Pet Ownership And Attachment As Supportive Factors In The Health Of The Elderly

Thomas F. Garrity*, Lorann Stallones, Martin B. Marx, and Timothy P. Johnson
Department of Behavioral Science, College of Medicine Office Building, University of Kentucky College of Medicine, Lexington, KY.

Abstract

In order to examine pet ownership and pet attachment as factors supporting the health of the elderly, a national probability sample of Americans 65 years of age and older was drawn. Participants answered telephone survey questions regarding pet ownership, life stress, social support, depression, and recent illness. In multiple regression analyses, pet ownership failed to predict depression and illness behavior, while pet attachment significantly predicted depression but not illness experience. In a group with particularly great distress (the bereaved), pet ownership and strong attachment were significantly associated with less depression only when the number of available confidants was minimal.

Introduction

Elderly people constitute a segment of the population at heightened risk for a variety of physical and emotional problems (Berkman et al. 1986; Murrell, Himmelfarb, and Wright 1983; Jette and Branch 1981; Estes 1969). This results from the natural decline in health and from changes in social situations that are thought to be health damaging, such as the deaths of friends and relatives (Berkman et al. 1986; Murrell, Himmelfarb, and Wright 1983). It has been suggested that ownership of and strong attachment to a pet may help protect the elderly from health decline caused by stress factors (Lago, Connell, and Knight 1983).

Relatively few community-based studies of the role of pet ownership and attachment in supporting the health of the elderly are available in the literature. Ory and Goldberg (1983) examined the influence of pet ownership and attachment on the subjective well-being (happiness) of relatively healthy, married, white women between 65 and 75 years of age residing in Washington County, Maryland. Although pet ownership was not associated with happiness in this population as a whole, pet owners of higher socioeconomic status experienced greater happiness than did nonowners of the same socioeconomic status. Among persons of lower socioeconomic status, ownership was linked with less happiness. Owners who were less attached to their pets were less

happy than were either attached owners or nonowners. This study suggests that the influence of these pet variables may be complex and conditioned by other characteristics of individuals.

Others have found an indication of longer survival in those owning pets. Mugford and M'Comisky (1975) found that elderly retirees experienced greater survival when given pet birds. The oft-cited study of coronary patients examined at one-year follow-up found a better survival rate in pet owners as compared to nonowners (Friedmann et al. 1980).

Several other studies of the bereaved have found evidence of an association of pet ownership or pet attachment and physical or emotional status (Akiyama, Holtzman, and Britz 1987; Bolin 1987; Lund et al. 1984). Akiyama and colleagues (1987), for example, found that, among 108 widows, the 51 pet owners were less likely to report problems with constipation, difficulty swallowing, persistent fears, cold sores, headaches, feelings of panic, and extensive medication taking. On an inventory of 52 symptoms, the nonowners reported greater symptoms scores on 40, a clustering that is far beyond chance.

However, much of the literature on the health-supporting attributes of pet ownership and attachment is anecdotal, ungeneralizable, and flawed as scientific research (Marx 1984). Another shortcoming in the earlier work is the failure to specify theoretical frameworks to guide the derivation of research hypotheses and link the studies to other related research. More recently, investigators have begun to address the issue of a theoretical framework contrasting the notion of support from companion animals with the support derived from humans (Netting, Wilson, and New 1987), particularly among the elderly (Erickson 1985; Robb and Stegman 1983).

In the present study, we conceive of pet ownership and attachment as factors that operate directly to enhance health and emotional well-being and/or indirectly by buffering the impact of stressful events on health and emotional well-being (Garrity and Marx 1985). We view the pet variable in the same way that others have viewed human social support—that is, as a resource that may enhance health directly and/or as one that comes into play beneficially only when there is a stressful challenge.

