding the impact that recreational program involvement may have on the nursing home resident's level of morale.

Null Hypothesis

There will be no significant difference in the median morale score improvement, as measured by the Philadelphia Geriatric Center Morale Scale, of those residents who participate in video game tournaments and those residents who do not participate in the tournaments.

Assumptions

The following assumptions were made:

1. The subjects responded to the PGC Morale Scale with honesty and accuracy.

2. For the purpose of this study it was assumed that the PGC Morale Scale was a reliable measure of morale.

Delimitations

Fifteen male and 25 female Bethany-St. Joseph residents ages 65 and over were involved in this study. Persons not included in this study were:

1. Individuals with severe arthritis or other crippling conditions which would prevent them from being able to manipulate either the standard or adapted video game controls;
2. Persons with visual disabilities which would prevent them from being able to view the video game tournament screen; and
3. Persons whose current mental status inhibited their ability to understand the usage of video game controls.

Limitations

1. Randomness of this study was affected due to the need to choose subjects residing at Bethany-St. Joseph who were not disabled with visual, physical or mental problems which would restrict one's ability to use video game equipment.

2. Although not permitted to play video games, it was possible for subjects in the control group to observe the video game tournament play.
3. As resident support during play may have had an influence, it was difficult to control the number of residents who observed each faction of the video game tournament play.

Definition of Terms

Elderly Persons

For purposes of this study elderly persons were defined as those persons age 65 and older.

Joy Stick

A video game control used in the game of Pac-Man and many other video games. In home video game play the player normally holds the square base of the joy stick in the palm of one hand and grasps the stick shaped end with the other hand to guide electronic objects around the television screen.

Morale

Feelings of satisfaction with oneself, one's life-style and one's environment as measured by the Philadelphia Geriatric Center (PGC) Morale Scale.

Nursing Home

For purposes of this study the term nursing home referred to an institutional place of residence for

elderly persons, most of whom had taken up residence due to the need for nursing care.

Pac-Man

A video game in which the player directs a round shaped "Pac-Man" through a maze in an attempt to score points. The Pac-Man maze consists of "dots," "monsters" and "energizers." The Pac-Man player scores points by overtaking dots and energizers and by avoiding the monsters. Pac-Man is a video game requiring the use of fine motor skills, visual perceptual skills and decision making.

Recreation Personnel in Nursing Homes

For purposes of this study, recreation personnel were defined as those persons who work within the recreation or activities department of a nursing home and have been given the responsibility of providing recreational opportunities for the residents. Training for such persons may have been formal or on-the-job.

Round Robin Tournament

A contest where each player plays every other player in predetermined rotation.

Video Game

A computerized game found in both homes and in arcades. Home video game play involves a game of skill where one manipulates electronic objects on a television

screen through use of game controls. The home version of Atari brand Pac-Man was the video game used in this study.

Video Game Tournament

For the purpose of this study, video game tournaments were defined as round robin tournaments where each player participated in 19 rounds of Pac-Man play.

CHAPTER II

REVIEW OF RELATED LITERATURE

Effective caring for the institutionalized elderly goes beyond meeting their physical needs. Continuing attention must also be given to their psychosocial needs. The degree to which an individual feels satisfied with his lifestyle and in harmony with his environment directly affects his level of morale. The effect of video game tournament play on nursing home residents' morale was examined in this study. Through a review of literature no studies dealing directly with the relationship between video game tournament play and nursing home resident morale were discovered. It was therefore the purpose of this chapter to present a review of literature in the following closely related areas: 1) morale as measured by the Philadelphia Geriatric Center (PGC) Morale Scale, 2) nursing home residency and morale, 3) social interaction, activity participation and resident morale and 4) computer game usage with ill and disabled persons.

