Preliminary investigation of employee’s dog presence on stress and organizational perceptions

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Abstract
Purpose – The purpose of this paper is to present a preliminary study of the effect of the presence at work of employees’ dogs on stress and organizational perceptions.

Design/methodology/approach – A pre-post between-group design with repeated measures was used to compare differences between employees who bring their dogs to work (DOG group), employees who do not bring their dogs to work (NODOG group), and employees without pets (NOPET group) on physiological and perceived stress, perceptions of job satisfaction, organizational affective commitment, and perceived organizational support.

Findings – Combined groups scored significantly higher on multiple job satisfaction subscales than the reference norm group for these scales. No significant differences were found between the groups on physiological stress or perceived organizational support. Although perceived stress was similar at baseline; over the course of the day, stress declined for the DOG group with their dogs present and increased for the NODOG and NOPET groups. The NODOG group had significantly higher stress than the DOG group by the end of the day. A significant difference was found in the stress patterns for the DOG group on days their dogs were present and absent. On dog absent days, owners’ stress increased throughout the day, mirroring the pattern of the NODOG group.

Originality/value – This paper provides the first quantitative exploratory study of the effects of pet dogs in the workplace setting on employee stress and perceptions of satisfaction, support and commitment.

Keywords Pets in the workplace, Employee stress, Support, Commitment, Satisfaction, Animals, Workplace, Work psychology, Job satisfaction, Stress

Paper type Research paper

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Introduction

Organizations continue to be aware of the importance of employee satisfaction, commitment, and perceived organizational support (Allen and Meyer, 1990; Aubé et al., 2007; Barker, 2005; Eisenberger et al., 1986; Meyer and Allen, 1997; Spector, 1997). Many factors can influence employee perceptions of the workplace (Abbott, 2008; Falkenburg and Schyns, 2007; Foote et al., 2005; Jain et al., 2009; Mcshane and Von Gilnow, 2010). A growing trend to allow pets in hospitals, nursing homes, and other health care facilities is spreading to companies that report positive anecdotal reactions by employees and customers. The reactions are consistent with human-animal interaction research supporting the role of pets as a form of nonevaluative social support which may extend to the workplace to enhance interpersonal interactions, positively affect employee morale and turnover, and reduce stress reactions.

Pet ownership has been associated with a number of positive health outcomes, including increased survival one-year after a heart attack (Friedmann and Thomas, 1995), fewer doctor visits (Headey, 1999; Siegel, 1990; Headey et al., 2002), less loneliness and greater social support (Headey, 1999), and emotional closeness and support (Barker and Barker, 1988; Barker et al., 1997). An increasing number of studies support the premise that pets, by providing a nonevaluative form of social support, buffer the impact of stress for their owners. In a study measuring cardiovascular stress reactivity following a stress task completed in the presence of a pet dog or a close friend, researchers reported lower physiological indicators of stress in female dog owners when the pet was present (Allen et al., 1991). In a related study, investigators studied cardiovascular stress reactivity in married couples with and without pets and reported couples with pets had lower blood pressure and heart rate at rest and lower systolic blood pressure and heart rate during a mental stress task (Allen et al., 2002). Similar benefits were reported in a randomized controlled trial in which hypertensive stock brokers starting medication to treat hypertension were randomly assigned to acquire a pet dog or cat or to a wait list control (Allen et al., 2001). After six months, those owning pets performed better on mental stress tasks and demonstrated lower physiological response to stress compared with the control group.

Using cortisol as a measure of physiological stress, other researchers found a significant reduction in salivary cortisol in healthcare providers after as little as 5 minutes interacting with an unfamiliar therapy dog (Barker et al., 2005). A more recent study explored response patterns of multiple indicators of physiological stress in dog owners interacting with their own or an unfamiliar therapy dog following a stress task (Barker et al., 2010). Results showed similar patterns consistent with stress following the mental stress task and relaxation during and following the dog interaction. Of particular interest was the similarity in relaxation patterns seen whether adults interacted with their own or an unfamiliar therapy dog.