The constellation of relationships among stress, health, and social support is now a widely used research paradigm (Johnson 1988) with a long tradition in psychosomatic medicine (Cannon 1929; Selye 1946; Holmes et al. 1950). In recent years, several comprehensive reviews have assessed this literature (Barrera 1986; Cohen and Wills 1985; Kessler and McLeod 1985). The reviewers generally conclude that a volume of evidence currently exists supporting the direct and buffering effects of human social support on health status. However, the notion that the strength and type of effect found is, at least in part, dependent upon both the quality of the research design used and the types of measures also is gaining consensus. Furthermore, recent work has extended the notion of social support to include the quality of intimacy between confidants (Hall, Schaeffer, and Greenberg 1987; House and Kahn 1985) in addition to the presence of supporting people and organizations that was emphasized in the earlier work on social support (Berkman and Syme 1979). The introduction of the importance quality of intimacy in the theoretical construct has direct bearing on the need to assess the quality of attachment to companion animals, not just the simple fact of ownership or the presence of a companion animals in the household. In particular, there is need to assess the relationship between a household member and the companion animals, since the primary caregiver may not be the respondent in a telephone survey such as the one we conducted.

This paradigm suggests the research questions examined in the present study:

1. Among U.S. elderly, are emotional well-being and reported health linked with either pet ownership or the intensity of attachment to the pet (i.e., so-called direct effects)?

2. In this group, are the relationships between these pet and health variables conditioned by the stressfulness of the challenges faced by the person (i.e., so-called indirect or buffer effects)?

3. Given the apparent conceptual similarity of pet and human social support, among the elderly, does the availability of human supports affect the impact of pet supports on emotional well-being and reported health?

Materials and Methods

Sample

A national probability sample of U.S. households was selected by random digit dialing using a two-stage cluster design stratified by region (Waksberg 1978). All households contacted were screened for the presence of an adult aged 65 or older. When more than one eligible person resided in a household, a random respondent-selection procedure was used. A total of 1,232 persons 65 years of age and over were interviewed from the 1,794 households that contained an individual in this age group, resulting in an overall response rate of 68.7%. The final sample was compared to 1980 U.S. Census figures for the adult population aged 65 and over (U.S. Bureau of the Census 1983a and b). These results, presented in detail elsewhere (Marx, Stallones, and Garrity 1987), indicated that the sample closely resembled the U.S. elderly population in terms of sex and race composition, marital status, and metropolitan residence. The sample, however, also appeared to be somewhat younger and better educated than the total aged population. In addition, the northeastern region of the United States was slightly underrepresented, and the southern region over represented, because of refusal rates above and below average, respectively, in these two regions. Overall, however, for the purposes of testing our research questions, the sample appears to have provided a reasonable representation of the U.S. elderly population.

Interview Procedures

Interviews were conducted by professional interviewers at the University of Kentucky Survey Research Center in a manner described elsewhere (Marx, Stallones, and Garrity 1987).

Measurement of Variables

Recent Life Events. Twelve negative life events were used (see Appendix 1). These were derived from the original Schedule of Recent Events in Holmes and Rahe (1967), which were selected and employed by Moos and coworkers (1983), with modifications that substitute "retirement" for three items dealing with employment "Death of a favorite pet" was added for its relevance to this study. The items were scored by summing unit weights (1 = event did not occur; 2 = event did occur) rather than using the consensus weights employed by Holmes and Rahe (1967). This simplified procedure compares favorably with the more complex method (Ross and Mirowsky 1979). We

asked respondents to report only events that had occurred in the previous year. Inclusion of only negative events is justified by previous results that indicate their predictive value relative to illness (Ross and Mirowsky 1979). Rahe (1974) has presented data indicating satisfactory reliability and validity of the total instrument. Moos and colleagues (1983) have presented norms for a community sample and for a depressed sample using the shorter instrument. Billings and Moos (1982) have shown that the short instrument containing negative events is highly consistent in a test-retest study. Data on the test-retest reliability of the total instrument in diverse samples and cultures have been reviewed by Holmes and Masuda (1974).

