

Characteristics of ageing pets and their owners: dogs v. cats

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Abstract

The purpose of the present cross-sectional, convenience sampled study was to ascertain differences in diet and lifestyle between cat (n 155) and dog (n 318) owners and their pets. Average cat ownership was 6.1 (SD 5) years and average cat's age was 6.9 (SD 5) years. Cats were reported to be overweight (14%), fed *ad libitum* (87%), given medication (11%) and had health conditions (24%). Cat's age was significantly and positively related to cat's weight, duration of illness, owner's BMI and some owners' dietary characteristics. Overweight in cats was significantly associated with overweight in older owners (≥ 60 years). Younger cat owners (< 60 years) showed non-statistically significant trends between the owner's BMI and cat's overweight. Cat's age was inversely correlated with cat's and owner's activity levels. Dogs were owned for 5.5 (SD 4) years and mean dog's age was 5.9 (SD 4) years. Dogs were reported to be overweight (18%), fed *ad libitum* (49%), given medication (31%) and had health conditions (34%). Dog's age was positively associated with duration of illness. Dog's age was inversely correlated with amount of food fed, dog's activity and owner's exercise and intake of fruit, vegetables and whole grains. Dog's age was positively correlated with the owner's BMI and frequency of added fat consumption. Overweight in dogs was associated with overweight in older owners (≥ 60 years) and was correlated with poorer health in both the dog and the owner. Younger dog owners were more likely to have an overweight dog if they themselves were obese. Similarities were found in owner's and pet's diet and lifestyle issues with ageing. Overweight was associated with ageing, dietary, lifestyle and health issues in this sample. Older owners who were overweight had overweight pets. Strategies should be targeted towards decreasing both owner's and pet's overweight. The use of exercise and dietary interventions should be encouraged.

Key words: Dogs: Cats: Older adults: Epidemiology: Nutrition

Information regarding reciprocity of influence on dietary and lifestyle patterns between pets and their owners is of interest. Reciprocal influences occur between persons in a household in terms of dietary patterns and nutrient intake. Spouses influence one another's macronutrient intake, explaining almost half the variance in aggregates within a household⁽¹⁾. Living arrangements are associated with dietary quality in older adults, such that energy density was determined by the composition of the household⁽²⁾. Reciprocal influences can also be seen among spouses with regard to increased fruit and vegetable consumption ($P < 0.001$) and physical activity ($P < 0.0001$), particularly with older adults^(3,4).

Research exists regarding the reciprocal effects of and the relationships between animals and their owners as well as the differential effects of cat *v.* dog ownership on owner's characteristics such as with feeding and exercise^(5–7). Dogs may increase exercise frequency and alter activity patterns of their owners. Cutt *et al.* showed that acquiring a dog increased the minutes of recreational walking by the owner, with improvement in the owners' beliefs regarding exercise and

more motivation and social support. Furthermore, it was found that dog owners wished to walk their dogs more often and barriers included the unavailability and inaccessibility of parks and open spaces. These environmental constructs, not internal motivation, were cited as reasons for the decline in physical activity⁽⁸⁾.

Pets may alleviate depression, anxiety and alter social patterning of their owners⁽⁹⁾. Pet owners scored higher on civic engagement scales, and were perceived as friendlier. Owners showed greater proclivity towards social interaction than non-pet owners⁽¹⁰⁾. Social workers increasingly inquire about pet ownership as a result of the identified health and social effects⁽¹¹⁾. Health effects of pet ownership range from improved mental health to alterations in blood pressure to decreasing post-surgical complications and improved healing^(12–14). Human health practitioners use the companion animal bond to improve patient care by applying animal-facilitated therapy⁽¹⁵⁾. Increases in the marketing and utilisation of animal-facilitated therapy have shown improvements in human patient outcomes where other modalities

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have failed⁽¹⁶⁾. Petting a companion animal decreases blood pressure⁽¹⁷⁾, improves haemodynamic measures, lowers neuro-hormonal levels and decreases anxiety in critically ill patients⁽¹⁸⁾. Implementation of animal-facilitated therapy in an intensive care unit was found to be possible as well as highly successful in improving patient morale and decreasing co-morbid complications^(19,20).