While an increasing number of organizations are permitting pets in the workplace, an extensive literature review identified only one published study on the effect of pet presence on employees or the organization. Using an author-developed questionnaire, the authors surveyed employee perceptions in several small companies permitting pets (Wells and Perrine, 2001). The overwhelming majority (84 percent) of those bringing pets to work in these companies consisted of business owners or managers. The most strongly endorsed benefit of having pets in the workplace was perceived lowering of
stress, although some endorsement of improved health and organizational satisfaction were also noted. Aside from this one survey (not conducted within the organization setting) little is known about the benefits of permitting pets in the workplace to employees or to the organization. If the buffering effect of pets on stress reactions found in other settings extends to the workplace, pet presence may serve as a low-cost, wellness intervention readily available to many organizations and may enhance organizational satisfaction and perceptions of support.

The importance of research investigating organizational satisfaction, organizational commitment, and organizational support is well documented (Abbott, 2008; Fischer and Sousa-Poza, 2009; Meyer and Allen, 1997; Michael et al., 2009; Ramlall, 2008; Rayton, 2006; Rego et al., 2004; Van Knippenberg and Sleebs, 2006; Way and Macneil, 2006; Siegel, 1990). Research extending the study of perceived organizational support and commitment to their relationship to psychological well-being, revealed affective organizational commitment to be a mediator of the positive relationship between perceived organizational support and well-being (Panaccio and Vandenberghe, 2009). Aube et al. (2007) emphasizes the importance of the relationship between employee perceived support and affective commitment to the organization. They note the need for organizational structures that increase perceived control and, thereby contribute to employees’ affective commitment.

Muse et al. (2008) were also interested in the relationship of organizational support and commitment and the well-being aspects of positive organizational behavior. They report that in supporting employees with work-life benefits, employees taking part in and appreciating these benefits “is part of a positive exchange between the employee and employer. This exchange is positively related to employees’ feelings of perceived organizational support and affective commitment to the organization and reciprocation in the form of higher levels of task and contextual performance behaviors” p. 29. Related to well-being, Fischer and Sousa-Poza (2009) found an important relationship between job satisfaction and subjective health measures, suggesting that employees with higher job satisfaction levels feel healthier and are more satisfied with their health.

While a significant amount of interest and research has focused on these organizational variables, and accumulating evidence supports the health benefits of human-animal interaction, there is a lack of organizational research combining these foci. The current study was conducted with the following purposes in mind.

**Purposes**
The purpose of this study was to investigate employees’ stress and organizational perceptions within an organization setting that permits pets in the workplace. The specific aims were to:

- assess employee base physiological stress levels and perceived stress during the workday;
- assess employee perceptions of job satisfaction, organizational commitment and support;
- compare differences in physiological and perceived stress and organizational perceptions between dog owners who bring their dogs to work, dog owners who choose not to bring their dogs to work, and non-pet owners; and
- compare employee organizational perceptions with established norms.
Since pet attitude was found to be negatively associated with physiological and self-reported stress in an earlier study (Barker et al., 2010), it was included as a moderating variable in the current study.

**Setting**
The study took place at Replacements, Ltd, a service-manufacturing-retail company located in Greensboro, North Carolina, USA, which employs approximately 550 people. For over 15 years, the company has permitted employees to bring their dogs to work. Approximately 20 to 30 dogs are on the company premises each day. The study design and protocol were approved by the investigators’ Institutional Review Board for the Protection of Human Subjects.

**Methods**

**Subjects**
All study participants were full-time employees working the day shift. After obtaining permission from the organization’s leadership team, three groups of employees were recruited for this study: employees eligible to bring their dogs to work under company policies (DOG group); employees who own dogs but do not bring them to work (NODOG group), and employees who do not own pets (NOPET group). As an incentive to complete all aspects of the study, all participants completing the study were entered into a random drawing of two $100 gift cards at study completion.

A target sample size of 30 per group was determined from power analysis using salivary cortisol as the exemplar. A sample size of 30 subjects per group is adequate for detecting between group differences with 80 percent power at alpha = 0.05. Study inclusion criteria were 21 years of age or older, ability to understand and speak English, capability to provide informed consent, and planned presence at work during all study days. Employee participation was strictly voluntary and their decision whether to participate had no impact on their standing within the organization.