Protective Factors: Human and Animal Attachments. The concept of protective resources was studied by assessing human and animal attachment and support. One question regarding human support is relevant in the present report: respondents were asked about the availability and number of confidants. This question was derived from a question in Moos and coworkers (1983) and modified slightly for use in a telephone interview. Respondents could answer that they had no, one or two, or three or more confidants available, and those responses were coded 1, 2, and 3, respectively. (In some analyses in which subjects were few, this three-point scale was dichotomized as near to the median as possible.) Studies of validity and reliability were not available, but the simplicity and objective nature of the information would tend to enhance these, except when respondents intended to deceive the interviewer.

About one-third of the respondents (408) owned one or more pets. In order to assess the quality of a human-companion-animal relationship and thereby provide clues to the likelihood of this support influencing health, responses to six questions were scored and combined to produce a single measure of the attachment between the respondent and the companion animal (see Appendix 2). All "yes" responses were valued at 2, and all "perhaps" and "no" responses were valued at 1. All questions were considered to be of equal weight, and their responses added together. This scale has an internal consistency coefficient of 0.58. Other psychometric properties are described elsewhere (Stallones et al., in preparation). Because the distribution of the composite measure is skewed such that most pet owners obtain high scores, it was dichotomized as close to the midpoint as possible. The type of animal was also ascertained, but, for the present report, owners of every type of animal were grouped together. Dog and cat owners constituted more than 85% of all owners in this population.

Emotional Distress. The Center for Epidemiological Studies' Depression Scale (CES-D) was used to measure emotional distress (Radloff 1977). People were asked 20 questions. Each question could be answered by specifying that the item was experienced during the previous week rarely or none of the time (coded 0), some or little of the time (coded 1), occasionally (coded 2), or most of the time (coded 3). Four items were stated in the opposite direction and were reversed before all 20 items were summed. The higher the score, the greater the depression.

The CES-D has been used to assess depressive symptoms in surveys of different populations in the United States (Comstock and Helsing 1976; Frerichs, Aneshensel, and Clark 1981; Roberts 1980) and has been shown to be a valid screening tool for detecting depressive symptoms in psychiatric populations (Weissman et al. 1977). It has also been used among the elderly (Berkman et al. 1986; Murrell, Himmelfarb, and Wright, 1983). It was selected for use in this study because of its demonstrated validity, reliability, and internal consistency (Venon and Roberts 1982). The internal consistency coefficient in our study population was 0.81.

Illness Behavior Measures. Because of the difficulty of obtaining reliable medical information using the survey format, respondents were asked four questions regarding functional capacity and illness behavior. They were asked to report the number of visits to the doctor in the past six months (1 = no visits, 2 = 1 or 2 visits, 3 = 3 or 4 visits, 4 = 5 or more visits), hospitalizations in past year (1 = no, 2 = yes), illness-related reductions in activity in past year (1 = no, 2 = yes), and prescription drugs currently being taken (1 = none, 2 = 1 or 2 medications, 3 = 3 or 4 medications, 4 = 5 or more medications). Responses were summed to provide an index of recent illness experience. These indirect measures of health provide more reliable and valid indicators of health status than do questions in a telephone survey about chronic medical conditions (Hochstim and Renne 1971).

Demographic Descriptors. Questions designed to ascertain demographic characteristics of the respondent include year of birth, gender, race, occupation and industry of employment, educational attainment, county and state of residence, marital status, number of persons in household, and number of children under 18 years living in the household. All demographic questions have been used repeatedly in prior survey research (VanDusen and Zill 1975).

Results

Associations among the major variables of this study are presented in Table 1. The first research question, regarding the links between pet variables and depression and illness, is addressed with these correlations, which indicate that only the relationship of pet attachment and depression is significant. With regard to depression, nonowners averaged 6.64 (N= 661), and owners averaged a similar 6.49 (N = 339) on the CES-D scale. (Note: Here and elsewhere in the analyses, total number of subjects is less than 1,232. All questions permitted respondents to refuse to answer; hence, there are missing data.) Nonowners scored 6.70 (N = 816), and owners scored a comparable 6.67 *(N = 405)* on the composite recent illness measure. Depression scores of more strongly attached and less strongly attached pet owners were significantly different 6.00 (N = 211) and 7.57 (N = 101), respectively (p < .04). Illness scores were not different 6.66 (N = 246) among the attached and 6.68 (N = 127) among the less attached.