Morale as Measured by the PGC Morale Scale

Morale as a concept to be measured has had two

interpretations. According to Lawton (1975), researchers such as Cumming (1958), Kutner (1956) and Neugarten, Havighurst and Tobin (1961) have dealt with morale as being a single dimensional concept. However, Lawton (1975) views morale as being a multi-dimensional concept which consists of "positive self regard and a struggle for mastery and acceptance of reality." Lawton had developed the Philadelphia Geriatric Center (PGC) Morale Scale to measure this concept. He developed the morale scale because he perceived the need to develop appropriate measuring tools for use with elderly institutionalized persons. He attempted to construct a viable tool that was long enough to foster reliability but short enough to keep the elderly person from becoming fatigued during the interview. The original PGC Morale Scale devised by Lawton in 1972 consisted of a total of 22 questions in the following areas: attitude toward own aging, agitation, lonely dissatisfaction, acceptance of status quo, optimism and surgency. In 1975 Lawton revised the PGC Morale Scale so that 17 questions within the following three dimensions were included: attitude toward aging, agitation and lonely dissatisfaction.

Morris and Sherwood (1975) administered a slightly modified versions of the PGC Morale Scale to a group of elderly persons who applied for low income public housing. Their findings supported Lawton's 1975 revision of the PGC Morale Scale.

Lohmann (1977) conducted a study to correlate life satisfaction, morale and adjustment scales. She studied 259 elderly persons living in Tennessee. Lohmann found correlations from .76 to .79 existing between the PGC Morale Scale and the Life Satisfaction Measures she studied. Correlations were considered significant at the .01 level. She also found that the PGC Morale Scale had a .952 correlation with the Morris and Sherwood version of the PGC Morale Scale.

Nursing Home Residency and Morale

While only about four percent of the elderly live in institutions, this number represents close to one million people (Tate, 1980). The majority of elderly persons who relocate from their homes to nursing homes do so, not out of choice but out of the need for nursing care due to illness and/or disability. The impact of the stressors involved with this institutionalization can be as damaging to the individual as the physical condition itself (Silverstone, 1976; Lieberman & Tobin, 1983). To a greater degree than noninstitutionalized elderly, nursing home residents are confronted with the problem of sociogenic aging. Sociogenic aging has been described as the imposition of our prejudices and misconceptions about age on "the old" (Dimond, 1980). Nursing home residents are inclined to realize that they

are living up to some of the dreaded stereotypic views of old age. Undoubtedly, this would have adverse effects on the residents' levels of morale.

Much of the resident's satisfaction with his life in the nursing home depends upon how he views his environment and how he fits into that environment. When the elderly nursing home resident feels and reacts negatively concerning his placement in a facility it follows that he will experience correspondingly low levels of morale. In studying 125 nursing home residents, Noelker and Harel (1980) found that twice as many residents who wished to live in the nursing homes showed higher life satisfaction than those residents who wished to be experiencing alternative living situations. Noelker and Harel (1980) also found that higher levels of life satisfaction and morale were elements in the prediction of survival for these elderly persons.

When an individual successfully adjusts to the nursing home and views his placement in a positive manner the resident's motivation, zest for life and thus level of morale has been shown to improve (Miller and Russell, 1980). From a review of the literature mentioned, it therefore seems reasonable to assume that the nursing home resident's level of morale is closely linked to his perception of nursing home living.

Social Interaction, Activity Participation and Resident Morale

Nearly two decades ago, Clark and Anderson (1967) surveyed a group of 79 elderly San Francisco residents as to what factors they regarded as being important influences upon their morale. Listed in order of perceived importance, factors which these elderly people gave as being conducive to high morale were: entertainment and diversion, socializing, productive activity, physical comfort (other than health), financial security, mobility and movement, health, stamina and survival. Recreation personnel in nursing home settings are in a position to provide the resident with opportunities to experience entertainment and diversion, socialization and productive activity involvements.

It is assumed that most recreators who work with the elderly ascribe to the "activity theory" of aging. The activity theory of aging asserts that one's morale is directly related to his degree of social interaction and activity level. During late adulthood, social interaction through activity involvement provides the vehicle for maintaining one's positive self regard and sense of belonging which in turn is correlated with high morale (Creecy and Roosevelt, 1979; Brennan and Steinberg, 1983).

In studying the effects of a "Friendly Visitor" program on 49 nursing home residents, Reinke et al. (1981)

found that those residents involved in the visitor program which employed the use of an activity during visitations showed greatest improvements in morale. Many other studies (Arje, 1973; Benette, 1980; Graney, 1975; Gray and Stevenson, 1980; Maddox, 1968; and Palmore, 1968) have supported the view that social interaction via activity participation among nursing home residents leads to improved morale and/or sense of belonging to the home.