**Measures**

**Pet Attitude Scale (PAS).** The Pet Attitude Scale (Templer et al., 1981) was used to assess general attitudes towards animals. The 18 items rated by respondents indicate current agreement with statements related to pets, such as “I would like to have a pet in my home,” using a seven-point Likert-scale ranging from “strongly agree” to “strongly disagree.” Items correlate at least 0.50 with the total Scale (Templer et al., 1981). Cronbach’s alpha coefficient is reported to be 0.93.

**Employee Organizational Perceptions.** The Employee Organizational Perceptions Survey (EOPS), named by the first author for ease of reference for the participants, consisted of three published scales totaling 53 items that measure:

(1) Affective commitment.
(2) Perceived organizational support.
(3) Job satisfaction.

The eight-item Affective Commitment Scale developed by (Allen and Meyer, 1990), assesses employee emotional attachment, identification, and involvement in the organization. Items are evaluated using a seven-point Likert-scale ranging from
strongly agree to strongly disagree. Reported internal consistency is relatively high with Cronbach alphas ranging from 0.77 to 0.88.

The Perceived Organizational Support Scale, developed by Eisenberger et al. (1986) includes 17-items that assess employee’s perception of the organization’s value of the employee and the organization’s action affecting the employee’s well being. Items are evaluated using a seven-point Likert-scale ranging from strongly disagree to strongly agree. Internal consistency is relatively high with Cronbach alphas ranging from 0.74 to 0.95 (Moorman et al., 1998; Wayne et al., 1997).

The Job Satisfaction Survey (Spector, 1985, 1997) and its nine subscales consist of 36 items that measure employee satisfaction in job facets of communication, pay, promotion, supervision, benefits, rewards, operating procedures, co-workers and work itself. A six-point Likert-scale ranging from disagree very much to agree very much is used to evaluate the items. Internal consistency is high with a reported Cronbach alpha of 0.89 (Blau, 1999).

**Stress Visual Analog Scale (VAS).** A VAS was used to collect subjects’ present levels of self-reported stress (SVAS). Stress on the SVAS is defined as one’s response to demanding or unpleasant stimuli or conditions. The scale was 15 cm long and anchored at each end with descriptors of “none” to “the most severe imaginable.” VASs are widely used self report measures with high levels of compliance and acceptable reliability and validity in assessing a wide range of health outcomes; including pain (Ahles et al., 1984), anxiety (Barker et al., 2003), feelings (Aitken, 1969), and mood (Ahearn, 1997). The authors have used similar scales successfully in assessing the effect of animal-assisted therapy on stress in adults (Barker et al., 2010).

**Salivary Cortisol.** Cortisol is well known to increase with stress and reflect hypothalamic-pituitary-adrenal axis reactivity and, thus, is often selected as a measure of physiological stress. A single salivary cortisol sample taken at awakening has been shown to be as good as taking multiple samples throughout the day in providing an indicator of overall cortisol production (Yehuda et al., 2003). The saliva collection system is termed the Filter Assay System for Testing of Saliva (FAST-Saliva). Grade 42 \Whatman filter papers were used for saliva collections and involved placing a pre-labeled filter paper in the mouth, allowing it to become saturated for 20 seconds, and returning it to its pre-labeled glassine mini-bag for storage.

Demographic information was requested at the end of the survey, followed by two questions to gather perceived impressions of productivity related to dog presence, one question worded for those who bring their dog to work and the other for those who do not bring their dog to work or do not have pets but are exposed to dogs in the workplace. A final open ended request for other general comments about how dogs in the workplace affect them was included at the end of the survey.

**Procedures**

Replacements, Ltd, is a fast paced for profit work environment and during discussions with management, the researchers were made aware of limitations on employee time availability for the study. The study design and procedures were developed with these limitations in mind. All company employees were recruited by a written invitation from the researchers, disseminated through company communications. The investigators sent recruitment letters to all employees inviting those interested in participating in the study to attend informational meetings that were conducted on site.
by three of the study investigators one week prior to initiating the study. All of the eligible employees (those working on-site each day during the study) attending the informational meeting agreed to participate with the exception of dog owners who did not want to leave their pets at home on two days as the study required. Informed consent was completed at the meeting and participants were classified according to group.

