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AVIAN COMPANIONSHIP IN ALLEVIATION OF DEPRESSION, LONELINESS, AND LOW MORALE OF OLDER ADULTS IN SKILLED REHABILITATION UNITS [1]

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Summary.—To assess effects of a companion bird on the depression, morale, and loneliness of 40 older adults in a skilled rehabilitation unit, self-reported measures of depression, loneliness, and morale were completed on admission and 10 days later. With the presence of a companion bird the experimental group ($n=20$) showed a significant decrease in depression but none in morale or loneliness from the control group ($n=20$) who were without a bird. Use of a companion bird may lessen negative effects of change of residence for older adults.

Like any other period in life, old age is accompanied by transitions that require adaptation (Ferrini & Ferrini, 1989). One of these transitions, hospitalization, frequently requires another transition to a rehabilitation center. These transitions may require the elderly to face events that induce stress (Lieberman & Tobin, 1983). Two potential stressors, loss of residence and loss of independence, may be precipitating factors in loneliness (Perlman & Peplau, 1984). Relocation has even been implicated in increased death rates. According to Pablo (1977), excessively high death rates during the first 3 months following change of residence have been attributed to decreased activity, low morale, poor life satisfaction, and depression. Other common emotions and reactions include restlessness, boredom, and feelings of uselessness (Ferrini & Ferrini, 1989). Davis, Thorson, and Copenhaver (1990) reported an increase in either mortality or morbidity in a group of nursing home residents after a carefully planned mass move. Although previous studies were conducted in long-term care facilities, similar effects of loss of residence and independence can be expected to occur in hospital and rehabilitation settings.

In recent years, companion animals have been described as having beneficial effects on humans. Animals can enrich human lives in ways that help keep people healthy and happy, including decreased blood pressure and heart rate (Baun, Bergstrom, Langston, & Thoma, 1984; Grossberg & Alf, 1985) and increased survival rate after myocardial infarction (Friedmann,

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Katcher, Lynch, & Thomas, 1980; Friedmann, Katcher, Thomas, Lynch, & Messent, 1983).

Birds are one companion animal used with a variety of subjects. When caged birds were placed in rooms of adult patients in a psychiatric hospital where daily sessions of group therapy were held, the presence of the birds significantly improved participation and attendance at the sessions (Beck, Seraydarian, & Hunter, 1986). Patients in the bird group were significantly less hostile than patients in the nonbird group. An extensive investigation exploring the effect of a resident cat or bird (cockateel) on the morale, mental status, and functional health of older adults living in a residential care facility showed that subjects in the bird group experienced significant positive effects on factors related to loneliness and agitation, whereas no difference was found in the control (no animal) and a cat group (Small, 1984).

Mugford and M'Comisky (1976) placed either a plant (begonia) or a bird (budgerigar) in the residences of older adults ranging from 75 to 81 years of age. Items measured on a questionnaire reflected attitudes toward people, self-regard, physical and psychological well-being, and feelings toward the environment. Those subjects with birds showed improvements on items related to attitudes toward people and attitudes toward their own psychological health. The bird apparently acted as a social catalyst.

Since beneficial effects of association with birds have been demonstrated for free-living and institutionalized adults and nongeriatric psychiatric patients, it was hypothesized that the presence of a bird could lessen the negative effects of relocation to a skilled rehabilitation unit for the older adult. The purpose of this study, then, was to examine the effect of a caged bird on depression, loneliness, and morale of older adults in skilled rehabilitation units.

Method

Subjects

A sample of older adults admitted to two midwestern, skilled rehabilitation units participated. Criteria for inclusion were men and women (a) ages 65 or older, (b) able to read, write, and speak English, (c) willing to have a bird as a companion in their rooms, (d) having no allergies to birds, and (e) scoring 24 or greater on the Mini-Mental State Examination. Subjects were assigned randomly to experimental or control groups. Subjects were equally divided between the experimental and control groups within each setting. All newly admitted persons were approached, but participation was voluntary. Only those willing to give written consent were included.

Over a period of 5 months, 59 older adults agreed to participate. These individuals were asked to complete the Mini-Mental State Examination to screen for the presence of cognitive impairment. Nineteen scored below 24

on the Mini-Mental State Examination and were not eligible. Forty subjects scored greater than or equal to 24, met the other inclusion criteria, and comprised the sample. Subjects were assigned randomly to the control group ($n=20$) and to the experimental group ($n=20$). There were 13 men and 27 women ages 65 to 91 years ($M=76$).

Setting

The two skilled rehabilitation units were located in two midwestern cities 50 miles apart. The units have total capacities of 30 and 60 beds with an average daily census of 16 and 60 patients, respectively. These two units were comparable in relation to types of subjects, staffing ratios, and quality of care.

