PONTIFÍCIA UNIVERSIDADE CATÓLICA DO PARANÁ
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LUCIANA DO AMARAL GURGEL GALEB

DIFERENTES FORMAS DE AVALIAR A REABILITAÇÃO E SOCIABILIZAÇÃO DE CÃES DE ABRIGO PARA ADOÇÃO

(Different Types to Evaluation of Rehabilitation and Socialization of Shelter Dogs for Adoption)

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Tese apresentada ao Programa de Pós-Graduação em Ciência Animal, área de concentração Saúde, Tecnologia e Produção Animal, da Escola de Ciências da Vida da Pontifícia Universidade Católica do Paraná, para obtenção do título de Doutor em Saúde, Tecnologia e Produção Animal Integrada.

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“Eu asseguro que, se vocês tiverem fé do tamanho de um grão de mostarda, nada será impossível para vocês.”

Mateus 17:20

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Sempre achei esta a parte mais difícil da tese para escrever, talvez porque a vida não se coloca em análise de regressão e não é pelo valor *p* que descobrimos a significância das pessoas na nossa trajetória.

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FORMATO DA TESE

A presente tese é composta por capítulos. O capítulo 1 apresenta uma introdução geral com a contextualização do tema e os objetivos do estudo. O capítulo 2 trata-se de artigo científico completo, intitulado: "*Shelter quality: Welfare assessment protocol for shelter dogs in Brazil*", formatado nas normas da revista *Animal Welfare – A2 (Q1)*. O capítulo 3 contempla o artigo científico completo, intitulado: "*Shelter dog's temperament and its influence on learning of basic commands and adoption rate*", formatado nas normas da revista *Applied Animal Behaviour Science – A2 (Q1)*.

RESUMO GERAL

Introdução: No ano de 2014 a Organização Mundial da Saúde estimou, que no Brasil, 30 milhões de animais se encontram abandonados nas ruas. Dentro deste contexto, alguns abrigos procuram melhorar as chances de adoção dos animais sob seus cuidados por meio da reabilitação comportamental, uma vez que os problemas comportamentais estão entre as principais causas de abandono de animais, e, portanto, a prevalência destes problemas em cães de abrigo tende a ser maior quando comparada à população de cães domiciliados. **Objetivos:** O objetivo deste estudo foi avaliar o bem-estar de cães de abrigo da cidade de Curitiba e região metropolitana e testar um modelo para promover a reabilitação, sociabilização e treinamento de comandos de obediência básicos com intuito de se aumentar a taxa de adoção de cães alojados em abrigo. **Metodologia:** Nove abrigos para cães foram visitados na cidade de Curitiba-PR e região metropolitana e o protocolo *Shelter Quality*® (SQ) aplicado para avaliar o bem-estar dos cães utilizando-se de parâmetros bem definidos, divididos em quatro princípios e doze critérios de avaliação. O protocolo foi aplicado por um único avaliador, treinado por um dos autores de SQ. Além disso, o estudo contou também com a adaptação de alguns indicadores do protocolo e sugestão de novas medidas baseadas na realidade brasileira. Para se testar um modelo de reabilitação e sociabilização, trinta cães que moravam em uma unidade universitária foram selecionados. Cada cão foi treinado usando o método de condicionamento operante com reforço positivo. Cada sessão ocorreu em três dias diferentes com duração mínima de 2 horas. Foram aplicados sete (07) exercícios básicos de comandos: “Sentar”, “Deitar”, “Ficar”, “Pata dar”, “Rolar”, “Rastejar” e “Andar na coleira”. **Resultados:** O protocolo SQ, mostrou-se ser aplicável à condição de abrigos brasileiros para diagnóstico de bem-estar animal. Os resultados encontrados sugerem que o treinamento de cães de abrigo pode aumentar a taxa de adoção, especialmente quando o cão aprende aos comandos considerados com maior complexidade de forma mais rápida. Crê-se que este vínculo pode estar relacionado ao fato de que o treinamento cria mais oportunidades para interações positivas com seres humanos, além de tornar o ambiente mais previsível e controlável para o cão, implicando em situações menos estressantes e tornando-o mais atraente para potenciais adotantes. **Considerações finais:** O presente estudo trouxe um avanço nas diferentes formas de avaliar a reabilitação e a sociabilização dos cães de abrigo no Brasil, mostrando a importância de avaliar o bem-estar animal e efetivar programas de treinamentos de comandos básicos para aumentar a taxa de adoção.

Palavras-chave: Bem-estar; Comportamento animal; Protocolo; *Shelter Quality*®; Temperamento; Treinamento.

ABSTRACT

Introduction: In the year 2014 the World Health Organization has estimated that 30 million animals are found abandoned on the streets in Brazil. Within this context, some shelters improve the chances of animals adopting by behavioral rehabilitation implementing. Behavioral problems are the most common cause of animal abandonment, and thus, the prevalence of these conditions in dogs of shelter tends to be larger when compared to domiciled dog population. **Objectives:** The objective of this study was to evaluate the welfare of shelter dogs in the city of Curitiba and the metropolitan region and to test a model to promote the rehabilitation, socialization and training of basic obedience commands in shelter dogs in order to increase the adoption rate. **Methodology:** To diagnose the welfare of shelter dogs, nine dog shelters were visited in the city of Curitiba-PR and metropolitan region. The *Shelter Quality*® (SQ) protocol was applied to assess dog welfare using well-defined parameters, divided into four principles and twelve evaluation criteria. The protocol was applied by a single evaluator, trained by one of the authors of SQ. To test a rehabilitation and socialization model, thirty dogs that lived in a university unit were selected. Each dog was trained using the positive reinforced operant conditioning method. Each session took place on three different days of the week, with a minimum duration of 2 hours. Seven basic command exercises were applied: “Sit”, “Lie-down”, “Stay”, “Paw-give”, “Roll”, “Crawl” and “Walk on a leash”. **Results:** The study also performed an adaptation of protocol indicators with suggestion of new measures based on the Brazilian reality. The rehabilitation model suggests that shelter dogs training may increase the adoption rate, especially when the dog can learn the toughest commands quickly. This link may be related to the fact that training creates more opportunities for positive interactions with humans, as well as making the environment more predictable and manageable for the dog, leading to less stressful situations and making it more attractive to potential adopters. **Final considerations:** The present study has advanced the different ways to evaluate the rehabilitation and socialization of shelter dogs in Brazil, showing the importance of evaluating animal welfare and implementing basic command training programs to increase the adoption rate.

Keywords: Animal behavior; Protocol; Shelter Quality®; Temperament; Training; Welfare.

CAPÍTULO 1

INTRODUÇÃO E CONTEXTUALIZAÇÃO

1.1 Controle populacional de cães de rua

Estimativa realizada pela *World Veterinary Association* (Associação Mundial de Médicos Veterinários) em 2016 sobre a quantidade de cães abandonados no mundo, mostra que mais de 200 milhões de cães e gatos encontram-se abandonados nas ruas, susceptíveis ao aumento de animais devido as proles e situações relacionados ao abandono (WVA, 2016). No Brasil, a Organização Mundial da Saúde, no ano de 2014 estimou que 30 milhões de animais encontravam-se nas ruas em estado de abandono, e que desses, 20 milhões eram cães e 10 milhões eram gatos.

Esses animais abandonados encontram-se muitas vezes em situações de risco, pois ficam expostos a maus tratos, atropelamentos, agentes biológicos causadores de diversas doenças, como também sentem frio, calor, fome, sede e medo. Vários países têm enfrentado dificuldades em realizar o controle populacional de cães. No Brasil, o tema também se destaca por representar problema de saúde pública e bem-estar animal (Molento et al., 2007). Além disso, eles podem representar potencial risco para as pessoas e outros animais (pois podem ocasionar mordeduras e arranhaduras); ao meio ambiente (através da depredação do patrimônio público e privado e predação da fauna local); a saúde pública (zoonoses) e a economia (referentes aos custos com estratégias de contenção e controle populacional) (Alves et al., 2013).

Segundo o Artigo 32 da Lei Federal nº 9.605 (BRASIL, 1998) e do Decreto-Lei nº 24.645 (BRASIL, 1934), o abandono animal é considerado um crime de maus tratos, no entanto esta ação ainda é bastante realizada no Brasil. Os animais geralmente são abandonados em diversos locais, como parques e praças, universidades e até mesmo dentro de residências e condomínios fechados.

Em Curitiba o número de abandonos também não deixa de ser preocupante, pois no último levantamento realizado a quase três anos pela Prefeitura Municipal, mostrou que cerca de 213 mil cães viviam nas ruas,

incluindo também aqueles semi-domiciliados (os quais possuem tutores, mas ficam soltos durante o dia nas ruas) (ANDA, 2014).