The study took place over a period of one workweek in the company setting. On Monday of the study week, the investigators met with each of the three groups and collected written demographic information, administered the Pet Attitude and Organizational Perceptions Surveys, and provided written instructions and materials for collecting saliva samples and completing the Stress Visual Analog Scale (VAS). A pager was then assigned to each participant. Instructions were given to participants as to how to use the pager during the study. The pagers were programmed to prompt subjects to complete the VAS at 4 specific times during the study days (between 7:30 and 8:30 a.m., 10:30-11:30 a.m., 1:30-2:30 p.m., 4:00-5:00 p.m.). Participants were instructed on how to collect saliva samples, 30 minutes after awakening, and not to eat, drink, or smoke prior to collecting the specimen.

Subjects in the DOG group were instructed to bring their dog to work on Tuesday and Thursday (study days 1 and 3) and not bring their dog to work on Wednesday and Friday (study days 2 and 4). DOG group participants were instructed to collect saliva samples on each of the 4 study days and to bring the samples to work in the specimen envelopes provided. In order to make comparisons with the DOG group on dog present days, the NODOG and NOPET groups were instructed to collect saliva on Tuesday and Thursday. All three groups were instructed to complete the VAS when paged on their respective study days. Saliva samples and completed VAS were delivered to a researcher on site each study day. At the end of the last study day, a random participant drawing was held for the two gift cards with the names of all subjects completing the study. Although offering gift cards could potentially bias subject participation, this was minimized by not announcing the gift card drawing until employees interested in the study were already present at the initial meeting.

**Analyses.** Salivary cortisol was eluted from the filter paper using measured volumes of Salimetrics assay buffer. The filers were precisely pre-marked and cut at the minimal saturation point to enable a standard saliva-saturation area for elution process. Cortisol concentration in eluted samples was determined using a commercially available high sensitivity ELISA kit (Salimetrics, LLC). The manufacturer reports that the assay accurately measures cortisol in the range of 0.19-49.66nm/l.

Summary statistics (means, standard deviations) were computed for all measures collected. Analysis of variance (ANOVA) was used to test for significant differences between the three groups. The null hypothesis was that the mean response was the same between all three groups. Responses considered separately were: affective commitment, job satisfaction, perceived organizational support, salivary cortisol, and stress. Statistical significance was evaluated at the overall 0.05 level. If statistical significance was found in at least one of the responses (i.e. not all means are equal), Tukey’s pairwise comparison procedure was used to determine which of the three means differed and to estimate to what extent they differed. Analysis of Covariance (ANCOVA) was used to adjust the analysis for appropriate covariates such as Pet
Attitude Scale and pet ownership, and repeated measurements on the Stress VAS in order to examine trends over time within the same group as well as between groups.

Comparisons to norm values for job satisfaction subscale scores and perceived organizational support were made using T-tests, corrected for multiple comparisons, for each scale and subscale score computed from the study sample, overall and by group (DOG, NODOG, and NOPET). Comparisons on Self-Reported Stress between groups (DOG, NODOG and NOPET) as well as comparisons within DOG group (days with and without Dog) were made by combining the data for each group into an average VAS from both collection days: days 1 and 3 for DOG (with dogs at work), days 2 and 4 for the DOG group (when they were without their dog), and days 1 and 3 for the NODOG and NOPET groups. Random effects regression models were applied in order to account for the repeated measurements with the VAS score as the dependent variable. Predictor variables were group, time of day (time) and the interaction between group and time. If the interaction was not significant, it was removed from the model. Marginally significant ($p$-value between 0.05 and 0.10) differences were also noted. All analyses were conducted using SASv9.2 software.

As this was an exploratory study, basic content analysis was used to categorize employees comments regarding dogs in the workplace as positive (improve mood, relieve stress) or negative (disruptive, interfere). Employee responses were transcribed verbatim and two reviewers independently coded each item. If a comment did not conform to a predetermined category, it was coded as other/specify (Denzin and Lincoln, 1994).

