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The bond between pet dogs and their guardians may influence guardian reports about their dogs' health. By uncovering this bond we can obtain more accurate reports of pet health. A literature review revealed that quality of life (QL) measures in pet dogs was lacking, compared to human measures. Similarly, the human-animal bond (HA bond) literature review revealed that a more complete assessment might be helpful.

Dogs overall well-being is comprised of many facets. Psychological variables like emotion, play, and happiness and satisfaction have all been considered important QL factors. Borrowing from human QL theory, we assessed four broad dimensions of QL in pet dogs: physical, psychological, social, and environmental. To develop an assessment of the bond that develops between pets and their guardians we examined attachment in pet dog and human literatures. HA bond scales are available that focus on commitment to a pet dog and on responsibility for and activities shared with the dog (e.g., traveling, sleeping). Again, with the help of the human literature we conceptualized the HA bond as including six areas: companionship, social facilitation, physical benefits, not regretting having the pet, pet attachment, and commitment to pet.

STUDY 1
Study 1 examined the influence of the HA bond between guardians and pet dogs on guardian reports of pet dogs' quality of life (QL). The QL and HA bond surveys were administered online using a large Midwestern company's intranet. Data were collected from 500 dog owners, who were given research points by an intranet research service in exchange for participation. The four broad QL dimensions include several subscales. The physical dimension includes: general sickness, immobility, and external irritation. The psychological dimension has three subscales: trainability, separation distress, and anxiety. The social dimension has two subscales: the owner focused on the dogs and the sociable nature of the dog. The environmental dimension has two subscales: basic needs and the dog has a sleeping area. There are six subscales in the HA bond survey: emotional benefits, companionship, no regrets about owning the pet, dog's attachment to the owner, the dog facilitates social encounters, and physical benefits. Guardians rated their agreement with each item. One item queried dogs' general health with responses ranging from poor to excellent.

We examined whether the items would form reliable subscales. Each survey was subjected to a factor analysis. The QL scale had 10 factors matching those postulated from our literature review. The physical dimension has three subscales: general sickness (e.g., my dog acts sick; 8 items; Cronbach's alpha = .91), immobility (e.g., my dog has difficulty walking; 6 items; alpha = .93), and external irritation (e.g., my dog has patches of fur missing; 2 items; r = .66). The psychological dimension has three subscales: trainability (e.g., it is easy to train my dog; 3 items; alpha = .70), separation distress (e.g., my dog whines when I leave; 3 items; alpha = .66), and anxiety (e.g., my dog is startled easily; 3 items; alpha = .69). The social dimension has two subscales: dog focus (e.g., I groom my dog often; 4 items; alpha = .82) and sociability (e.g., my dog shares his or her toys with other animals; 2 items; r = .42). The environment scale has two subscales: basic needs (e.g., my dog goes outside when he or she needs to; 2 items; r = .53) and sleep area (e.g., my dog has his or her own place to sleep; 2 items; r = .66). A similar factor analysis was computed for all HA bond items, resulting in 6 factors. As anticipated by the literature review, the factors were emotional benefits (e.g., my dog helps reduce my stress; 7 items; alpha = .94), companionship (e.g., I think of my dog as a close friend; 5 items; alpha = .91), no regrets (e.g., taking care of my dog is a burden; 4 items; alpha = .89), dog's attachment (e.g., my dog will come and sit next to me; 5 items; alpha = .89), social facilitation (e.g., owning a dog helps me meet people; 3 items; alpha = .78), and physical benefits (e.g., walking my dog gives me the opportunity to exercise; 3 items; alpha = .82).