In studying the use of remotivation techniques with elderly nursing home residents, Francis Arje (1973) reported that morale seems to be influenced by and also seems to influence one's ability to accept social norms, take part in available nursing home activities and adjust to the limitations imposed by the physical aspects of aging. In researching sociological aspects of aging, Palmore (1968) and Maddox (1968) demonstrated that the use of structured discussion groups with the slightly to moderately confused nursing home residents resulted in positive behavior changes as well as increased amounts of socialization observed among those residents. Benette (1980) demonstrated that the nursing home resident who is well socialized is most likely to evaluate life in the nursing home in positive terms. Findings of a longitudinal study conducted by Graney (1975) indicated that happiness is positively related to social participation in old age.

Through activity programming, recreation personnel structure many opportunities for resident socialization to occur. As made apparent in the literature, socialization through activity participation can affect resident morale in a positive manner.

Video Game Usage With Ill and Disabled Persons

Video games were first marketed for home usage in 1972. The Magnavox "Odyssey" game and later the Atari company's "Pong" game turned television from a passive to an active medium. By the end of 1978 more than 15 million sets were sold (Lavine, 1980). By June of 1982, 10% of the nations total households had video games (Pollack, 1983).

Video games are slowly beginning to filter into health care settings. To date, research regarding the use of video games with special populations has been minimal. A computer search of literature yielded the researcher an absence of any documented research pertaining directly to the use of video game play in nursing home settings. It will therefore be the purpose of this section to provide an overview of the areas in which video games are currently being utilized with special populations and to briefly identify some potential applications of video game usage with disability groups frequently found in nursing home settings.

In 1980 Dr. William Lynch, director of the Brain Injury Rehabilitation Unit in Palo Alto, California Veterans Administration Medical Center introduced video games as diversional activities for his patients. Lynch soon realized some potential therapeutic value in video game play and instituted "computer assisted training" as part of the center's rehabilitation program for stroke and head injury patients. Lynch used a variety of simple to complex video game programs with his patients to assist them in their development of: spelling skills, verbal reasoning, logical analysis, math skills, memory visual tracking, eye-hand coordination, planning and anticipation and improvement of reaction time.

St. Lukes Hospital in Milwaukee, Wisconsin, has video games as part of the hospital's treatment program. Before a patient begins video game therapy he receives an evaluation by the speech pathologist who determines which part of the patient's brain is not functioning properly and then selects the appropriate video game cartridges. In addition to the use of video games as rehabilitation aids for head injury and stroke patients, the staff at St. Lukes Hospital have introduced video games to teach stress control to patients who have experienced heart attacks.

Dr. Darrell Schlange, of the Illinois College of Optometry, has been using video games since 1977 to help

children correct eye problems such as strabismus and amblyopia, or lazy eye. Schlange (cited in Rosenblum, 1983) reports that children treated with video game therapy improve within a 10 to 20 percent shorter time frame. Schlange believes that much of the success children experience with video game therapy is due to the active interest that children take in the video games as opposed to passive treatment administered by the optometrist. In his letter to the editor of The Christian Science Monitor, the elderly Albert Busko speaks out in favor of video games. Busko (1982) reports that playing Pac-Man has brought his peripheral vision into greater utilization and has improved his driving abilities.

One of the sensory changes associated with aging is depth perception. Faulty depth perception contributes to many falls among the elderly. The Atari company recently developed a home video game with three dimensional images which are produced by the bending of laser light. The possibility exists for three dimensional video games to enhance the depth perception abilities of the elderly person.

In Houston, Texas, biologist Elton Stubblefield and university student Nancy Obergoenner have designed a video game for use with cancer patients. The game is called Killer-T-Cell and players score points as the T-cell zaps tumor cells in its path. Designers of the

Killer-T-Cell believe that giving cancer patients the opportunity to beat cancer in a game could well help such patients reduce anxiety related to their own illnesses. Stubblefield and Obergoenner feel that when a cancer patient is able to reduce the anxiety surrounding his illness, he can then channel greater mental energy into creative visualization techniques which some cancer specialists believe can help arrest cancer.