**Results**

A total of 76 subjects completed the study, one of who withdrew after the death of her dog, thus analysis was completed on 18 DOG, 38 NODOG and 19 NOPET subjects (total $n = 75$). Approximately two-thirds (63 percent, $n = 46$) of subjects were female. Two individuals did not report gender. Approximately 59 percent were high school educated or had some college and the other 41 percent had at least a bachelor’s degree. Average length of employment (tenure) at the company was approximately ten years in each of the three groups. Participants job functions represented in the study were company president, inventory, customer service, restoration/manufacturing, sales, human resources, clerk, information systems, administration, legal, community relations, purchasing, and development. There were no significant differences between the DOG, NODOG, and NOPET groups in terms of age, education, or tenure.

**Perceived productivity.** Table I shows the results of self-reported impact of dog presence on productivity. For those bringing their dogs to work, about half reported the dog important to their productivity with the remaining half reporting a neutral response. The majority of dog owners not bringing their dogs to work and non-pet owners also reported a neutral response. However, approximately the same number (20%) in both groups reported the dog helpful or harmful to productivity.

**Content analysis.** The content analysis revealed mostly positive comments such as “pets in the workplace can be a great bonus for employee morale […]” “having dogs here are great stress relief.” “Dogs are positive; dogs increase coworker cooperation” and “dogs relieve stress”. Negative comments included “Some dogs are disruptive”, “Allergies problems for some”, “dogs should be well behaved and quiet”. Other
comments noted that sometimes it is inconvenient to bring dogs and if more than one dog is in the home, owners feel guilty bringing only one.

**Attitudes towards pets.** The PAS demonstrated high reliability in this sample (Cronbach’s alpha = 0.93). There was a significant difference between groups on the PAS (p = 0.0009). As might be expected, workers in the NOPET group had significantly lower PAS scores than those in the DOG group (mean = 92.7 vs 108.6, p = 0.0141) or the NODOG group (mean = 92.7 vs 110.1, p = 0.0008). There were no significant differences in PAS between the DOG and NODOG groups.

**Employee organizational perceptions.** Each scale of the Employee Organizational Perceptions Survey demonstrated moderate to high reliability (Cronbach’s alphas for perceived organizational support = 0.82; affective commitment = 0.78; and job satisfaction = 0.94). There were no significant differences between the DOG, NODOG, and NOPET groups on any of these scales.

Reference norms for job satisfaction subscale scores (Spector, 1985) and perceived organizational support (Eisenberger et al., 1986) are shown in Table II. Significant differences were found between the study participants and norm group with study participants scoring higher overall for operating procedures, rewards, benefits, promotion, pay, communication and overall job satisfaction. These trends are reinforced in the NODOG and DOG groups, whereas the NOPET group only showed a significant increase over reference norms in the job satisfaction subscale of pay. There were no significant differences between the study sample and norm group in perceived organizational support or the job satisfaction subscales of coworkers, supervision, or the work itself.

**Self reported stress (VAS).** Although all participants had been identified as “first shift” employees, the individual times of arrival to and departure from work varied by as much as two hours or more during the study. A total of 51 (7 percent) of the 717 completed VAS ratings were omitted from analysis because they were completed outside of work hours.

Mean values for VAS between groups are presented in Figure 1 and Table III. There was a significant interaction between time and group (p = 0.0112). In general, the DOG group had the lowest VAS scores, the NOPET the next highest and the NODOG group...
<table>
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Notes: * p < 0.0001; ** p < 0.0004; *** p < 0.00009
had the highest VAS scores. Whereas there were no significant differences in mean VAS scores throughout the day for the DOG group or the NOPET group, there was a significant increase in VAS over the course of the day for the NODOG group. For the NODOG group, the increase in VAS from baseline to Time 2 was 9.4 (\(p = 0.0234\)), to Time 3 was 13.4 (\(p = 0.0031\)) and to Time 4 was 19.6 (\(p = 0.0002\)). There were no significant differences between groups at baseline or at Time 2, although the NODOG group had a marginally significantly higher VAS by about 12.9 points than the DOG group (\(p = 0.0772\)) at Time 2. At Time 3, the NODOG group had a significantly higher VAS score by 19.8 points than the DOG group (\(p = 0.0120\)) and by the end of the day (Time 4), the NODOG group had a VAS score about 23.2 higher than the DOG group (\(p = 0.0052\)). Although the NOPET group had higher scores, there were no significant differences between the NOPET group and DOG group at any time point. By the end of the day (Time 4), there was a marginally significant difference between the NOPET group and the NODOG group in which the NODOG group was about 13 points higher than the NOPET group (\(p = 0.0703\)).