Measures of Dependent Variables

Morale.—The Philadelphia Geriatric Center Morale Scale (Lawton, 1975), a multidimensional measure of morale, is a self-administered scale that takes less than 10 minutes to complete with yes/no answers. Subjects are scored as having *low morale* (0) to *high morale* (17). Scores of nine or higher are representative of high morale. Factor analysis in a sample of older outpatients and institutionalized subjects yielded three factors which explained 43% of the total variance: agitation, attitude toward own aging, and lonely dissatisfaction. The internal consistency coefficient (Kuder-Richardson Formula 21) for that sample was .81 (Lawton, 1975).

Depression.—The Geriatric Depression Scale is a 30-point, self-administered scale of depression requesting yes/no responses. Reliability among older adults was indicated by a Cronbach alpha (Yesavage, Brink, Rose, Lum, Huang, Adey, & Leirer, 1983) of .94. Test-retest reliability was calculated by having 20 subjects complete the questionnaire twice 1 wk. apart. A correlation of .85 was obtained ($p<.001$), suggesting that within the time-frame considered, scores ". . . reflect stable individual differences" (Yesavage, *et al.*, 1983, p. 44).

The Geriatric Depression Scale's validity was indicated by successful screening for depression in populations of normal and psychiatrically ill older adults (Yesavage, *et al*, 1983) and in older, hospitalized patients with medical illnesses (Koenig, Meador, Cohen, & Blazer, 1988). Cronbach alpha was 0.94. Scores of >10 are indicative of depressed states in older adults (Yesavage, *et al.*, 1983). Koenig and colleagues found that when using a score of 11 or higher as indicative of depression, the scale had a 92% sensitivity, 89% specificity, 56% positive predictive value, and 99% negative predictive value.

Loneliness.—The Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) is a 20-item scale designed to measure loneliness. The three dimensions of the scale derived from factor analysis are intimate others, so-

cial others, and belonging (Austin, 1983). Each item is rated on a 4-point scale of often, sometimes, rarely, and never. The range of scores is from 20 to 80 with higher scores indicating greater loneliness. There are no established cut-points, but college students had mean scores of 36 to 56 (Russell, *et al.*, 1980), and nursing home residents had mean scores of 38, 22, and 42.85 (Calvert, 1989). Concurrent validity was demonstrated by significant correlations with scores on the Beck Depression Inventory ($r = .62$) and the Costell-Comrey Depression Scale ($r = .55$) (Russell, *et al.*, 1980). Discriminant validity was inferred from intercorrelations with measures of mood and personality as self-esteem −.49 and rejection .28 (Russell, *et al.*, 1980). Reported test-retest reliability was .73 over 2 months, and coefficient alpha was .94.

Independent Variable

The independent variable was avian companionship provided by a budgerigar in a cage. Budgerigars were chosen because they are inexpensive and small so a relatively small cage could be used. In the room of each subject in the experimental group was placed one budgerigar in a standard 18- × 20-in. bird cage placed on a 24-in. × 24-in. table situated in a corner. Four budgerigars with identical cages were used in the study. The subjects received verbal and written instructions relating to the bird. Since subjects had varying abilities to perform physical care for the birds, a decision was made not to have any subject provide care. In this way interactions between subjects and birds would be comparable for the entire experimental group.

Procedure

Individuals being admitted to the rehabilitation units received written information describing the study and informing them that they would be contacted by an investigator. Within 5 days after admission, an investigator contacted each new resident. The purpose of the study was explained, and written consent to participate was obtained. The investigators read from a script to limit differences in instructions.

Subjects were informed that based on their answers to several questions (the Mini-Mental State Examination) in stage I, they might proceed to stage II of the study. The Mini-Mental State Examination was chosen for stage I because it is easy to administer and has reported validity and reliability in screening older adults for cognitive status. The variables examined were orientation, recall, attention, concentration, language, and motor skills. The examination is a 30-point scale that can be administered by a health professional in 10 minutes. A score below 24 is indicative of cognitive impairment. Concurrent validity has been established with the Wechsler Adult Intelligence Scale. Test-retest reliability was .89 when the examination was given

by the same tester on two occasions 24 hours apart (Folstein, Folstein, & McHugh, 1975). Interrater agreement was 0.83 in the same circumstance.

Subjects scoring below 24 were thanked for their participation and eliminated from the study. The remaining subjects were randomized into experimental and control groups. The investigators then administered the Philadelphia Geriatric Center Morale Scale, Geriatric Depression Scale, and Revised UCLA Loneliness Scale (pretests). Demographic data also were collected.