Historicamente, o controle populacional de cães no Brasil, foi baseado em captura e extermínio em massa (Molento, 2014). Nos primórdios destes programas de controle, o extermínio de animais era feito por concussão ou afogamento, até que técnicas pouco mais humanitárias, como a câmara de descompressão, foram introduzidas. Porém, a OMS reconheceu que técnicas de captura e extermínio não são efetivas para esse controle populacional (OMS, 2005), e autoridades municipais têm migrado para estratégias mais efetivas e humanitárias, como esterilização e manejo sanitário de animais de rua (Molento, 2004). Além disso, no Brasil, a lei federal nº 9605/98 classifica como crime todo e qualquer abuso, maus-tratos, mutilação ou inflação de morte a qualquer animal (Brasil, 1998), incluindo-se o propósito de controle populacional.

Os métodos aceitáveis para o controle da população canina se baseiam em restrição de movimentos, programas educativos para a guarda responsável, controle do habitat, regulação da reprodução através de castração e parcerias com abrigos temporários e permanentes (FAO, 2011). Desta forma, atualmente, o manejo populacional de cães é realizado priorizando-se aspectos humanitários e que são socialmente aceitos (Garcia et al., 2009).

Dentro deste contexto, os abrigos de cães possuem um papel importante, pois realizam ações de recolhimento de animais doentes, mutilados, atropelados e/ou violentados, levando-os para tratamento, castração e posterior encaminhamento para adoção. Apesar disso, os cães que são acolhidos por abrigos ou programas de manejo populacional não estão isentos de passar por situações que põem à prova o seu bem-estar (Alves et al., 2013).

1.2 Abrigos de cães

Milhares de cães errantes, abandonados e que sofreram maus-tratos são cuidados por Organizações Não Governamentais (ONGs) e protetores independentes no Brasil (Pelanda, 2019). Em um levantamento realizado pelo Instituto Pet Brasil, existem mais de 170 mil animais que estão sob os cuidados de 370 ONGs e grupos de proteção animal em todo território brasileiro. Do total, 169 entidades encontram-se no Sudeste, tutelando mais de 78 mil

animais, seguido pelas regiões sul e nordeste com mais de 30 mil animais em cada. As regiões norte e centro-oeste abrigam aproximadamente 20 mil e 12 mil animais, respectivamente (IPB, 2019).

A grande maioria desses animais é formada por cães (96%) e apenas uma minoria, por gatos (4%). Com relação aos abrigos, 48% deles são considerados de porte médio (abrigam de 101 a 500 animais), sendo responsáveis por tutelar mais de 89 mil animais, e por essa razão, são responsáveis por mais de 52% da população de pets disponíveis para adoção. As instituições consideradas de pequeno porte (abrigam de um a 100 animais) e de grande porte (abrigam acima de 500 animais), e representam respectivamente 33 e 19% do total dessas instituições (IPB, 2019).

Todo e qualquer recinto que abrigue animais deve ter programas para o controle de doenças infecciosas, pois animais abrigados correm maior risco de contrair e transmitir doenças. Principalmente porque animais recém introduzidos ou já residentes, muitas vezes, encontram-se feridos, parasitados ou de modo geral imunocomprometidos disseminando patógenos para outros animais saudáveis. Além disso, a própria limitação do espaço disponível em situações de abrigo, funciona como fator estressante que também pode agir como imunodepressor dos animais (Cerqueira, 2012).

A facilidade na transmissão de doenças, aliada às características intrínsecas do abrigo (superlotação, restrição de espaço e estresse) são desencadeadas principalmente pela ausência de protocolos sanitários. Quando medidas sanitárias são colocadas em prática, como o isolamento dos animais infectados, a eliminação de fômites, higienização adequada dos ambientes e pronta assistência médica, é possível se ter uma melhora das condições sanitárias de abrigos (Bannasch e Foley, 2005). Muitas destas doenças são tidas como zoonoses, e por este motivo a OMS vem liderando esforços no controle populacional de animais de rua e de abrigos desde a década de 60 (OMS, 2005).

Aliados ao manejo sanitário, alguns abrigos procuram melhorar as chances de adoção dos animais sob seus cuidados por meio da reabilitação comportamental, uma vez que os problemas comportamentais estão entre as principais causas de abandono de animais, e portanto, a prevalência destes

problemas em cães de abrigo tende a ser maior quando comparada à população de cães domiciliados (Miklósi, 2015).

Adicionalmente, o alojamento em abrigos por longos períodos, com pouco contato social com outros cães ou seres humanos, pode diminuir o grau de bem-estar destes animais e torná-los mais propensos a problemas comportamentais (Wells et al., 2002).

O uso de técnicas de adestramento e modificações comportamentais para reverter ou controlar problemas de conduta tem sido adotadas por diversos abrigos, com reflexos positivos nas chances de adoção (Orihel et al., 2005).

É fundamental que o cão seja sociabilizado no contexto humano, bem como com outros cães, para que essas interações ocorram de forma coerente e gradual para ser aceita pelos humanos e pelos cães. Um cão sociabilizado passa a ter relação mais harmônica com sua família adotante, o que traz benefícios sociais às pessoas e ao próprio cão (Seksel, 1997). Além disso, o treinamento de comandos básicos de obediência favorece a comunicação e convivência com o cão em casa, bem como parece intrinsicamente favorecer a própria adoção.

1.3 Sociabilização e técnicas de treinamentos de comandos em cães de abrigo

Os cães apresentam uma fase de desenvolvimento que vai de oito a 16 semanas de vida, que é considerada um ponto crítico para o comportamento social, chamada de fase de socialização primária. Esse período de socialização equivale ao processo de desenvolvimento sensitivo, o qual o indivíduo se encontra mais receptível a estímulos sociais. Assim, o cão aprende com muito mais facilidade e de uma forma mais intensa e duradoura o que lhe é seguro ou não (Beaver, 2001). No aprendizado dentro do processo de socialização, o cão não reconhece mais pessoas ou atividades como ameaça, ele passa a reconhecê-las como parte da sua vida (Overall e Love, 2001). Deste modo, é durante essa fase de socialização primária (8-16 semanas) que se faz importante apresentar ao cão todos os fatores que farão parte de sua vida.

Para garantir que a reabilitação e sociabilização inicial tenha um impacto positivo nos inícios de vida do animal, alguns fatores de convivência deverão ser controlados. Por exemplo, devem ser apresentados ao cão pessoas de

diferentes idades, diferentes etnias, brinquedos ou objetos, animais dóceis da mesma ou de outra espécie (Seksel, 1997).

Assim que termina o período de socialização primária torna-se mais difícil habituar o animal a outras espécies e diferentes pessoas (Overall, 1997), no entanto, técnicas de dessensibilização sistemática, contra-condicionamento e associações positivas, podem ser empregadas com finalidade de ressocialização destes animais.

A dessensibilização sistemática consiste em colocar o animal diante de níveis baixos de estímulos, de forma gradativa, de modo que não provoque uma reação indesejada (agressão). A intensidade é gradual e sistematicamente aumentada à medida que o animal mostra resposta neutra a tais níveis baixos, e assim, a intensidade continua sendo aumentada até que o cão se apresente neutro à intensidade total do estímulo (Horwitz e Neilson, 2018). Por exemplo, cães que tiveram infância pobre na fase de impressão e apresentem medo de baldes e vassouras, através da dessensibilização pode-se reduzir o medo do cão em relação aos objetos.

A dessensibilização sistemática e o reforço positivo podem reduzir a ansiedade pois enfraquecem a associação entre o estímulo ameaçador e as reações emocionais negativas (Orihel e Fraser, 2008). Em conjunto, o contra-condicionamento (CC), permite aos animais aprenderem a se comportar de modo apropriado em relação aos estímulos que antes causavam agressão ou outros comportamentos problemáticos, os quais devem ser exibidos em gradação sem evocar a resposta indesejada (Horwitz e Neilson, 2018).

O CC, também chamado de substituição de resposta, consiste em eliminar uma resposta condicionada (agressão) a determinado estímulo condicionando outra resposta que seja incompatível com a original. O que se deseja é que a resposta seja comportamental e fisiologicamente diferente da resposta anterior. Portanto, expressões faciais, posturas corporais, frequência respiratória são componentes de total importância na resposta (Horwitz e Neilson, 2018). O CC pode permitir aos cães melhor controle em lidar com a situação provocadora da agressão, fornecendo alternativas comportamentais (Orihel e Fraser, 2008).

A ressocialização tem por objetivo habituar o cão a diferentes indivíduos, da mesma ou de outra espécie, após o período crítico de desenvolvimento da

sociabilização. As técnicas utilizadas são muito semelhantes às utilizadas na socialização de um filhote, porém ajustadas de acordo com a nova capacidade de aprendizado e comportamento do adulto (Beaver, 2001).