Professor Greenfield, a University of California psychologist has studied Pac-Man and found that video games are useful in working with persons who have difficulty with inductive reasoning. It is the interaction of multiple variables in the games which all operate simultaneously and react with each other that make the games especially useful in carrying over to the decision making process in real life. According to Professor Greenfield, another important carryover aspect of video game play to real life situations is that just as in learning about true life social relationships, learning the rules of video games requires much observation on the part of the player. There are many other potential psychosocial benefits that may be obtained by the disabled video game player. Skill improvement in video game play is said to be rapid. Mastering and progressing in a video game may enhance the self-esteem of the disabled person who feels he has lost much control over his

environment. Video games can provide the disabled individual with an opportunity to participate in a modified version of a sport he may have enjoyed in previous years. Examples of this might be video game golf or video game bowling. Video games can also be used as a tool to give the disabled individual a chance to actively participate in a sport.

Perhaps one of the reasons video games have been slow to filter into health care settings is that standardized production of adaptive game equipment for video game play has been very slow to come about. There are, however, some recent developments in video games that will allow a greater percentage of the disabled population to participate without special adaptive devices. In 1983 Amiga Corporation developed the "joy board." The joy board is to the feet what a joy stick is to the hands. It consists of a flat piece of hard plastic which the player stands on and controls game action by foot and leg movements. Skiing and surfing video games have been developed for use with a joy board. Joy boards could be used to enable an individual who has no use of his hands to participate in video games. Use of a joy board would also seem appropriate when working with disabled persons on balancing skills. Another recent development in the video game arena is that of voice command cartridges. Voice command cartridges enable a

player to direct game actions with spoken direction. The Milton Bradley Company has developed a voice command game cartridge for video baseball. In playing the game, the player controls movement of the ball on the screen by a series of statements made into a special microphone. Recently developed pneumotic devices allow individuals to control video game play through breath control. In working with paralyzed persons, an obvious advantage of both voice command cartridges and pneumotic devices would be that the paralyzed individual could enjoy playing the video game in the same manner as his able bodied playing partner. Certainly voice command cartridges, as well as pneumotic devices, could also be utilized to enhance the speech therapy programs of stroke patients.

Summary

A review of the literature suggests that persons who age most successfully are those who remain physically healthy and socially active. Elderly persons placed in nursing homes often must deal with deteriorating health, forced dependency and loss of social roles and contacts. This often sudden change of status makes the issue of resident morale a major concern for nursing home staff. Research has indicated that a positive relationship exists between activity level, degree of social interaction and nursing home resident morale. (Ajre, 1973; Graney, 1975; Noelker & Harel, 1978; Benette, 1980;

Leiberman & Tobin, 1983). Through provision of socialization opportunities such as video game tournament play, nursing home recreation personnel are in a key position to enhance resident morale.

CHAPTER III

METHODS

The purpose of this study was to examine the effects of video game tournament play on the morale levels of nursing home residents. Prior to initiating the study, a proposal of the research project was submitted to, and received approval by the administrator at Bethany-St. Joseph Care Center. Following is a description of the procedures and rationale used in subject selection, experimental treatment, instrumentation and treatment of statistical data.

Subject Selection

After receiving administrative approval for this project, the researcher reviewed all of the Bethany-St. Joseph residents' medical records and determined that 86 residents met the researcher's subject selection criteria. The sample size for the study was then chosen to be 40. Through use of a computerized random sampling technique the researcher arrived at the names of 40 individuals who were chosen and ultimately consented to participate in the study. Further use of the random sampling technique enabled the researcher to sub-divide the group of 40 resident participants into experimental

and control group subjects. As a result, 10 males and 10 females ranging in age from 65 to 90 comprised the experimental group and five males and 15 females ranging in age from 66 to 98 comprised the control group. Though a consent statememt was read to each subject who met the selection criteria, the exact purpose of the study was not disclosed to the participants until after the completion of the experimental treatment and the post test.

Individuals who met the following criteria were included in this research project:

1. Consenting males or females ages 65 and older.
2. Those individuals who were free of physical limitations which would prohibit participation in video game tournament play.
3. Those individuals who were not scheduled to be discharged from the home within the following six week period.
4. Those individuals who with instruction, could demonstrate an understanding of how to play the video game of pac-man.