The second research question asks if, instead of a direct relationship between pet and health variables, there might be a conditional relationship, such that the pet variables operate to buffer the impact of life changes on health when the person is under considerable stress, but not at low levels of stress. Two multiple regression equations, not presented here in tabular form, were generated. The first attempted to predict level of depression by using the direct effects of life change and pet ownership and the interaction effect of these two variables. The latter, if significant, would suggest that pet ownership operates differently on depression at different levels of life change. Only life change gave evidence of a significant influence on depression—the more life change, the more depression. The equation indicated that neither pet ownership nor the interaction is significantly predictive of depression.

Hence, we found no evidence for a buffering effect of pet ownership. The second regression equation found the same basic result when reported illness was made the dependent variable of the equation: there was no evidence of either direct or buffering influences of pet ownership on illness.

Table 2 presents the results of two parallel equations in which pet attachment has been substituted for pet ownership. In the first equation, both life change and pet attachment account for significant,

though small, increments in the variance of depression; however, no buffering effect is found for pet attachment. In the second equation, only life change accounts for a significant but small portion of the variance in reported recent illness.

The third research question asks whether the availability of human social support affects the impact of pet support on emotional well-being and health. In order to address this issue, human social-support variable (availability of confidants) was added to the equations just reviewed. In the first of two equations, not shown here in tabular form, both the life change and confidant support variables were found to explain significant but small portions of variance in depression, with greater life change and less confidant support being associated with greater depression. However, even with adjustment for human social support, pet ownership did not emerge as a significant predictor of depression. The same was true when reported illness was substituted for depression as the dependent variable, although, in this case, the human support variable failed to emerge as a significant predictor of illness.

In Table 3, two parallel regression equations were computed in which pet attachment was substituted for pet ownership. In the equation predicting depression, life change and pet attachment remain significant predictors. In the second equation, only the interaction of confidant support and pet attachment accounts for a significant portion of the variance in reported illness. At the low support level, a stronger pet attachment is associated with less reported illness. At the high level of support, stronger pet attachment is associated with slightly greater reported illness. In other words, the significant interaction indicates that pet attachment relates differently to illness in circumstances of low and high support, namely, that strong pet attachment is only linked to enhanced health when human support is less available.

In the secondary analyses intended to examine the role of pet variables in a subgroup at particular risk of emotional and physical difficulty, the bereaved (those having experienced within the previous year the death of a spouse, another family member, or a friend) were examined in regard to the impact of pet and human social support on emotional and physical illness. The next two tables provide some indication that, at a low level of confidant support, pet variables are linked to less depression among the bereaved. Table 4 illustrates that bereaved elderly without confidants experience less depression when they are pet owners. Pet ownership among the bereaved appears to be unassociated with depression when one or more confidants are available. Table 5 illustrates a similar association in relation to pet attachment. Among those bereaved respondents with two or fewer confidants, stronger pet attachment is linked to less depression. (Note: In this table, respondents with zero, one, or two confidants were combined for analysis because there were too few with no confidants for separate analysis.) No such association is found among bereaved elderly with more confidants present. When reported illness was examined as the dependent variable, pet variables and confidant support were not found to interact.

Discussion

Among the elderly respondents of this study, the number of life change events experienced during the previous 12 months was modestly associated with both depression and reported illness scores. The life stress literature suggests that this is to be expected. When social support, here operationalized as availability of confidants, was examined in the whole sample as a potential protector of emotional and physical health in the presence of varying levels of life stress, it was modestly associated with depression but not with reported illness. The elderly who had support

available from a confidant experienced less depression than did those without confidant support. There was, however, no indication of a buffer effect for this variable—confidant support appeared to operate similarly at lower and higher levels of life events.