Cães adultos demoram muito mais tempo para se habituar a estímulos novos do que cães filhotes (Beaver, 2001), por isso os treinos levam mais tempo. Além disso, após os seis meses de idade os cães demonstram mais medo de situações inusitadas, bem como de indivíduos desconhecidos (Overall, 1997), portanto as apresentações devem ser sempre associadas a recursos positivos. Quando se aplica tais aprendizagens sociais, também se melhora a velocidade do treinamento em cães tornando-os mais adotáveis (Marston e Bennett, 2003; De Meester et al., 2008).

Além disso, no que tange o bem-estar animal (BEA), a profissão médico veterinária tem passado por uma mudança significativa nos últimos anos, visando buscar e atender à crescente valorização desse conceito (Molento, 2003).

1.4 Bem-estar de cães

Não há um consenso entre os autores sobre a definição do BEA. A maioria das definições engloba conceitos de bem-estar físico, mental e natural, pois o bem-estar também se refere à qualidade de vida do animal, o que envolve inúmeros elementos como saúde e felicidade, harmonia com o meio ambiente e capacidade de adaptação sem sofrimento, trazendo um grande desafio para a ciência no que concerne à sua contextualização científica (Duncan, 2005; Calderón Maldonado e Garcia, 2015).

Por definição, segundo Hughes (1982) o BEA constitui um estado em que o animal está em completa harmonia com a natureza e/ou com o ambiente onde vive. Adicionalmente a isso, Hurnik (1992) inseriu ideia de que o bem-estar significa uma alta qualidade de vida do animal, afirmando que só se tem um ótimo funcionamento biológico do organismo em completa harmonia com ambiente.

No entanto, Broom (2011) acrescenta que esta definição, embora seja amplamente utilizada e represente uma das mais importantes formas de conceituar o tema, tem uma aplicação científica um pouco limitada, pois não permite que, com facilidade, possa ser mensurado este estado de harmonia.

Segundo a Organização Mundial da Saúde Animal (OIE), o termo descreve a maneira como os indivíduos enfrentam o meio ambiente e se adaptam a este, como a sanidade, suas percepções, seu estado anímico e outros efeitos positivos ou negativos que influenciam os mecanismos físicos e psíquicos do animal (OIE, 2010).

Ademais, a ciência do BEA é uma área interdisciplinar do conhecimento, a qual possui como objetivo a identificação e o reconhecimento das necessidades básicas e fisiológicas de um animal, mensurando assim o grau de aplicabilidade em termos de necessidades físicas, fisiológicas, comportamentais, ambientais, sociais e psicológicas de cada indivíduo (Keeling et al., 2011).

Nessa mensuração, pode-se incluir tanto a saúde física dos animais como também sua saúde comportamental e mental, sua adaptação ao meio ambiente e suas interações sociais com outros indivíduos da mesma ou de diferentes espécies (Keeling et al., 2011).

Para Mellor et al. (2009), BEA é um estado próprio do animal em um determinado momento, representado pela somatória de todas as experiências emocionais ou afetivas vivenciadas por ele a partir de fatores intrínsecos e extrínsecos aos quais ele está exposto.

Nesse sentido, o estudo do BEA pode ser aplicado para avaliar e melhorar a qualidade de vida de um indivíduo, ou de um grupo das mais diferentes espécies e nas mais variadas situações, auxiliando na elaboração de normas e protocolos que visem melhores práticas na utilização de animais.

Ao associar o termo saúde com o BEA é de suma importância entender que o mesmo se refere a um estado de equilíbrio dos sistemas corporais que auxiliam no combate de patógenos, na recuperação de danos teciduais e/ou dos transtornos fisiológicos, portanto, a saúde pode ser classificada como um estado positivo do animal em relação às tentativas de combater uma afecção existente (Broom e Molento, 2004; Broom, 2011).

Dessa maneira, a saúde então pode ser adicionada ao BEA, sendo ambas qualificadas em uma escala que varia entre o muito bom e o muito ruim (Broom e Molento, 2004; Broom, 2011). Porém, vale ressaltar que a saúde, entretanto, não é sinônimo de bem-estar, mas sim um de seus componentes,

sendo que o estado caracterizado como saudável é uma condição essencial para um bom BEA.

Para que o bem-estar possa ser comparado em situações diversas ou avaliado em uma situação específica, deve ser medido de forma objetiva. A avaliação do bem-estar deve ser realizada de forma completamente separada de considerações éticas. Uma vez terminada a avaliação, esta provê as informações necessárias para que decisões éticas possam ser tomadas sobre uma dada situação.

Consagradamente, as Cinco Liberdades foram umas das primeiras estratégias a serem criadas para avaliar o grau de bem-estar dos animais de produção (Brambell Committee, 1965; FAWC, 2009), a qual era feita de forma qualitativa a inspeção e observação dos aspectos físicos, mentais e naturais dos animais.

De acordo com tal estratégia o animal deveria estar livre de dor, lesão e doenças; livre de desconforto (estresse ambiental); livre de fome, sede e desnutrição; livre de medo e angústia (estresse mental); e livre para expressar seu comportamento natural (FAWC, 2009).

A partir disso, a utilização e implementação de protocolos baseados nesse conceito das Cinco Liberdades tem auxiliado e criado programas de prevenção a doenças e desconforto, diagnóstico e tratamento rápido; prover ambientes apropriados que incluam abrigo e áreas confortáveis de descanso; disponibilizar água fresca e dieta que garanta a saúde e o vigor; assegurar condições e tratamentos que evitem o sofrimento mental, provendo espaço suficiente e instalações apropriadas; bem como prover a companhia de animais da própria espécie (FAWC, 2009).

A presença de cães nas ruas e a superpopulação canina é uma realidade e é considerada uma questão de relevância tanto no âmbito de BEA como no âmbito de saúde pública (Dalla Villa et al., 2010). Várias estratégias têm sido utilizadas na tentativa de se minimizar/acabar com a presença de cães errantes nas ruas, mas o problema persiste e cada vez tem ampliado seu tamanho.

A discussão acerca dos tratamentos dado a tais animais e as estratégias de manejo de suas populações é crescente em ambiente acadêmico, em órgãos públicos e na sociedade em geral (OIE, 2010; Garcia et al., 2012).

JUSTIFICATIVA E HIPOTESES

A justificativa deste projeto foi baseada na busca de uma solução para um problema de aumento de população de cães abandonados na Fazenda Experimental Gralha Azul (FEGA), fazenda escola da Pontifícia Universidade Católica do Paraná (PUCPR), localizada no município de Fazenda Rio Grande, Paraná. Ao longo de vários anos, cães foram sendo abandonados ao redor da FEGA e em outros campus da PUCPR.

A partir de 2016, o número de cães foi aumentando, a ponto de ter mais de 50 cães alojados na FEGA e consequentemente, criaram-se vários problemas, em relação a acomodação e manutenção de todos esses animais. Portanto a ideia inicial foi montar um projeto multidisciplinar para destinarmos a locais que permitissem uma condição de vida melhor a estes animais.

Após várias reuniões e discussões, resolveu-se montar o presente projeto que objetivou a promoção da reabilitação, sociabilização e a adoção dos cães alojados na FEGA e, concomitantemente, expor os estudantes dos cursos da Escola de Ciências da Vida (ECV) a participarem e terem vivências nas práticas da Medicina de Abrigos.

As hipóteses levantadas neste estudo foram:

- **a.** Com a realização dos treinamentos para adestramento e socialização desses cães poderá facilitar a adoção dos mesmos;
- **b.** Eventos de adoção de cães para a comunidade poderão ser uma boa estratégia para facilitar a adoção;
- **c.** Aplicar protocolos para monitorar o bem-estar de abrigos de cães poderá melhorar a qualidade de vida destes animais.

OBJETIVOS GERAIS

O presente estudo teve como objetivo avaliar o bem-estar de cães de abrigo da cidade de Curitiba e região metropolitana, bem como testar um modelo para promover a reabilitação, sociabilização e treinamento de comandos de obediência básicos com intuito de se aumentar a taxa de adoção de cães que vivem em ambientes coletivos.

OBJETIVOS ESPECÍFICOS

a. Identificar e obter a permissão para realizar as avaliações de bem-estar dos animais que vivem em abrigos;

b. Realizar a avaliação de bem-estar de cães em abrigos através da aplicação do protocolo *Shelther Quality*® em nove abrigos localizados em Curitiba e região metropolitana;

c. Promover a reabilitação sanitária e comportamental (identificar temperamentos e realizar adestramentos) dos cães abandonados na FEGA/PUCPR, localizada no município de Fazenda Rio Grande;

d. Elaborar estratégias e realizar ações que promovam a sociabilização dos cães abandonados na FEGA/PUCPR, localizada no município de Fazenda Rio Grande;

e. Acompanhar a adaptação e bem-estar dos cães adotados.