Procedures

Administration of the Philadelphia Geriatric Center Morale Scale

After 40 residents had given their consent to be participants in the researcher's study 20 to 30 minute interviews for purposes of administering the PGC Morale Scale were scheduled with the residents at their earliest convenience. Resident interviews were conducted by two recreation fieldworkers in the privacy of the residents' rooms. The PGC Morale Scale questions were introduced by the following statements: "I would like to ask you a few questions. There are no correct or incorrect answers. You can just answer yes or no to most of the questions. Please respond honestly." The PGC Morale Scale questions were asked in a slow and distinct manner. When necessary questions were repeated but never reworded or explained. As the subjects responded to the PGC Morale Scale questions their answers were recorded. All of the pre-experiment morale scale results were obtained within five days.

Administration of Treatment in the Experimental Group

During the four weeks that elapsed between the pre and post test interviews, no treatment was administered to the control group subjects. Following completion of the the pre test each individual in the experimental group was escorted to the facility's recreation room. Through

All residents of the nursing home were informed of the video game tournament location and play times through the home's public address system and the weekly resident newsletter. With the exception of the nine experimental subjects who needed transportation assistance and any residents who specifically requested transportation to the tournament play area, no residents were accompanied to the tournament play area by recreation personnel.

Following the completion of the tournament and the second administration of the PGC Morale Scale, a Pac-Man party with Pac-Man cakes and decorations was held for all experimental group subjects. During the party the experimental subjects were given the details of the experiment they had just completed. Awards were also distributed to each of the experimental subjects. Award categories included: most smiley, most consistent, most willing, most kind to others, most helpful to others, most improved, most fun to watch play and most patient players.

Post Test Administration of the PGC Morale Scale

During the week following the last day of pac-man tournament play the PGC Morale Scale was administered to all experimental and control group subjects for a second time. The post test morale scale questions were asked in the same manner as the pre test morale scale

questions. Students responsible for administering the post tests were assigned to the same residents they interviewed for the pre test.

Instrumentation

Philadelphia Geriatric Center (PGC) Morale Scale

The Philadelphia Geriatric Center (PGC) Morale Scale is a self report test developed by Lawton in 1972 and revised by Lawton in 1975. The revised test, (George and Bearson, 1980) used in this study is a 17-item measure of the following: agitation, attitude towards aging and lonely dissatisfaction (Appendix A). The PGC Morale Scale is an instrument which may be administered by having the subjects either fill out a questionniare, or by following an interview format. The researcher in this study chose to follow the interview format. The PGC Morale Scale is constructed in such a manner that prevents respondent confusion and fatigue.

Scoring for the PGC Morale Scale

To determine an individual's score on the PGC Morale Scale, a numerical score of 1 is assigned to each high morale response. Low morale responses and items which go unanswered receive no score. Adding the number of high morale responses indicates an individual's ranking in each of Lawton's three dimensions of morale as well as

one's overall PGC Morale Scale ranking (Appendix B). Overall scores totaling 13 to 17 are considered high morale scores while scores of 10 to 12 fall mid-range and scores 9 and below are considered low morale scores.

Statistical Treatment

A chi square test was the statistical tool used to determine what, if any, effect video game tournament play had upon the morale of those residents participating in the study. Chi square analysis enabled the researcher to compare observed vs. expected changes in morale of both the experimental and control group subjects. The .05 level of significance was chosen as the significant level to accept or reject the null hypothesis. Choosing this level of significance may enable future comparisons of the results of this study with the findings of other researchers.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this investigation was to examine the effects of video game tournament play on the morale levels of nursing home residents. The results of the statistical analysis between the experimental group, which participated in the video game tournament and the control group, which did not participate in the tournament are presented in this chapter.

Hypothesis:

The .05 level of significance was used for the rejection of the null hypothesis. The null hypothesis stated there would be no significant difference in the median morale score improvement, as measured by the Philadelphia Geriatric Center Morale Scale, of those residents who participated in video game tournaments and those residents who did not participate in the tournaments.