Animals assist their owners with health and well-being. Anecdotal evidence suggests that owners wish to do the same for their pets using a variety of strategies. Feeding reports in Swedish dogs revealed that deviations from recommendations for several micronutrients, including vitamins A and D, occurred when dogs were fed table foods only, or commercial foods plus daily supplements. The dogs were overfed by well-meaning owners who were trying to improve the health of their pets⁽²¹⁾. Freeman *et al.*⁽²²⁾ reported that 2.5% of owners fed therapeutic diets, 10% fed supplements and only 3% acknowledged their pets' obesity as being a health hazard. Well-meaning strategies, such as with raw food feeding⁽²³⁾, commercial weight-loss diet feeding⁽²⁴⁾, non-standard feeding regimens^(25,26) and supplement use in pets⁽²⁷⁾, have been documented⁽²⁸⁾.

Owner's lack of awareness of the health risks of obesity for their animals is an issue that requires educational outreach. The purpose of the present study was to ascertain differences in diet and lifestyle between cat (n 155) and dog owners (n 318) and their pets.

Methods

The design of this study was cross sectional and convenience sampled. Respondents were recruited by word of mouth, flyers at veterinary clinics and pet shops, Internet listserves and recreational facilities, in the rural midwestern USA. The demographics of the sample matched the demographics of the regions from which respondents were recruited. Participation was voluntary and uncompensated.

The study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects/patients were approved by the Human Subjects Committee and Institutional Review Board at the primary institution where the research was conducted. Written informed consent was obtained from all subjects. Institutional and national guidelines for the care and use of animals were followed and all data collection procedures involving animals were approved by the Institutional Review Board and Animal Subjects Committee, obtained from the primary institution where the research was conducted.

Inclusion criteria consisted of being >17 years, owning a pet and being able to provide informed consent. The data were identifiable by Identification Number (ID) only. Trained interviewers administered questionnaires that were approximately a page in length in person to participants who self-reported data on themselves and their pets. Data included demographics, dietary patterning, lifestyle and health history for both pets and owners. Efforts to minimise bias included telling subjects to provide honest answers and that they could skip questions or stop the interview at any time.

Data were entered, cleaned, coded and checked through the double-entry method in Excel[®] (Microsoft Corporation, Redmond, Washington, USA). The cleaned data were transferred to SPSS[®] version 17.0 (IBM Corporation, Somers, New York, USA) for analyses. Missing data were coded as 'missing' and included in all analyses. Analyses included descriptive statistics, Pearson's correlations and t tests with significance levels set at $P < 0.05$ for statistical analyses. Practical significance testing was performed using Cohen's d .

Results

Health characteristics of companion cats and dogs are shown as percentages in Fig. 1. Older owners (>60 years) were more likely to own cats than dogs. Mean cat's age was 6.9 (SD 5) years and time owned was 6.1 (SD 5) years. For cats with reported illnesses, mean duration of illness was 3.9 (SD 3) years. Pearson's correlations showed that cat's age was positively related to cat's weight ($P < 0.01$), duration of illness ($P < 0.05$), owner's added dietary fat ($P < 0.05$), whole grain ($P < 0.05$), fruit and vegetable intake ($P < 0.01$) for the total sample. In the sample, 33% of the cats were 9 years of age or older.

The older the cat, the greater the body weight and the longer the cat had been diagnosed with one or more disease states by the veterinarian. Cat's age was inversely correlated with cat's activity level ($P < 0.01$), owner's exercise ($P < 0.05$) and owner's fast food consumption ($P < 0.05$). Older cats had less reported activity and their older owners (>60 years) had similarly less formal exercise as measured by a physical activity frequency questionnaire. Older owners ($\mu = 75.1$ (SD 3.8) years) ate less fast food than younger cat owners ($\mu = 40.3$ (SD 11.6) years). Younger cat owners had non-statistically significant relationships between their own BMI and diagnosis of overweight in their cat. Cat treat feeding was inversely associated with being overweight ($P < 0.05$). Owners of sick (23%) *v.* healthy (77%) cats showed that owners of healthy cats ate more servings of fish ($P < 0.05$),

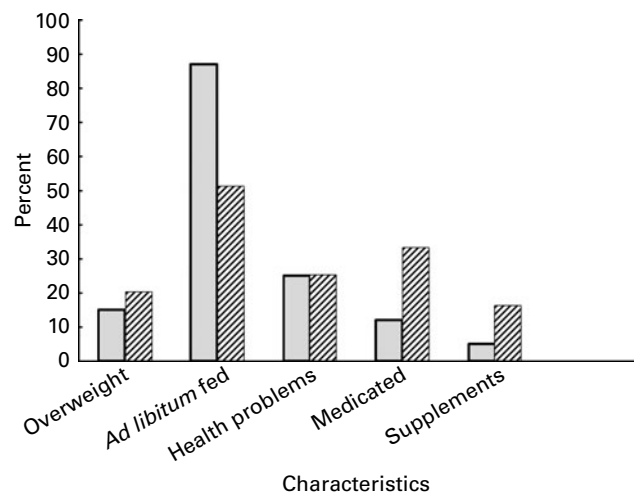


Fig. 1. Owner (n 473)-reported pet health and feeding characteristics of their companion dogs (▨, n 318) and cats (■, n 155).