CAPÍTULO 2

(Artigo científico submetido a para publicação no periódico Animal Welfare)

Shelter quality: Welfare assessment protocol for dog shelter in Brazil

First shelter dog´s welfare protocol applied in Brazil

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ABSTRACT

We tested Shelter-Quality Protocol (SQ) and critically reviewed its applicability for Brazilian dog shelters. Nine long-term dog shelters were visited in Curitiba-PR and its metropolitan area, in the south of Brazil. Welfare indicators were scored at three different levels: shelter (housing type, exercise frequency, mortality and morbidity rates, food management); at pen (space allowance, pen hygiene, bedding, sharp edges presence, water supply, thermal comfort and barking) and at individual level (body condition, dog cleanliness, skin condition, lameness, respiratory disorders, pain evidence, diarrhea, abnormal behaviors and human-animal relationship). Data were analyzed in a qualitative manner. Brazilian's shelters had a mean (±SD) of 66.27 (±27.63) allocated dogs receiving only dry pellets. Meal frequencies vary between once a day (44.4%), twice (33.3%) and *ad libitum* (22.2%). Water was available in 98.5% of pens and were clean (89.5%). Most of the shelters grouped the dogs by size. Animals were kept indoors (41.0%), or entirely outdoors with only close movable shelters (41.3%), from which 78.5% had materials that could hurt the animals. None of the dogs were panting, crowding or with stereotypy behavior. No cough, swelling and ectoparasites were observed. Animals were in adequate body-score condition and clean no lameness was observed. In human-animal relationship test, 15.3% of animals showed fearful and aggressive reactions. SQ was feasible and provide relevant information about Brazilian's dog shelters welfare. However, it was considered necessary to include and adapt additional indicators to gather other relevant aspects of dog´s welfare, such as health management, environmental enrichment, socialization of dogs, people involved in the chain, rate of adoption and turn-over dogs.

Keywords: Shelter dog, Welfare, Behaviour, Shelter quality, Brazil.

INTRODUCTION

The growth of stray dog population is a major problem in urban centers, especially in developing countries. World Organization for Animal Health (OIE 2018) estimates that there are approximately 200 million stray dogs in the world and 30 million only in Brazil. Stray dogs act as social and economic problem, related to the costs of population control strategies and zoonotic risk (Davis 2011; Alves et al 2013).

Reallocation of the stray dogs to shelters has been one of the Brazilian government strategies for free-rooming dog population, beside responsible guard education, castration, and community dog program (Garcia et al 2009; FAO 2010, 2011; Kwok et al 2016). Within this context, dog shelters are getting increasingly fuller, which directly compromised the animal´s welfare (Alves et al 2013).

Regardless of the shelter type, size or governance, dogs, oftentimes are subjected to certain stressors just by being in a shelter environment (Tuber et al 1999), and unfortunately could spend a long term of their life without important behavior´s stimulus (Wells & Hepper 1992). This proliferation of dogs long-term sheltering combined with low adoption rates and the absence of facilities or management basic standards for shelters have an important welfare concern (Rooney et al 2009). And even with there is growing interest in improving the welfare of dogs in Brazilian´s shelters, good management practices are often limited due to staffing, time and budgetary constraints.

To the present there are no studies that assesses the welfare of shelter dogs at housing and animals' level in Brazil even when is a well know problem.

Measure dog welfare in shelters is not an easy task, because many indicators must be applied, involving both shelter management, housing and environment conditions, dog healthy and sociability status, food quality restriction, lack of veterinary care and

even genetic changes (Luescher et al 2009; Arhant et al 2015). It is therefore important to have a tool that allows a direct evaluation of the real welfare state of dogs housed in shelters, by observing at the same time, all these indicators.

The Shelter Quality protocol was developed to providing a valid, reliable and practical tool for assessing shelter dog's welfare (Barnard et al 2015). This protocol was builder and based in Welfare Quality® protocols for livestock (Welfare Quality® 2009), and also respected the four welfare principles - good feeding, good housing, good health, appropriate behavior, having the twelve specific shelter dog outcomes criterions.

In an attempt to estimate the actual welfare state of the Brazilian dog´s shelters this protocol was applied and further indicators were proposed in order to bring the protocol closer to Brazilian reality.

MATERIALS AND METHODS

This study was approved by Pontifícia Universidade Católica do Paraná – PUCPR in the Animal Research Ethics Committee (CEUA), under protocol number 01129, and the Ethics Committee for Research with Human Beings (CEP) with 2.401.931 number.

Nine dog shelters were visited in the city of Curitiba-PR and its metropolitan area (Figure 1). Only those shelters that voluntarily accepted to in the study were considered. The Shelter Quality (SQ) protocol was applied to assess dog's welfare using well-defined parameters, divided into four principles and twelve evaluation criteria (Table 1). For each criterion, there were specific indicators based on the shelter's own records (management data); based on environmental resources (facilities) and on the animal's (behavior and health). The protocol was applied by a single evaluator that was trained by one of SQ authors.

The study was divided into two steps: first Shelter dog's welfare evaluation by SQ protocol and finally the adaptation of the protocol indicators and suggestion of new measurements based on Brazilian reality.

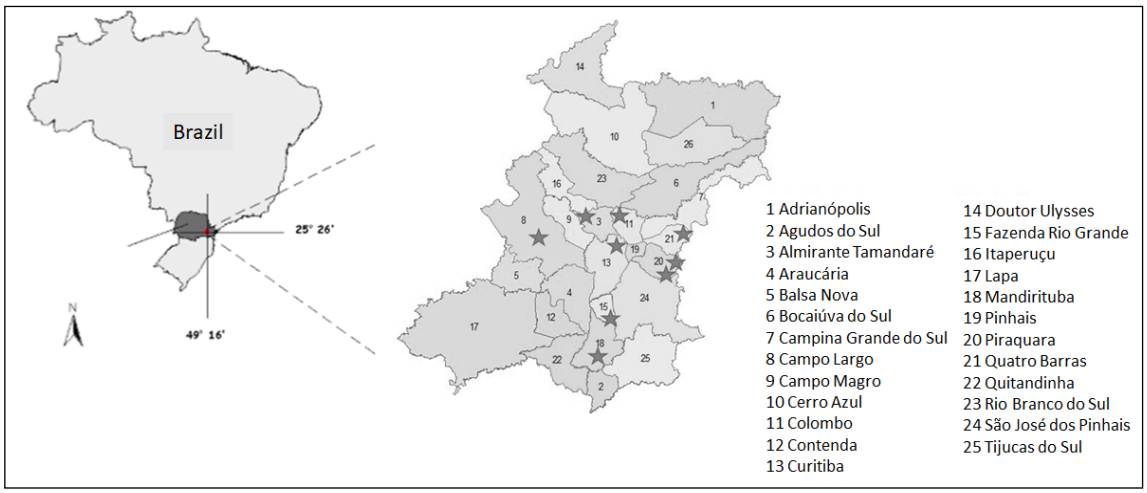

Figure 1. Location of the nine shelters evaluated in Curitiba-PR and metropolitan regions in Brazil.

Table 1. Animal welfare indicators based on *Shelter Quality*® protocol.

Principles	Criteria	Measures
Good feeding	Absence of prolonged hunger	- Body condition - Feeding
	Absence of prolonged thirst	- Water supply
Good housing	Comfort around resting	- Bedding - Sharp edges - Cleanliness
	Thermal comfort	- Shivering - Huddling - Panting
	Ease of movement	- Space allowance
Good healthy	Absence of injuries	- Skin condition - Lameness
	Absence of disease	- Evidence of pain - Diarrhea - Coughing - Mortality - Morbidity
	Absence of pain induced by management procedures	- Surgeries - Pain relief
Appropriate behavior	Expression of social behaviors	- Social housing
	Expression of other behaviors	- Abnormal behavior barking - Stereotypy - Exercise

Good human-animal relationship	- Reation to human
Positive emotional state	- Emotional state – QBA

Management-based indicators involved a questionnaire that was asked to the shelter manager or other competent person, and referred to the total shelter dog population and its condition on the day of the visit, including the following variables: 1) number of dogs in the shelter; 2) number of hospitalized dogs; 3) presence of operating procedures for post-surgical monitoring; 4) presence of protocol of analgesia; 5) if dogs were walked on leash by shelter personnel or by volunteers; 6) number of hospital pens; 7) number of single pens (pens containing only one isolated animal), pens in pairs, pens in group of less than 5 dogs, and pens with more than 5 dogs; 8) total number of pens in the shelter; 9) presence of outdoor area and it size; 10) number of animals euthanized for health and behavioral reasons; 11) number of deaths despite euthanasia; 12) animal´s behavioral assessment by a visual analog scale, called QBA (Qualitative Behavior Assessment); 13) the type of diet (dry pellet, cooked, wet/canned); 14) if there is specific diet for puppies, geriatrics or hospitalized animals; 15) feeding regime (once a day, twice a day, or *ad libitum*) and the 16) shelter's expenses with clinical treatment in one year.