Data:

Data for computing the observed (actual) changes in morale was obtained by subtracting all subjects' scores on the pre test from their scores on the post test. The resulting morale score totals were rank

ordered and a median test was implemented. The median test provided the researcher with a middle score from which one-half of the subjects' scores were expected to fall above and one-half below. The median test is a nonparametric tool which compares two samples for possible significant differences. This test was chosen as being appropriate for this study as it does not require a normal distribution of data or equal sample variances.

Results:

Chi square analysis of the information obtained through the median test revealed the following:

1. There was a significant improvement in the morale scores of the experimental group subjects.

2. The experimental subjects as a group showed greater improvement in morale than did the control group subjects.

The results of the statistical analysis on the total morale scores of the two groups leads to the rejection of the null hypothesis. This indicated that the experimental group, following participation in the video game tournament showed greater improvement in morale than the control group which did not participate in video game tournament play.

No norms have been established for the performance on the Philadelphia Geriatric Center Morale Scale. However, Lawton (1975) suggests a generalized guideline

that total morale scores ranging from 13 to 17 are considered high, from 10 to 12 mid-range, and scores of 9 and below indicate a low level of morale. In comparing pre and post test results, greatest increases in morale scores were noted for the experimental subjects whose pre test scores were in the low range. It seemed subjectively evident to this investigator that the individuals possessing low morale benefitted most from the added recognition, personal interaction, and other positive reinforcers inherent in the tournament play.

Though some nursing home activity directors now use video games in their programming, the investigator found no current professional literature documenting the effects of video game tournament play on the morale of nursing home residents. Therefore, a comparison of the results from this study and the findings of other researchers was not possible. However, several observations on the part of the investigator did indicate that video game tournament play can be a morale enhancing activity for geriatric residents in a nursing home setting. Few residents ever refused the opportunity to participate in tournament play. Those who did usually gave complaints of illness as their reason for not playing. Frequently, tournament players arrived at the video game area before their scheduled play time and seemed eager to await their turn to play. Cheering on of fellow

players, as well as the giving of "helpful hints," was noted. Comments volunteered by tournament players during and immediately after their play usually indicated enjoyment of participation. Resident's facial expressions were observed during play, and almost always indicated excitement and enthusiasm. At least three residents were unintentionally overheard conversing with their relatives regarding tournament participation. Following the tournament, one of the resident's relatives even purchased a video machine and a Pac-Man game cartridge for her birthday.

One of the reinforcing aspects of video game play is that skill improvement is said to be rapid. Though competition among tournament players was not stressed, the investigator did keep a record of the participants' scores, and all of the players showed some degree of skill improvement as demonstrated by increased game scores.

Following the completion of the tournament and the post testing, all residents who participated in the tournament were invited to a Pac-Man party. Although voluntary, there was 100% attendance at the party. Several residents freely exchanged many positive comments regarding their tournament participation. They also complimented one another on their participation. A feeling of camaraderie seemed to have developed among the players during the weeks of tournament play.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary

It was the intent of this investigation to evaluate the effects of video game tournament play on the level of morale of geriatric residents in a nursing home setting. Subjects were randomly assigned to an experimental or control group. The experimental group (N=20) participated in video game tournament play which consisted of daily Pac-Man play for a period of 19 consecutive weekdays. The control group (N=20) did not participate in the tournament play. Morale levels were measured by the PGC Morale Scale which was administered to both groups prior to the initiation of the experimental treatment and again following the treatment.

Findings

Chi square analysis of the Total P Scores, which indicated overall level of morale, demonstrated that a significant difference ($p < .05$) existed between the experimental group, which participated in the video game tournament play and the control group which did not participate in the video game tournament play. The

statistical findings of this study documented the effectiveness of video game tournament play in increasing the levels of morale of geriatric residents in a nursing home setting.

Conclusions

The null hypothesis of this study was rejected. Within the limitations of this investigation, the following conclusion was made:

In comparison with the control group subjects, the experimental group subjects who participated in video game tournament play showed a significantly greater median morale score improvement.

Recommendations

As a result of this research study the following recommendations are made:

1. As part of the quarterly review of each resident's activity participation, nursing home recreation personnel should use a tool such as the Philadelphia Geriatric Center Morale Scale to objectively evaluate individual morale levels.
2. To assist nursing home recreation personnel in justifying the need for their professional services, more research documenting potential therapeutic benefits of specific activity programs needs to be conducted.