After obtaining baseline data, a bird was placed in the room of each subject in the experimental group. Care for the birds was provided either at times the subject was not in the room or by having a staff member bring the bird and cage out of the room so that there was no intervention by the investigator through interaction with the subject. The control group had no intervention other than their routine care in the unit. At the end of 10 days, the three instruments were administered again to all subjects (posttest), and the bird was removed. Although a relatively short time period, 10 days were the maximum amount of time it could be predicted that a sufficiently large sample would still be in the institution. The experimental group was asked several open-ended questions regarding their feelings about participating in the study and having a bird. The study was approved by the University of Nebraska Institutional Review Board and the Animal Review Committee of the University of Nebraska Medical Center/University of Nebraska at Omaha.

Data Analysis

Multivariate analyses of variance were used to assess whether self-reported measures of morale, depression, and loneliness were affected over time in both the control (no bird) and experimental groups (bird). Demographic variables regarding sex of subject, previous living arrangement, and pet ownership history were included to examine their possible influence on subjects' responses. Means and frequency distributions were calculated for the demographic data. Open-ended questions were subjected to content analysis.

Results

The typical subject was female, widowed, had previously been living alone, and had owned a pet which most often was a dog. There were no statistically significant differences between groups for marital status, previous living arrangements, previous pet ownership, and type of pet owned. Neither sex of the subjects, mode of residence (alone or with another), or previous pet ownership had any significant effect on outcomes of the study.

Self-reported measures of morale, depression, and loneliness of an older adult hospitalized in a skilled rehabilitation unit were affected over time by

the intervention of placing a caged bird in the room. A significant effect was found between groups for scores on depression ($F_{1,35} = 6.75$, $p = .01$) with the group with a caged bird being less depressed (see Table 1).

TABLE 1
MEANS, STANDARD DEVIATIONS, AND SIGNIFICANCE FOR DIFFERENCES BETWEEN TIMES I AND II

Group and Measure	Time I		Time II	
	M	*SD*	*M*	*SD*
Control ($n = 20$)				
Morale	10.0	3.4	10.4	3.0
Depression	8.8	6.5	8.6	5.8
Loneliness	53.3	3.1	52.7	2.1
Experimental ($n = 20$)				
Morale	9.9	3.0	10.9	3.3
Depression	8.9	4.9	5.9*	4.4
Loneliness	53.9	4.2	54.1	4.4

*$p = .01$.

At admission, mean scores on the Geriatric Depression Scale were 8.8 and 8.9 at Time I (pretest) for control and experimental groups. Scores of >11 are accepted as an indicator of possible depression in older adults (Yesavage, *et al.*, 1983). Thirty percent ($n = 12$) of all subjects in the sample population had scores in the depressed range (11 to 25). Four of six subjects in the experimental group who scored in the depressed range on the pretest did not have posttest scores in that range. One experimental group subject scored nondepressed on the pretest and in the depressed range at posttest. None of the six subjects in the control group who scored in the depressed range scored outside that range at posttest; two other control subjects' scores moved them from the nondepressed to the depressed range.

Pretest mean morale scores for each group were within normal range with a slight improvement at posttest by the experimental group. Analysis of individual scores on the Philadelphia Geriatric Center Morale Scale showed that at pretest 18 (45%) subjects scored less than 9 which is indicative of low morale (Lawton, 1975). Pretest mean scores on the UCLA Loneliness Scale were 53.3 for the control group and 53.9 for the experimental group. Higher scores are indicative of greater loneliness (Russell, *et al.*, 1980). All subjects' scores were in the lonely range.

Subjects in the experimental group ($n = 20$) were asked to respond to five open-ended questions that reflected their feelings about having a caged bird placed in their rooms. The first question was what having the bird meant. Responses were positive and included such statements as the bird (a) was good company ($n = 7$), (b) helped pass time/was entertaining ($n = 6$), (c) made me happy ($n = 4$), and (d) was interesting ($n = 3$). In answer to a ques-

tion of whether the bird helped in adjusting to the move to the skilled rehabilitation unit, 15 of the 20 subjects stated the bird did help, 3 said it did not, and 2 were unsure. The third question asked for two positive aspects about having the bird in the room. Positive responses were that the bird helped to pass time, made subjects feel happier, served as a conversation piece, and helped to increase the number of visitors the subjects received. The fourth question requested two negative aspects about having the caged bird. Twelve of the 20 subjects gave none; three thought the bird was too noisy, two felt the bird was too wild, two felt the bird was messy, and one stated, "I was just too sick to enjoy the bird." The last question asked was whether they would recommend having a bird for others. All 20 subjects stated they would recommend this arrangement for others hospitalized in the unit.