Resource-based indicators assessed animal's pen, their living environment and all animals confined to it (regardless of dog's number), assessing: 17) the number of animals over and under 20 kg; 18) pen area dimensions; 19) if there was an indoor (for sun protection) and outside area; 20) presence and type of bed; 21) presence of sharp edges in the animals' living environment, 22) presence, type and function of water supply; 23) water cleanness; 24) number of animals panting, shivering, huddling; 25) number of animals insistently barking in the evaluator presence; 26) number of

stereotyped animals (active repetitive/other compulsive behavior); 27) number of animals in pain and 28) presence of diarrhea in the pen floor.

Animal-based indicators included: 29) animal age class; 30) body condition; 31) animal cleanness; 32) number of animals hurt; 33) hair loss; 34) swellings; 35) presence of ectoparasites; 36) lameness; 37) cough and 38) human-animal relationship test. For these evaluations a subsample of dogs was individually evaluated according to the sample proposed by the protocol (Table 2), using the minimum sample required for reliable data.

Table 2. Sample suggested by *Shelter Quality*® protocol for individual assessment based on shelter population size.

Total number of dogs in the shelter	Total number of dogs to be evaluated
Up to 59	30
60-89	40
90-139	50
Mor than 140	60

As this is a descriptive study with an methodological approach, all welfare indicators of the nine evaluated shelters were compiled into an database and were synthesized, analyzed and presented in a predominantly qualitative manner, in order to summarize and describe the most important aspects of Brazilian's shelter dog welfare.

RESULTS

Indicators based on shelter management

On average, the shelters housed 66.67 (± 27.63) dogs, ranging from 112 to 21, according to the largest and smallest shelter assessed. The dogs were mostly housed in pens with less than 5 animals (32.30%); groups were formed mainly by four dogs. However, it was also observed a high rate of single housing (26.15%), excluding those in isolation for health reasons (9.23%). Most of the animals were isolated by behavioral problems, being aggressiveness the main cause.

Five shelters left the dogs daily in an outdoor fenced area (55.5%); while three (33.3%) of them have no outdoor access. Just in one shelter dogs were walked on leash by volunteers once a week.

All shelters provided dry pellet to the animals, with noncooked or wet/canned diet. Furthermore, all shelters managers affirmed that they offer constantly a mix of different dry pellet ingredients and raw materials based on donation availability. However, most of the shelters had as standard procedure to provide special diet for puppies (88.8%), as well as for geriatric (77.7%) and hospitalized (88.9%) animals. Meals varied, between 44.4% of dogs being fed once a day; 33.3% twice, and 22.2% fed *ad libitum* for the animals.

Regarding surgical procedures, 77.7% of the managers said that shelter had postoperative monitoring, and 66.6% affirmed to have some analgesia protocol, especially for castration surgeries. However, just a few shelters had specific pens for keeping the hospitalized animals, on the day of visit, only one shelter demonstrated to have this resource, and just 2.0% of dog population of its shelter were under medical care.

Shelters recorded 4.5% of natural deaths without human intervention, adding to the rate, 2.5% of dogs euthanized for health reasons and 0.16% euthanized for behavioral problems.

Pens evaluation

In total, 130 pens were evaluated, 36.5% of them housed animals weighing more than 20kg (large size dogs), 41.7% housed animals weighing less than 20kg (medium size dogs) and a 16.3% had mixed large and medium sized animals in same pen. An exclusive small size dogs (less than 10Kg) group pens also were present in Brazilian´s shelter with 4.6% of prevalence.

The pens with only indoor area and without outdoors access represented 41.0% of the cases; and in contrast, 41.3% of the shelters had only outdoor area, with a small roofed area within a movable shelter, made of plastic or wood material, which allows the animal to hide from mild adverse weather conditions. Finally, 17.6% of the pens had both indoor and outdoor areas. The pens were on average of 65.65 m² (± 10.12), ranging from 100 m² for the largest one and 4 m² for the smaller.

Regarding bedding (considered by the protocol as any structure that allows dogs not to have direct contact with the floor, that are easy to clean and disinfect, and constituted with good material, ensuring the safety of the dog – i.e. without harmful edges or ingestible parts) 78.3% of the pens had appropriate bedding requirements. However, 9.0% of the pens had less than one bed per dog, had harmful conditions to the animal (9.0%), or the material provided were wet or with faeces (3.8%).

The most common type of bed found was the movable shelter (79.1%), followed by the basket bed (11.1%) and a bed with a *pallet* material (5.9%). Most of the pens (78.5%) had visible edges in the environment that could hurt the animals, being the most common wires and pieces of wood.

Drinking water was supplied in bowls or buckets filled manually by shelter staff in 98.5% of the pens; and the remainder pens (1.5%) provided the water in cement troughs. No automatic drinker was found in any shelter. Of all pens evaluated 9.2% of

them had low or no water available for the dogs. Regarding the safety of the drinkers, only 3.7% were not considered safe because contain sharp edges or rust. The water was clean in 89.5% of the evaluated pens, with the others 10.5% with faeces and sludge inside.

At the visit, during the behavioral evaluation, no animals were found under thermal stress conditions, since there was no animal shivering or panting. In the behavioral assessment, it was observed that 28.0% of the pens had insistently barking dogs (defined by the protocol as a short and repetitive continued vocalization), 0.18% had animals with behavioral characteristics of pain and 0.56% with diarrhea on the ground. No dogs were observed performing stereotyped movements or any other compulsion.

Animals individual evaluation

A total of 131 dogs were evaluated individually, 97.69% of them were adults (between 1 and 6 years) and 2.30% were elderly (over 6 years). Young animals (under one year old) are not evaluated by the protocol.

Most of the dogs (99.2%) had an adequate body score condition and only one animal (0.7%) had an overweight score (obese). All animals were clean, without coughing, without big injuries and ectoparasites. There were a few skin wounds (6.16%) and alopecia conditions (9.24%) in the animals. However, it is noteworthy that only in one shelter, from the 19 dogs evaluated, 7 had hair loss (representing 36.8% of the total for this shelter). It can be inferred that such alopecia is associated with the type of material used to cover the ground of animal's pen, wood straw, that through constant contact with the animals' coat may be the cause of irritation and extensive hair loss in this specific shelter.

Regarding lameness, only 2 dogs from different shelters presented moderate lameness score (1.5%). During the fear test, 84.6% of the animals showed no signs of fear or aggressiveness in the presence of the evaluator. However, in two shelters, out of 39 animals evaluated, 19 showed signs of fear, dodging or hiding in the human presence (48.7%).

Welfare indicators added in SQ protocol

Shelter management

The protocol adaptation consisted of identifying, during SQ application, critical points of Brazilian shelter dog´s welfare that were not included in the protocol, or that had any indicator to assess them. During management questionnaire, eight questions were added in order to better characterize the shelter: a) Presence of vaccination protocols, endo and ectoparasites control; b) Presence of environmental enrichment; c) Presence of dog's socialization program; d) Presence of castration program; e) Shelter adoption rate and turn-over dogs rate; f) Number of stakeholders involved in shelter´s activities; g) Main shelter income and h) Veterinarian care detailed.

It was found that all the shelter´s had a vaccination protocol with an annual calendar, including multipurpose and rabies vaccines. However, deworming was received twice a year just in one shelter (11.1%), that belonged to pharmaceutical donations. For ectoparasite control two shelters (22.2%) said that they performed an environmental control, and any shelter administered animal drug´s for this purpose.

Environment enrichment was present in just one shelter (11.1%) in a single dog's pen, consisting of a raw bone functioning as a food and bite item. Two shelter's (22.2%) affirmed to have a dog socialization program. In one of them, the socialization was developed by a veterinary student´s group (n = 8) consisting in a one-hour session, three

times in a week, as part of Vet course subject. The students performed dog´s basic training and inter and intra species socialization techniques. The other shelter, had volunteers during the weekends, that interact with the dogs for 30 min sessions in each shelter pen, one person at time.

All the shelters evaluated were registered in Brazil government castration program, performing in average 6.2 (± 2.0) castrations per month. In general, the adoption rate in Brazilian´s shelters are low, with in average four animals been adopted in each adoption marketplace (usually four per month), disregarding the puppies, whose adoption is higher. The dog's turn-over, in all of the shelters had the dog's behavior as the main problem, with non-environment adaptation, increasing destroyed and aggressiveness behavior.

Few people were involved in shelter daily activities, been more common to found just three (66.6%) or four (33.3%) fixed workers for each shelter. All the shelter costs (food provide, clean and facilities maintenance, medical care, employees salary, water and light energy were mainly payed by donation found raised by shelter campaigns (99.9%), and a few minorities had some governmental supply (11.1%).

The most shelters had don't had its own veterinarian, being the dogs attended by different professionals in a private clinics or veterinary hospital (99.9%) and just one shelter had its own veterinarian (11.1%).

Pen evaluation

The pen hygiene assessment has been included on Brazilian protocol once 88.8% of the shelters had the floor clean (scored 0) without urine and feaces accumulation in the visit moment. However, 22.2% of the shelters receive scores 1 – with the floor dirty and wet.