but no other statistically significant finding was found with regard to dietary intake or lifestyle characteristic, and measures of practical significance, Cohen's *d*, were low. The *t* tests showed that cat owners were older than dog owners ($P < 0.05$).

Mean dog's age was 5.9 (SD 4) years, and duration of dog ownership was 5.5 (SD 4) years. For dogs with reported illness, mean duration of illness was 3.6 (SD 3) years. Pearson's correlations revealed that dog's age was positively associated with duration of illness ($P < 0.01$). Dog's age was inversely correlated with amount of food fed to the dog ($P < 0.01$), dog's level of activity ($P < 0.05$) and owner's exercise ($P < 0.05$), owner's fast food consumption ($P < 0.05$) and the owner being overweight as defined by BMI (weight (kg)/height (m²) > 25 kg/m²) ($P < 0.01$). Dogs diagnosed as overweight by a veterinarian constituted 19.2% of the total sample. Both overweight owners and their overweight dogs had poorer health status as evidenced by diagnosed illness. Older overweight dog owners ($\mu = 67.8$ (SD 6.1) years) had overweight dogs. Younger dog owners ($\mu = 38.2$ (SD 11.5) years) who were classified as obese were more likely to have a dog diagnosed as overweight ($P < 0.04$). Of the dogs in the sample, 36% were classified as 'sick'. There were no statistically significant differences in owner's dietary variables, such as servings of fish or alcohol intake between the owners of sick and healthy dogs.

Discussion

In this sample, older owners were more likely to have cats. This may be due to older persons having less physical or fiscal ability to care for a dog, or whose living arrangements preclude owning a dog. Treats were associated with lower weight among cats in this sample, which may be due to owners trying to overcome poor appetite or finicky eating. The result may have been confounded by illness, which resulted in poor appetite or finicky eating. Fish intake was the only dietary variable that differed between sick and healthy cat owners. Owners of healthy cats ate more servings of fish. This may be of significance as increased fish consumption is noted among persons who have healthier lifestyles and this characteristic may extend to provision of healthier lifestyle to the cat.

Both cat's and dog's reported overweight was lower than the published literature, despite querying owners about veterinarian assessment of pet body condition. This may be because of the owner's failure to report, veterinarian failure to inform or some other explanation. Older dogs were fed less, exercised less and had owners who were overweight, sedentary and had poorer dietary patterns. Both dogs and their owners had poorer health and nutritional status with increased weight. This may be due to owners who are overweight and sedentary, are not walking their dogs and/or not engaging in activities with their pets. Poor dietary patterns, such as with increased fast food consumption, is associated with overweight and sedentary behaviours, all of which can have an impact on the dog⁽²⁹⁾. No statistically significant differences were found in dietary intake between the owners

of sick and healthy dogs. Overweight in dogs was associated with overweight in their owners.

There were many limitations to the present study. It should be noted that correlations between dog's age and owner's lifestyle characteristics could be biased by the owner's age and the results being an artifact cannot be ruled out. The data were self-reported, although trained interviewers did request verification throughout the interview. Weight, height, food intake and physical activity data are subject to under- and over-reporting. Several biases, such as social desirability, recall and misclassification biases, are known to skew findings for both owners reporting on themselves and owners' surrogate recall for their pets. Participants were unaccustomed to giving information about their pets and had difficulty with recalling and relaying information. There was no compensation for participation, which may have led to participants' unwillingness to spend time with interviewers in the reporting and verification process. Lastly, surveys do not have the ability to detect causality; therefore, further study is required.

Conclusions

Similarities were found in owner's and pet's diet and lifestyle issues with ageing. Overweight was associated with ageing, dietary, lifestyle and health issues in this sample. Older owners who were overweight had overweight cats or dogs. This suggests that educational and marketing strategies across both cat and dog owners should be targeted towards decreasing both owner's and pet's overweight. The use of exercise and dietary interventions should be encouraged. Marketing and educational strategies regarding obesity prevention and health promotion should take into account that overweight in the companion animal may be a reflection of obesity in their owners.

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