Mean values for VAS within the DOG group are presented in Figure 2. Although VAS scores were similar at baseline (Time 1), over the course of the day, VAS scores rose throughout the days when the dog was not present as compared to days when the dog was present. There was no significant interaction between time and days with
versus without the dog. However, there was a significant difference between days with and without the dog present. On days without the dog, the VAS score was about 6.8 points higher than on days with the dog ($p = 0.0209$).

**Early morning cortisol.** Comparisons between groups (DOG, NODOG and NOPET) as well as comparisons within DOG group (days with and without the dog) were made by averaging the data for each group from both collection days (days 1 and 3 for DOG Group with dogs at work, days 2 and 4 for the DOG group when they were without their dogs, days 1 and 3 for the NODOG and NOPET groups). Mean values for salivary cortisol for the DOG and NODOG groups were similar. The NOPET group had higher cortisol levels (mean $= 0.276$, SD $= 0.111$, $n = 19$) than that for the DOG (mean $= 0.243$, SD $= 0.110$, $n = 17$) and NODOG (mean $= 0.244$, SD $= 0.135$, $n = 38$) groups, but from one-way analysis of variance, there were no significant differences between groups for these cortisol levels. Further, there was no significant difference in cortisol expressions within the DOG group between their days with their Dog (mean $= 0.243$, SD $= 0.110$) and without their Dogs at work (mean $= 0.242$, sd $= 0.105$).

**Discussion**
Results show that most employees in this study perceive dog presence on productivity neutrally. However a small group (approximately 20 percent) of those without pets in the workplace perceives dog presence as hurting their personal productivity, a percentage about equal to the number who perceives dog presence as beneficial. Although most of the content analysis revealed positive comments regarding dogs in the workplace, some insight into the negative perceptions of dog presence may be provided by the narrative comments of some employees. For instance, animals in the workplace policies regarding dog behavior, cleanliness, and noise are practical considerations organizations could explore in minimizing any negative impact and maximizing positive impact on productivity for those without dogs.

No significant differences were found between the groups on the Perceived Organizational Support Scale. Scores did not differ from the reference norm group for
this scale. It appears that for these groups a perception of organizational support exists. This potentially presents as noted in Muse et al. (2008) a positive organizational behavior setting and well-being can be enhanced. Perhaps members perceived they were valued by the organization through the various programs and structures in place and therefore no significant differences were found to other similar norm referenced groups (Eisenberger et al. 1986; Moorman et al., 1998; Wayne et al., 1997). It is not clear from these results what effect the policy for allowing pets in the workplace has in this area. In reviewing the narrative comments from employees in this study, many noted the appreciation they had for allowing this policy to be in place. A practical application for organizations to consider would therefore be determining if this added incentive could be incorporated into their employee benefit packages.

The combined employee groups in this study scored significantly higher on multiple Job Satisfaction subscales than the reference norm group (Spector, 1985, 1997). This higher job satisfaction may relate to the length of time employees have remained with the company, an average of ten years for each of the groups. While no significant between group differences were found, the non-pet owning group only differed from the norm group on the subscale of pay, rating pay more favorably. The dog owning employees appear to be the driving force behind the more favorable perceptions of job satisfaction, scoring significantly higher on subscales of communication, benefits, rewards, promotion, operating procedures, as well as pay. While having the option to bring one’s dog to work may directly relate to rewards and benefits and perhaps operating procedures, the relationship to communication, promotion, and pay appear less clear. Unique dog-related communication in the workplace may contribute to higher scores in this area. For example, employees without a dog had been observed requesting to take a co-worker’s dog out on a break. These were brief, positive exchanges as the dogs were taken and returned. Mail deliveries are sometimes made by an employee with a dog in the mail cart, likely appealing to dog owners and creating an opportunity for brief exchanges. Top management is also known to walk around employee areas in the company of a dog, possibly creating a more relaxed climate for interaction with dog owners (Barker, 2005).