Pet ownership alone was not associated with either emotional or physical health status in the elderly in this sample; however, strong attachment to a pet was associated with less depression. The statistically significant influence of pet attachment was manifested as a direct effect on depression rather than a buffering effect between life events and depression. Additional analysis of a very select, high-risk group—the recently bereaved elderly with minimal confidant support—suggested that both pet ownership and strong pet attachment were associated with lessened depression.

In one instance, a pet variable was found to be associated with the level of recent illness. Among elderly pet owners with minimal confidant support, those who were more attached to their pets reported less recent illness than did those who were less attached. Among older pet owners with greater confidant support, the pet attachment-illness relationship was weaker and in the opposite direction.

The literature on the role of pets in the support of the health of the elderly is growing. Currently, however, there are few studies with which the results of the present study can be compared, among them, the studies of Akiyama and colleagues (1987) and Bolin (1987), which do provide points of comparison for some results of this study. The former found evidence that, among the bereaved, pet owners reported fewer physical and psychophysiological symptoms than did nonowners. We found evidence for greater depression among the bereaved who were not pet owners as compared to those who owned pets. But we were unable to detect among the bereaved owner/nonowner differences in levels of physical illness. And, whereas Akiyama and coworkers found no differences in either psychological or psychophysiological symptoms between those who were more or less attached to their pets, we found attachment to be negatively associated with depression. Bolin (1987) found that bereaved dog owners and nonowners differed on only one of ten measures of psychological status—namely, that owners expressed less guilt on the Grief Experience Inventory than did nonowners (Sanders et al. 1979)—but the impact of attachment to the pet was not examined separately from ownership. Bolin presented no analyses of the association of ownership and physical health status. In regard to the interplay of human social support and pet support, Bolin found no evidence of additive benefits of the two during bereavement, as was expected, but did find that three aspects of emotional adjustment were enhanced by human social support alone.

In terms of the current knowledge regarding pet ownership and health, it appears that the elderly who are attached to their pets are likely to experience better morale than do those pet owners who are not attached. There is some evidence that ownership, regardless of attachment, is linked to enhanced emotional status. Evidence of beneficial effects on physical health for owners or attached owners is limited in the literature and not apparent in this study. Based on these data, we believe that pet factors may have only a physical health-protective role under special circumstances, such as in the absence of human confidants.

An important limitation of this study is its cross-sectional design. The fact that data on all variables were collected at the same time leaves open the possibility that the pet-attachment-depression association indicates that pet attachment responds to depression, rather than the opposite. The

question of which factor is antecedent can only be sorted out with a longitudinal research design. Furthermore, when interpreting cross-sectional findings on a limited age group, such as those over 65, the possibility exists that the effects are related to social or environmental factors peculiar to the time period during which these people have lived, the so-called cohort effect. Thus, persons who are younger than this sample may, upon reaching the age of 65, experience a different level of attachment to their pets, and there may be different consequences associated with such attachment. For this reason, extrapolation of our findings to subsequent generations is inappropriate.

Our tentative conclusion is that, among the U.S. elderly, pet attachment is related to enhanced emotional status. Furthermore, among bereaved elderly persons with minimal human confidant support, a pet may provide support sufficient to lessen emotional distress. These conclusions, though strengthened by the use of a national probability sample, must be viewed as an early step in critically examining strongly held assumptions about the health and emotional benefits of pet ownership.

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Appendix 1. Twelve Item Measuring Recent Life Events

Within the last twelve months . . .
 1. Have you lost something of sentimental value?
 2. Have you had a close friend die?
 3. Have you been divorced or separated?
 4. Have you had trouble with your in-laws?
 5. Has your spouse died?
 6. Has another family member (other than spouse) died?
 7. Have you retired from a job?
 8. Has your income decreased substantially (enough to be noticed)?
 9. Have you gone deeply into debt?
10. Have you had legal problems?
11. Have you been assaulted (beat-up, mugged, or attacked)?
12. Has a favorite pet died?