Discussion

A significant finding was the presence of self-reported depression (30%), low morale (45%), and loneliness (100%) on the pretest in this particular sample of older adults in skilled rehabilitation units. It can be assumed that such factors may affect a patient's rehabilitation negatively. Results support the hypothesis that the presence of a caged bird can affect general well-being as those who had the bird during the first 10 days of their stay had decreased self-reported depression.

Animal therapy assumes there is a potential for the formation of a bond between a human being and the involved animal (Hamilton, 1985) and that bond is beneficial to both. A bond with an animal promotes conversation and facilitates social interaction which may help increase older adults' sense of self-worth. The potential for significant benefit seems greatest among elderly persons; research has shown that a pet may enhance recovery from an illness (Cusack & Smith, 1984).

The present findings in relation to depression are similar to those of Reed (1986) in which self-reported depression, as measured by the Depression Adjective Checklist, was significantly lower when a mascot dog was present in a long-term care facility for older adults than when the dog was absent. These findings are similar to other studies with caged birds although depression was not measured. Caged birds (finches) positively influenced scores on psychological well-being of hospitalized psychiatric clients (Beck, *et al.*, 1986), and when caged birds (budgerigars) were placed in homes of older adults, positive changes in scores on social and psychological status were noted (Mugford & M'Comisky, 1976).

The positive effect of a caged bird in decreased depression may be related to an increase in the number of people entering a patient's room when the bird was present. During posttreatment interviews, many patients stated

that health care providers and support staff spent more time in their rooms when the bird was present. One subject reported in delight that her physician, a geriatrician, would sing a short song to her bird each morning. More than one staff member made comments suggesting disappointment that the study concluded and said they would miss the enjoyment of going into rooms and visiting with the birds and patients. Visiting with other people may have alleviated depression. Hart (1989), in a study of effects of a fish aquarium placed in a coronary care unit, reported that medical visits to rooms where fish were present lasted longer than in rooms without fish.

The presence of a caged bird, however, was not reflected in scores on morale and loneliness. These findings are similar to those of Small (1984) who reported that the presence of a mascot bird, a cockateel, was not associated with a significant effect on the Philadelphia Geriatric Center Morale Scale scores of older adults living in a long-term care facility when compared to those in a control group or cat group. Conversely, Reed's (1986) finding that self-reported feelings of loneliness in older adults residing in a long-term care facility were significantly lower when a mascot dog was present than at times when the dog was not present was not supported. Decreased loneliness, together with less depression, was expected in this study. Theoretically the presence of the bird as well as the increased attention brought by having the bird in the room should have led to the lessening of loneliness. Since nearly all subjects scored considerably above the means previously reported, the effect of the bird does not appear to have been strong enough to move their scores out of the loneliness range. Possibly a longer or more permanent relationship with the bird would be needed.

All subjects scored 46 or greater ($M = 53.5$) on both pre- and posttest scores of the Revised UCLA Loneliness Scale. Higher scores are indicative of greater loneliness (Russell, *et al.*, 1980). Russell and colleagues reported the mean score of college students was 36.6. In nursing home residents with a mean age of 73.8 yr., Calvert (1989) found mean loneliness scores for high and low pet interaction groups were 38.2 and 42.9, respectively. All scores in this study were higher than any previously reported.

The differences among present results and those of similar studies also may be a result of design differences. Factors which might influence outcomes include where the animal is placed (patient's room, common area, or free to roam on unit), type of animal, patient's length of stay, and type of facility. This study differed in design which called for placing a companion animal in the patient's room rather than having one animal on the general unit (Reed, 1986) or in a common area (Beck, *et al.*, 1986; Small, 1984) as in the mascot studies. The companion approach here gave subjects the opportunity to have a more long-term, private, and possibly more personal in-

teraction with the bird. An advantage of using a caged bird is that it can be placed in a patient's room on a continuing basis with less difficulty than a dog or cat. Also, a caged bird requires less care.

Other variables may include clients' severity of illness and factors related to a change in health status. For instance, one client who arrived hopeful that daily radiation treatments would reduce the size of a malignant tumor was informed on the final day of the investigation that the tumor would have to be removed surgically. Thus, it is difficult to state what influenced the manner in which she responded to the three scales on that particular day.

Since there was no difference in subjects who previously lived alone versus those who resided with another person(s) in scores on the three measures, this study also did not support the findings of Goldmeier (1986), who reported for older women residing in their homes, pet ownership made a difference in psychological well-being only if subjects lived alone. Subjects in this study were in a skilled rehabilitation unit and were involved in daily multiple therapies.

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