We also added a new pen classification according to dog´s size and weight, once an exclusive pen for small size dogs (less than 10Kg) appeared in 4.6% of Brazilian´s shelters. It was also necessary to include another type of bed (despite those required by the original protocol) with a *pallet* material. This characteristic bed had been present in 5.9% of the evaluated shelters.

The positive emotional state (QBA assessment) were not applied in this study since the evaluator did not feel confident in applying the methodology nor performing the measurements. For animal´s individual evaluation no other parameters have been added.

DISCUSSION

The SQ protocol was widely applicable to Brazilian shelters condition, with inclusion of some additional indicators that complete the welfare diagnosis. No study so far has been published involving a complete animal welfare assessment in Brazilian shelters.

Barnard et al (2015) using the same protocol tool evaluated 29 shelters in different countries (Italy (11), Spain (10), Croatia (3), Romania (3), Serbia (1), Montenegro (1) concludes that systematic data collection across different countries provide relevant information that could be included in policy-making processes or integrated in international organizations recommendations as OIE (World Organization for Animal Health) code. The authors also highlighting that measures refine could also provide an important research advance.

Brazilian shelters had an own characteristic to be maintained mainly by donators, with a few Government supply (Catapan et al 2015). This particularity often puts dog's welfare under risk due to the constant absence of basic resources. However, no animal

welfare diagnosis has been used to point out the Brazilian challenges and qualities. Thus, the present study brings an overview of shelter dog's welfare and situate Brazil in the framework of welfare world rank.

After the nine shelters assessment the mainly Brazilian management welfare problems can be listed the low rate of single dog's housing; a percentage of indoor facilities lacking of outdoor access for dogs; variability on the diet because of the mix of different ingredients based on type of food donated; few shelters with specific pens for hospitalized animals; percentage of natural deaths; failure in deworming and ectoparasite control; lack of environment enrichment; low adoption rate and few shelter employees.

It is a common knowledge that provide dog social contact modulate their temperament overtime, making it more attractive for adoption and likely increase their welfare (Wells & Hepper 2000; Coppola et al 2006). Isolate an animal cause an intense frustration feeling, since the dog, as intrinsic social animal, are unable to make physical contact (Wells 2004). Others drastically behaviors changes include increased excitement and aggression (Beerda et al 1999). In the Brazilian shelters, dogs with the worst temperament behaviors are the ones that are put in isolation. These suggests that the cases will become even worse, significantly reducing the adoption chances of these animals, perpetuating their shelter enclosure.

Dogs also present sunbathing as common behavior to stimulates important vitamins production for their maintenance and because sun exposed release serotonin, responsible for pleasurable sensations (Serpell 2016). Shelters that did not provide to the dog's outdoors areas are directly impairing the welfare of animals. The shelter environment itself is characterized by a large proliferation of pathogens (Pesavento & Murphy 2013) easily transmitted from dog to dog, causing an unhealthy dog's state. In

this study only one shelter presented hospital pens, this may represent a health risk. Together with feed quality and failure in deworming and ectoparasite control, this could aggravate the animal´s health, reflecting in the natural deaths in Brazilian shelters.

At pen level, the main factors that affected the dog's welfare were poor environment conditions, with visible sharp edges that could hurt the animals. Many of these points were related to facilities maintenance, which intrinsically need financial investment. Being the problem aggravated with the few people involved in shelter daily activities.

Regarding the bed, almost all types were considered adequate for dogs, however, none proved to be effective in offer thermal comfort to the animals in low temperature situations. We suggest, as a complementary indicator, that shelters have some temperature measurement (thermometer) in the dog´s bed accommodation in order to identify the risk of thermal stress during the months of the year.

Another point that worth mentioning in pen level evaluation is the insistently barking behavior in Brazilian shelter's, which can be indicative of higher level of stress (Beerda et al 1997). Depending on the noise levels, barking could potentially be damaging the dog's auditory (Sales et al 1997). Dogs living in the shelter for a prolonged period, demonstrated to have hearing change after 6 months (Scheifele et al 2012).

During animal's individual evaluation, the skin wounds and alopecia condition of a specific shelter deserves attention, mainly because of the inappropriate ground covered material. The wood straw used, when in constant contact with the animals can be inferred alopecia and wounds as a result of an allergic sensitization (Kim et al 2011). The allergic procedure causes intense itching associated with painful sensation, significantly decreasing the animal's welfare.

Summarizing, the Brazilian shelter dog's welfare depends on several factors related to the animal itself, management procedures, and the environment that can be addressed to improve the animal´s coping abilities and adaptation (Broom 2011). SQ protocol address various criteria and critical points of the dog's welfare, proving to be a useful tool not only in the scientific manner or as normative standards, but also in offering a practical tool for shelter managers to identify potential welfare risks of animals under their care. By improving Brazilian shelter management, we expect to provide better dog's life quality, avoiding suffering situations.

CONCLUSIONS AND ANIMAL WELFARE IMPLICATIONS

SQ protocol was feasible and practical for Brazilian´s shelter dog evaluation with assertive indicators, highlining the main critical points and exalted those that had better results. Although to contemplate extra measures, it was necessary to do some adjustments to the original protocol to gather some relevant aspects of dog's welfare. The included elements, such as healthy management (vaccination, endo and ectoparasites control, castration, veterinary care), availability of environmental enrichment, aspects of dog's socialization, adoption and turn-over dog rate, number of employees involved in the chain and shelter income enriched the welfare indicators. For further validation, this adapted protocol has to be applied including a large number of Brazilian shelters in different regions to characterize the of dog's shelters current situation.

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CAPÍTULO 3

(Artigo científico submetido para publicação no periódico Applied Animal Behaviour Science)

SHELTER DOG'S TEMPERAMENT AND ITS INFLUENCE ON LEARNING OF BASIC COMMANDS AND ADOPTION RATE

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ABSTRACT

In order to verify the influence of the temperament of rescued dogs on basic commands learning and adoption rates, 30 mixed-breed dogs were evaluated. Temperament data were collecting by means of focal animal sampling method in three different environments: taking the dogs individually outside his pen for a walk; at an isolate pen, just with an observer presence and in his shelter pen with the presence of known dogs (10-min of observation for each one). A check sheet recording was used with a pattern score (0-absent; 1-low; 2-moderate; 3-high) to eight predetermined behaviours responses of confidence, fearfulness and aggressiveness. Also, 7-item selection training commands were applied in both basic obedience and retrieval task in attempt to overall the dogs individually performance over time. A principal component analysis (PCA) followed by Spearman's correlation coefficient was used to analyzed dog's temperament scores for adoption rate and time dog's took to learn each training command. The PCA score plot was used to classify the dogs in two main factors: "aggressiveness/sociability" and "activity/environment exploration". All the basic commands were also correlated between them by Pearson's test. PCA factors explained 47.5% of the variation in the data set, with higher positive loadings for "aggressiveness" and "activity" and higher negative loadings for "sociability with dogs". Temperament factors were not statistically significant to the time dogs took to learn the different commands neither to adoption rate. However, a correlation between training commands learning time were found. "Lay down" were positively correlated with "stay" (r=0.4, p<0.02), "paw give" (r=0.5, p<0.002) and "crawl" (r=0.4, p<0.009). "roll" were positively correlated with "paw give" (r=0.4, p<0,01) and "crawl" (r=0.5, p<0.002). Adoption rate were negatively correlated with "lay down" (r=-0.54, p<0.02), "stay" (r=-0.8, p<0.03) and "crawl" (r=-0.8 p<0.05). We conclude that the time dogs took to learn

specifics training commands were an important indicator which reflects the dog's temperament and influences the adoption rate. Score the 10-min focal sampling observation of some well-defined behaviours proved not to be efficient method to report dog's temperament, not having connexon with adoption rate.

Keywords: Behaviour; Rehabilitation; Resocialization; Welfare.

1. INTRODUCTION

Dog shelters admit many dogs annually with different types of backgrounds: neglect, abused, mistreated, sick, injured, abandoned or those who lived on the streets. These life historic affects dog's ability to cope with different environments, including social ones, with can difficult the bond dogs form with humans (Serpell and Jagoe, 1995). In dog's shelters, researches are far more likely to study dog's behaviors that directly affect humans, such as aggression, often leaving aside primarily dog's behavior as fearful (Wells and Hepper, 2000; Appleby et al., 2002; Shore et al., 2008). Specific studies that address dog´s individuality behavior, highlighting the temperament characteristics have been with few scientific approaches (Hennessy et al., 2001; Marston et al., 2003, 2004; De Palma et al., 2005; Christensen et al., 2007).

Temperament has been defined as an animal's response to novel or challenging situations (Jones and Gosling, 2005) that stabilizes across the time, defining the individually characteristic of the dog (Christensen et al., 2007). Temperament modulates animal's behaviour and directly affects the degree to which it suffers stress in the presence of conspecifics and human beings. However, it's well known (Svartberg and Forkman, 2002; Scartberg et al., 2005; Bell et al., 2009) that temperament also can

be modulated by environment manipulations, which, depending of the intensity of the interference, can also result in permanent modifications of dog behaviour.