The higher scores in communication are consistent with published studies in the human-animal interaction literature documenting increased interaction associated with dog presence (Barker, 2005, Hunt et al., 1992). Further investigation of dog presence on communication in the workplace is needed to determine if the effect on quantity and quality of communication enhances or detracts from work performance. The relationship between dog owners and the higher scores on promotion are intriguing. Perhaps the more positive perception of the organization permitting pets by dog owners carries over to other areas, such as promotion and pay. However, pay was also perceived by non-pet owners as more favorable than the reference norm group and may not be related to dog ownership.

Both physiological and self-reported stress was assessed in this study. Salivary cortisol, collected on awakening as an indicator of base (24-hour) stress levels, revealed no significant differences between groups or within the dog group on days with their dogs at work compared with days without the dog at work. There was wide variation in the times that participants awoke each morning (with one reporting awakening at 3.30am) and collected their salivary cortisol, which could also have influenced results. While some studies have reported lower baseline physiological stress in dog owners
compared with non-dog owners based on cardiovascular measures (Allen et al., 2002), we found no supporting evidence in this small sample based on salivary cortisol on awakening. Self-reported stress patterns throughout the work day revealed generally lower stress levels for employees with their dogs present, followed by non-pet owners. Stress patterns for dog owners who did not bring their dogs to work appeared to consistently rise during the day and their stress ratings were significantly higher than the dog present group by the afternoon (Time 3) and at the end of the day (Time 4). Interestingly, self reported stress levels on the days the dog present group left their dogs at home mirrored those of the group not bringing dogs to work and these differences were significant. These results may reflect an increase in concern about pets at home as the length of time away increases, missing pets more as the day progresses, or lessening of a possible stress buffering effect of pets as the length of time away from the pet increases. These results are consistent with published studies supporting a stress buffering effect of pet presence (Allen et al., 2002, Barker et al., 2010, Tudor et al., 2008) that may extend to the workplace.

The limitations of this study include the small convenience sample of volunteers who participated and the inability to blind subjects to the study focus on dogs in the workplace. It is also important to note that not all employees who bring their dogs to work participated in this study, some for the expressed reason that they could not make arrangements to leave their dogs at home. Therefore, there were some pets present in the organization on study days that participants (DOG group) did not bring their dogs to work, maintaining the normal pet present climate of the organization throughout the study and maximizing our ability to assess the effects of the presence of one’s own dog in the DOG group. Based on power analysis, we had hoped to complete 30 subjects per group for a total of 90 subjects. However, 76 employees met all of the study inclusion criteria and were enrolled, with one dropping out due to a dog’s death.

Further studies in large organizations are needed to replicate the findings of this study. This is the first study to explore the effect of pet presence at work on pet-owning employees’ stress and further research with larger sample sizes is needed to replicate these findings and to investigate the impact on other outcomes, such as absenteeism, tardiness, and productivity. Additional research could also investigate the impact of different employee shift assignments on perceptions of support, commitment, satisfaction and stress levels between dog owners and non-dog owners. An interesting area of study would be to compare dog owning employees who telecommute or are home-based with those in traditional workplace setting on such outcomes as stress and organizational perceptions. There are no empirical studies investigating the benefits for pet owners who work from home. While productivity is frequently the focus of discussion regarding telecommuting, it would be interesting to determine if pets influence such productivity. Systematic investigations would be difficult, however with numerous potential covariates such as spouse and/or children in the home, privacy of workspace, and the nature of the work itself. It would also be important to investigate the welfare of the dog in the work setting as well. Does the dog respond positively or negatively to this setting and the myriad of environmental stimuli it is exposed to during the work period? Future research combing more in-depth qualitative analysis with the quantitative analysis could provide additional understanding of questions to be asked and context of results.
References


**Further reading**


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