3. More research regarding potential therapeutic benefits of video games for the disability groups common among institutionalized geriatric populations needs to be conducted. The transfer of training effects of video game play is one area that could be explored. An example would be to investigate whether anticipatory timing skills gained during the video game play are transferable to other gross motor skills. The use of video games as a tool for measuring changes in long term retention could be another area of study. After a resident has mastered the manipulative skills and timing aspects of video game play, skill retention following intervals without play could be measured. Video games require concentration and active participation on the part of the player making them potentially useful tools for studying resident attention span. The usefulness of video games as a treatment modality for improving eye-hand coordination in the elderly stroke patient is yet another area which could be investigated.
4. Residents who played video games on both large and regular size screen televisions unanimously favored the large screen. They maintained that play on the large screen seemed easier as objects

appeared to move more slowly than on the smaller screens. When introducing video games to nursing home residents it would be ideal to use the large screen televisions. The majority of the residents who played the video games favored playing in black and white. They reported that the bright colors distracted them from being able to concentrate on the game. Recreation personnel in nursing homes should give some consideration to introducing video games in black and white versus color.

5. Commercial availability of adaptive equipment for home video games is minimal. Through research, as well as practical applications, recreation personnel need to be the "ideas" people for those who design video games and equipment.
6. A variety of video games patterned after true life leisure activities are now available. To the extent possible, recreation personnel should attempt to introduce to the individual those video games which correspond with his leisure history.
7. Research has indicated that video games are beginning to be used for a variety of therapeutic purposes. As with other aspects of an individual's care, the treatment team approach to

video game therapy may be the best approach. Consulting members of the individual's treatment team (i.e. speech and/or occupational therapists) may ensure that the video games are instituted in a manner that provides optimal therapeutic benefits for the individual resident.

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APPENDIX A

Philadelphia Geriatric Center Morale Scale Test Items

Philadelphia Geriatric Center Morale Scale

1. Do things keep getting worse as you get older?

   Yes____ No____

2. Do you have as much pep as you did last year?

   Yes____ No____

3. How much do you feel lonely?

   Not Much____ A Lot____

4. Do little things bother you more this year?

   Yes____ No____

5. Do you see enough of your friends and relatives?

   Yes____ No____

6. Do you feel that as you get older you are less useful?

   Yes____ No____

7. Do you sometimes worry so much that you can't sleep?

   Yes____ No____

8. As you get older, are things Better ____ Worse____

   or Same____ as you thought they would be?

9. Do you sometimes feel that life isn't worth living?

   Yes____ No____

10. Are you as happy now as you were when you were younger?

    Yes____ No____

11. Do you have a lot to be sad about?

    Yes____ No____

12. Are you afraid of a lot of things?

    Yes____ No____

13. Do you get mad more than you used to?

    Yes____ No____

14. Is life hard for you much of the time?

    Yes____ No____

15. How satisfied are you with your life today?

    Satisfied____ Not Satisfied____

16. Do you take things hard?

    Yes____ No____

17. Do you get upset easily?

    Yes____ No____

APPENDIX B

High Morale Responses for the Philadelphia Geriatric Center Morale Scale

High Morale Responses for the PGC Morale Scale

Item	High Morale Response
Factor 1 - Agitation	
4. Do little things bother you more this year?	No
7. Do you sometimes worry so much that you can't sleep?	No
12. Are you afraid of a lot of things?	No
13. Do you get mad more than you used to?	No
16. Do you take things hard?	No
17. Do you get upset easily?	No
Factor 2 - Attitude Toward Own Aging	
1. Do things keep getting worse as you get older?	No
2. Do you have as much pep as you had last year?	Yes
6. Do you feel that as you get older you are less useful?	No
8. As you get older, are things _____ than you than you thought?	Better
10. Are you as happy now as you were when you were younger?	Yes
Factor 3 - Lonely Dissatisfaction	
3. How much do you feel lonely?	Not Much
5. Do you see enough of your friends and relatives?	Yes
9. Do you sometimes feel that life isn't worth living?	No
11. Do you have a lot to be sad about?	No

Item	High Morale Response
14. Is life hard much of the time?	No
15. How satisfied are you with your life today?	Satisfied