Depending on dog's characteristic temperament, it will have a little guarantee of a positive outcomes in shelters, mainly related to adoption opportunity. This, may be reflects in the shelter's statistics, decreasing the higher percentages of relinquishes, returns and euthanasia by behaviour problems (Patronek et al., 1995). It even has been reported that a dog behaviour is much more important as a potential adopter attention point than dog's physical appearance (Wells and Hepper, 1992). Thus, understand, identify and apply techniques to modulate the shelter dog's temperament could be the key to identify suitable strategies to deal with the problem. So, in shelters, dog's temperament has become an issue of wide interest (Barrera et al., 2010; Dowling-Guyer et al., 2011; Valsecchi et al., 2011).

Temperament evaluation in dogs were mainly applied to assess useful behaviour information as: level of aggression, fear, agitation and socialization. But may also be useful to identify specific and individual dog's patterns in order to apply the corrective measure or minimize behaviour problems. A study (Van der Borg et al., 1991) demonstrated that shelter dogs when adopted as companion animals, displayed behaviour problems that could be predicted by temperament tests in 74.7% of the cases.

Thus, provide an increase of positive dog-human contact could make shelter dogs behaviorally more attractive for adoption, and at the same time, increase their welfare (Coppola et al., 2006; Veisser and Boissy, 2007). Many different techniques to improve dog's sociability was applied in shelters (Tuber et al., 1999; Bellaio et al., 2009, Luescher et al., 2009) aiming an adoption rate increase. The dog's training was the one that proof to better provide opportunities for socialization, reduce behaviours problems and improve the human bond (Bennett e Rohlf, 2007, Lefebvre et al., 2007, Arhant et

al., 2010). Also, could increases the dog's controllability of the environment which makes him deal better with stressful situations, preparing him for new environments exposure as a new home (Reid, 2009).

Most of the training methods use the operant condition to stimuli the dog's responses to the instructions, with reward reinforcers (Domjan, 2006). This type of technique is effective in training dogs to perform basic obedience commands, and also is an easy task to follow the evolution of dog's learning (Alexander et al., 2011). In shelter context, the training act as an attractiveness tool for dog's socialization, facilitating the behaviour control of unruly or excitable dogs as well (Barrera et al., 2015).

Therefore, this study aimed evaluate if (1) different individually temperament scores and (2) a basic obedience training program establishment in shelters had influence in dog's adoption rates.

2. MATERIAL AND METHODS

This study was approved by *Pontifícia Universidade Católica do Paraná* – PUCPR in the Animal Research Ethics Committee (CEUA), under protocol number 01129.

2.1 Animals

Thirty sterilized dogs, 17 females and 13 males, of mixed breeds and ages (1-5 years), who lived in a care University unit of PUCPR in the city of Curitiba, Paraná – Brazil, were selected among a pool of 81 dogs. We use as selection criteria the length of dogs stay in the shelter (minimum one year) and the healthy conditions, were unhealthy animals were excluding. The backgrounds of any of the 30 selected animals was known

in detail, but it they can be described as abandoned or stray dogs. All dogs had medium size, with weight between 10 to 25 Kg.

2.2 Housing

The care unit of PUCPR is a long-standing dog shelter, located adjacent to the Veterinary Hospital of the University. Had an adapted building for housed the dogs abandoned in the campus, or those that appear across the campus attracted by the constant veterinary student´s movement and food supply.

The University shelter had a similar structure of the mostly Brazilian shelter's, with indoor and outdoor chain-link fenced kennels, that allows dogs see each other, and pens positioned side by side. The size of the pens was approximately 180m^2 each, with concrete flooring in indoor areas and grass on the outside. Generally, all pens were occupied by nine dogs and had a bed pallet structure with some cardboard or blankets on top (Figure 1).

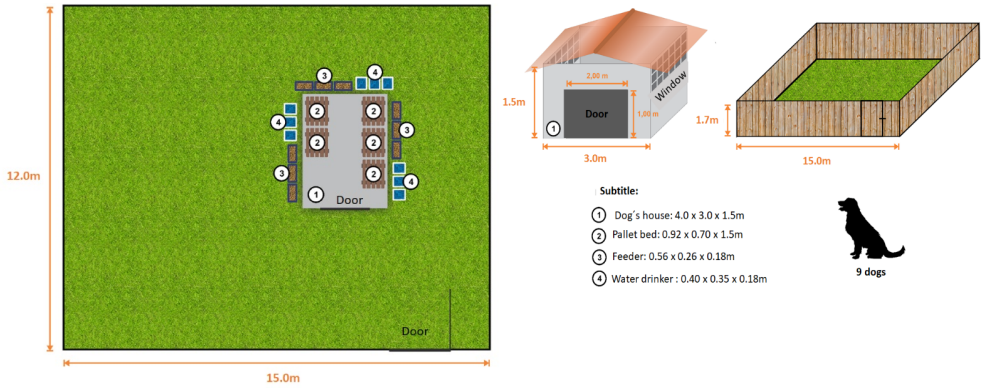

Figure 1. University shelter pen design and structure.

2.3 Handling and management practices

Because it is a University shelter, the dog's handling and management practices had some particular differences. They are fed twice a day with pelleted feed, water

replaced, and pen cleaned, by five different staffs (with an alternate day work system), not specifically hired for this purpose, but that also perform other routine University activities. Dogs also are constantly visited during the day by several students, who are around the Veterinary Hospital on weekdays. On weekends, feed and water replenishment are only performed once a day, and the contact with humans was limited to this punctual one-off visit.

Up to this study, dogs did not have a walks routine to outside areas of the shelter. They, therefore, remained mostly confined to their own pens. In a 5-months period, socialization and entertainment dog's program were implemented at the University with the active veterinary student's collaboration. A basic command training routine were implemented 3-days a week and a 7-item training commands were selected involving basic obedience and retrieval task.

2.4 Dog's basic command training

Each dog was trained using operant conditioning method with positive reinforcement (food) in a group training session, took place in an open fenced field adjacent of the shelter's. In total, 30 students participated during the five uninterrupted months of training, being one student appointed as responsible for a dog.

Students were in all sessions always accompanied and under guidance of a canine ethology expert. Each session took place on three different days (Monday, Wednesday and Friday) with a minimum of 2-hours duration. A 7 basic commands exercises were applied: "sit", "lay down", "stay", "paw give", "roll", "crawl" and "walk on leash", and all have been taught since the first training session, however it is noteworthy that some commands are interdependent on others.

The dogs, individually, were observed over the training sessions by an observer in order to verify the effective learning of animals in the seven basic commands exercises. It was considered that the dog effectively learned the command, when at the end of each session, it correctly performs the command in three subsequent attempts, and were able to remember an perform it correctly in the next session. For the "walk on leash" command, it was only considered that learning was effective when the dog walked alongside his tutor student without making sudden pulls, setbacks or stops during 5-minute observation. The technique used to teach each command is described in Table 1.

Table 1. Description of dog's commands teaching steps.

Command	Description
Sit	Treat was held in front of dog's nose moving back over it head. If the dog followed the treat and sit down, he is rewarded.
Lay down	Treat was held in front of dog's nose moving to the floor. Student also assists the movement pointing the floor with your other hand. When the dog leans its belly on the floor he is rewarded.
Stay	Followed by the "sit" command, the "stay" were applied showing the treat to the animal with one hand and positioning the other hand in front of dog's nose as a stop sign. If the dog remains in the same place while the trainer moves away by three steps of distance, the dog is rewarded.
Paw give	Treat was held constantly in front of dog's nose and the trainer with the other hand touches the animal's paw encouraging him to lift it. When the dog voluntary raises its paw, he is rewarded.
Roll	Followed by the "lay down" command, the "roll" was performed moving

	the treat from right to left first and making an imaginary circle with the treat-hand after. At the same time, the trainer force gently the animal's palette to follow the movement with the other hand. Because it was a more complex command, the reward happened at two main moments: when the dog performed the lateral positioning and when the rolling behaviour was complete done.
Crawl	Followed by the "lay down" command, the "crawl" was applied showing the treat to the animal and dragging it through the floor. If the dog followed the treat and initiates the movement of walking keeping the body in lying position, he is rewarded.
Walk on leash	Dogs were enticed with a treat to put their head progressively through the leash collar. Once they accepted the collar, the dogs were encouraging to walk side by side the trainer. A correct walk on leash were considered with animal without pulling (forward or backward). This was achieved by either stopping when the pull movement occurs and waiting until dog stopped pulling. Pull back the dog on the correct position and relaxing the leash when the movement is respected also were permissive.