Appendix 2. Six Item Measuring Pet Attachment*

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 1. Do you consider your pet a friend?
 2. Do you talk to your pet?
 3 . Would you say that owning a pet adds to your happiness?
 4. Do you talk to others about your pet?
 5. Do you often play with your pet?
 6. Does your pet know how you feel about things?

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*Response choices are: yes, no, maybe, don't know, refused to answer

Table 1. Pearson Product Moment Correlations of Life Change, Social Support, Pet and Health Variables Among Elderly (65+ Years) Americans

	Life change	Confidant support	Pet attachment	Pet ownership	Depression	Illness
Confidant	0.041					
P	0.159					
N	1184					
Attachment	-0.001	0.001				
P	0.980	0.973				
N	369	373				
Ownership	0.045	0.006	cannot			
P	0.119	0.821	compute			
N	1196	1218				
Depression	0.186	-0.143	-0.114	- 0.010		
P	0.000	0.000	0.04	0.746		
N	976	991	312	1000		
Illness	0.089	-0.051	-0.004	-0.006	0.290	
P	0.002	0.073	0.925	0.818	0.000	
N	1186	1207	373	1221	993	
Mean	13.29	2.69	1.66	1.33	6.59	6.69
Standard deviation	1.20	0.54	0.47	0.47	6.80	2.10
Minimum	12.00	1 (none)	1 (weak)	1 (No)	0	4
Maximum	19.00	3 (3+)	2 (strong)	2 (yes)	44	12
Number	1196	1218	376	1232	1000	1221

Table 2. Variance Explained from Regression Analyses of Depression and Illness Experience, Predicted by Life Change, Pet Attachment, and Their Interaction Among Elderly (65+ Years) Americans

	Dependent variables	
Predictor variables	**Depression**	**Illness**
Life change	.0490**	.0098*
Pet attachment	.0133	.0000
Life change x pet attachment	.0000	.0064
	307	365
N		
Total R^2	.0623	.0162

*p < .05
**p < .01

Table 3. Variance Explained from Regression Analyses of Depression and Illness Experience, Predicted by Life Change, Confidant Support, Pet Attachment, and Their Interactions Among Elderly (65+ Years) Americans Dependent variables

	Dependent variables	
Predictor variables	**Depression**	**Illness**
Life change	.0484**	.0090
Confidant support	.0060	.0048
Pet attachment	.0135*	.0000
Life change x confidant support	.0009	.0010
Life change x pet attachment	.0000	.0053
Confidant support x pet attachment	.0012	.0110*
	304	362
N		
Total R^2	.0700	.0311

*p < .05
**p < .01

Table 4. Association of Pet Ownership and Depression by Presence of Confidant Support (Column Percentages) Among the Bereaved

	Owner	Nonowner	Total
No confidant[1]			
Low depression	5 (100.0)	7 (46.7)	12
High depression	0 (0.0)	8 (53.3)	8
Total	5	15	20
One or two confidants[2]			
Low depression	21 (44.7)	39 (43.8)	60
High depression	26 (553)	50 (56.2)	76
Total	47	89	136
Three or more confidants[3]			
Low depression	91 (53.5)	215 (60.2)	306
High depression	79 (46.5)	142 (39.8)	221
Total	1 70	357	527

1. Fisher's exact probability = 0.05
2. Chi-square = 0.009; $p = .92$
3. Chi-square = 2.12; $p = .14$

Table 5. Association of Pet Attachment and Depression Classified by Confidant Support (Column Percentages) Among the Bereaved

	Weak pet attachment	Strong pet attachment	Total
Zero to two confidants[1]			
Low depression	4 (23.5)	21 (60.0)	25
High depression	13 (76.5)	14 (40.0)	27
Total	17	35	52
Three or more confidants[2]			
Low depression	30 (53.6)	61 (53.5)	91
High depression	26 (46.4)	53 (46.5)	79
Total	56	114	170

1.Chi-square = 6.09; $p = .01$
2.Chi-square = 0.00; $p = .96$