We also examined construct validity of the subscales. We correlated the QL and HA bond subscales with ratings of dogs' general health. Better dog health was related to less general sickness, less immobility, and less external irritation, all physical subscales of QL. One psychological scale was related to general health. Healthier dogs were rated as being more trainable. The social dimension was related to general health ratings. Healthier dogs had owners who were more focused on them and were rated as more sociable. Better dog health was also related to aspects of the HA bond. Healthier dogs had owners who reported obtaining more companionship and social facilitation from their pet dogs, reported having fewer regrets about having dogs, and reported more emotional and physical benefits from having pet dogs. Healthier dogs also had owners who reported greater dog attachment to them.

These findings suggest that the QL survey and the HA bond survey are tapping differently into ratings of pet dogs' general health. Because the bond between a human and dog are related to pet health, they should be examined more closely to obtain more accurate dog health ratings.

STUDY 2
Study 2 examined validity by comparing the assessments obtained on a general sample of dogs to those identified as having a medical condition. Three hundred guardians who indicated that their pet dog was being medicated or had a prescription diet for a medical condition were eligible to participate. The same Study 1 surveys were administered online.

We examined reliability. The ten QL subscales include general sickness ($\alpha = .85$), immobility ($\alpha = .92$), external irritation ($r = .40$), trainability ($r = .63$; a low reliability), separation distress ($r = .49$; the three-item reliability was so low that only two items were retained, anxiety ($r = .63$; a low reliability), dog focus ($r = .74$), sociability ($r = .53$), and basic needs ($r = .27$; a low correlation), and sleep area ($r = .62$). The lower reliability for separation distress may be due to having fewer participants or partly to a restriction in the range of separation distress exhibited by ill dogs. Similarly, low reliabilities of anxiety and basic needs could be due to lack of...
variability in respondents. The six subscales of the HA bond are emotional benefits ($\alpha = .92$), companionship ($\alpha = .89$), no regrets ($\alpha = .90$), dog’s attachment ($\alpha = .83$), social facilitation ($\alpha = .71$), and physical benefits ($\alpha = .76$). All HA bond reliabilities were acceptable and comparable to past research using these scales.

We examined the influence of the HA bond and QL on health ratings. Regression analysis revealed that the HA bond predict general health (accounting for 8% of the variance). Specifically, greater dogs’ attachment to the guardian was related to better health ratings. The next regression added QL, which enhanced the prediction of general health (accounting for 36% additional variance). In this ill-pet sample, worse health was related to more general sickness, more mobility problems, and less trainability. While the H-A bond influences health ratings, as anticipated, both psychological and physical QL dimensions add further to our understanding of pet dogs’ overall health.

We compared the general dog sample (Study 1) with the ill dog sample (Study 2) on the QL and HA bond subscales. As expected, ill dogs were rated higher on general sickness, immobility, and external irritation, and were rated as less trainable. The general sample of pet dogs differed from the sample of ill pet dogs in both physical and psychological QL dimensions. The HA bond of those with an ill dog was strong in many respects. Guardians of ill pet dogs reported reaping more emotional benefits and companionship from their dogs, as well as reporting that their dogs were more likely to facilitate social encounters. However, those with ill pet dogs also rated themselves as having more regrets about having the dogs.

DISCUSSION

Together, this research suggests that the newly developed QL and HA bond surveys are reliable. Further, the HA bond is related to guardians’ health ratings of their ill pet dogs, and the QL scale predicts the general health of ill pet dogs above and beyond that of the HA bond. Lastly, these surveys discriminate between generally healthy and ill pet dogs. When controlling for the effects of the HA bond on QL ratings, we can more clearly investigate the unique effects of QL on pet health ratings and how factors, like diet, may be related to pet health.

This research demonstrates the multiple layers of both QL in pet dogs and in the HA bond. The bond between a pet dog and guardian can influence guardians’ reports about dog health. Moreover, dog health has more than just a physical aspect – the psychological and social factors related to overall pet dog health are important as well. These aspects of QL provide other areas to consider when treating physically ill pet dogs. Lastly, when considering ill pet dogs, veterinarians and their staff should consider all the facets of the bond between pet dogs and their guardians, and how these facets may influence health ratings.

REFERENCES