2.5 Temperament tests

Temperament were the first behaviour data collected, before starting the basic commands training sessions with the veterinary student's collaboration. Temperament data were gathering using the focal sampling method in three different: a) taking the dogs individually outside his pen for a walk on leash; b) at an isolate pen, just with the observer presence, and c) in his shelter pen with the presence of known dogs. In each environment, the dog's behavior was observed for 10 minutes.

After the three sequential observation (30-min per dog) the evaluator uses a check sheet, recording the intensity of the occurrence of predetermined behaviour patterns (Table 2) of one dog by means of four possible scores: 0-absent; 1-low; 2-moderate; 3-high. The ethogram used in this research was based on previous description of dog's behaviour (Beerda et al. 1998, 1999; De Palma et al., 2005; Christensen et al., 2007; Valsecchi et al., 2011).

Table 2. Behavioral categories selected to temperament tests.

Behaviour	Description
Excitability	Slavering, walking, trotting, galloping, running, jumping on roof, scratching door, barking, whining, grumbling.
Aggressiveness towards people	Growling, transverse glance, fur raising, lip curling, showing teeth, dashing at bars, keeping distance from the people test, staring, rigid body posture.
Aggressiveness toward dogs	Growling, transverse glance, fur raising, lip curling, showing teeth, keeping eyes fixed on other approaching dogs.
Sociability towards humans	Waving tail, approaching and even touching observer, accepting being cuddled, inviting to play.
Sociability towards other dogs	Waving tail, leaning on a dog, allo-grooming, inviting to play, sniffing dog, anogenital sniffing, anogenital licking, playing, inviting to play, answering invitation to play.
Environment attentiveness	Smelling the floor, exploring, looking outside, nose upward sniffing different odors, looking carefully the environment,

	looking at observer, raising foreleg (for males).
Dominance towards humans	Staring, tail still, tail high, waving high tail, jumping upon observer, upright, not head off, not shunt.
Dominance towards other dogs	Staring, tail still, tail high, waving high tail, mounting, upright, not head off, not shunt, have access to the best pen features.

2.6 Dog's adoption program

All the 30-dogs of this study were taken to continuous adoption fairs (for 3 consecutive months) on Saturdays carried out in a large pet-shop in Curitiba-PR. The dog's adoption also happened effectively by the students contacting people (e.i. friends, family, etc.). At the end of three months campaign we calculated the adoption rate (successful or unsuccessful), and the remained dogs not adopted stayed under the University shelter care.

To attract and encourage adoption, dogs under this study, pass through a veterinarian monthly visit (3-consecutive months) in order to assist the dog new home adaptation; had a 90-day period of free veterinarian attendance; were dewormed; vaccinated; microchipped and the tutor received 1Kg of dry food and 1 wet food sachet.

2.7 Statistical analysis

All statistical analyses were performed in SPSS software, version 14.0. Temperament data was determined by a normed Principal Component Analysis (PCA) with varimax Kaiser normalization as a rotation method, with a minimum eigenvalue extraction. PCA described the relationship between the individual dog's behavioural scores for each of the 8 behavioural categories listed in Table 2, building a unique

behaviour score pattern for each dog from vectors directions (with go in the same direction or not) characterizing a typology of individuals.

Summarily, PCA combines all of the variables in a data matrix, and identify associations among them, which generates indexes called principal components (eigenvalues) that described the variation present in the data (Manly, 2008). The individual scores of the dogs are represented, for instance, in the two first factors, determined in this study as: factor 1 – "aggressiveness/relationship" and factor 2 – "activity/exploration". General Linear Model (GLM) followed by Sperman was used to test the association between the factors pointed out by PCA, dog's weight, age and the number of weeks dogs took to learn the different commands. The GLM followed by Kendall tau-b also were used for correlated the adoption rate, since it is a dichotomous variable. All the training commands were also correlated between them and adoption rate by Pearson's test.

3. RESULTS

The first principal component analysis (PCA) identified two primary factors with eigen values greater than 0.7 that explained 47.5% of the variation in the data set. Any correlation loadings of 0.70 or above is deemed relevant for each factor (Table 3; Figure 2). Furthermore, a high positive 1st factor value characterized animals with aggressiveness and dominant temperament. High positive 2nd factor value indicates animals with excitability and environment attentiveness.

It must be point out that all the dogs demonstrated sociability towards people, and none exhibited aggressiveness toward people, therefore, no data variability for these two variables were found, what made us omit these results in the Table 3 and Figure 2.

Table 3. Rotate Component Matrix of results from the PCA analysis.

	1st Factor "aggressiveness/relationship"	2nd Factor "activity/exploration"
Excitability	0.038	**0.938**
Aggressiveness toward dogs	**0.906**	0.235
Sociability towards other dogs	**-0.966**	-0.093
Environment attentiveness	0.435	**0.746**
Dominance towards humans	**0.845**	0.193
Dominance towards other dogs	**0.860**	0.214

* The loadings of 0.70 or above are pointed out because of their relevance for the variable on the factor.

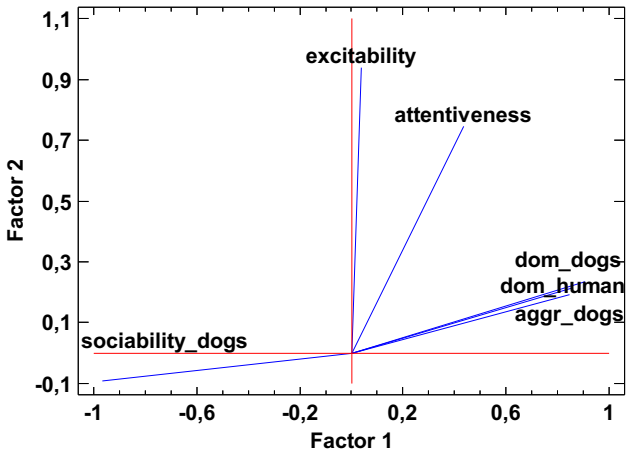

Figure 2. Factorial map of projection of the vectors build by PCA combinations of the 6 significant behavioral categories, multiplied by a constant of rescaling.

Temperament factors were not statistically significantly to dog's age, weight, adoption success and neither the time dogs took to learn the different commands (Table

4). In total, all dogs pass through 24 two-hours training sessions opportunities for learning.

Table 4. Temperament factors correlation with the individual dog's characteristics.

Variable	Correlation (r)	*P*-value
Age (n)	0.21	0.25
Weight (Kg)	- 0.11	0.55
Adoption success (y/n)	- 0.19	0.26
Sit (n*)	0.05	0.78
Lay Down (n*)	- 0.15	0.39
Stay (n*)	- 0.15	0.39
Paw give (n*)	- 0.25	0.16
Roll (n*)	- 0.27	0.13
Crawl (n*)	- 0.24	0.18
Walk on leash (n*)	0.04	0.78

* Number of training sessions for dog's learn the commands. General Linear Model (GLM) correlation followed by Sperman to test the association between the dog's temperament factors to dog's age and training commands. GLM followed by Kendall tau-b for correlation to the adoption success.

Finally, the different training commands were correlated between each other and between the adoption success of the dog's, and we could find some correlation between them.

"Lay down" command was positively correlated with "stay", "paw give" and "crawl". "Roll" were positively correlated with "paw give" and "crawl". Adoption rate were negatively correlated with "lay down", "stay" and "crawl" (Table 5).

Table 5. Training commands learning time correlated between themselves and between adoption success.

		Sit	**Lay down**	**Stay**	**Paw give**	**Roll**	**Crawl**	**Walk on leash**	**Adoption**
R	**Sit**		0.33	0.10	0.25	0.18	0.17	0.01	- 0.10
p-value			0.07	0.58	0.18	0.33	0.36	0.93	0.08
R	**Lay down**	0.33		0.40	0.52	0.27	0.46	0.02	- 0.54
p-value		0.07		**0.02**	**0.002**	0.14	**0.009**	0.88	**0.027**
R	**Stay**	0.10	0.40		0.13	0.20	0.20	- 0.05	-0.87
p-value		0.58	**0.02**		0.46	0.27	0.28	0.77	**0.03**
R	**Paw give**	0.25	0.52	0.13		0.43	0.50	0.26	- 0.85
p-value		0.18	**0.002**	0.46		**0.01**	**0.004**	0.15	0.10
R	**Roll**	0.18	0.27	0.20	0.43		0.53	- 0.04	- 0.27
p-value		0.33	0.14	0.27	**0.002**		**0.002**	0.83	0.88
R	**Crawl**	0.17	0.46	0.20	0.50	0.53		0.06	-0.88
p-value		0.36	**0.009**	0.28	**0.004**	**0.002**		0.73	**0.05**
R	**Walk on leash**	0.01	0.02	- 0.05	0.26	- 0.04	0.06		0.27

p-value		0.93	0.88	0.77	0.15	0.83	0.73		0.08

Variables correlated between themselves by Pearson's test. r = correlation.

4. DISCUSSION

Temperament tests standardized experimental situations where stimuli serve to elicit behaviour that is statistically compared with other individuals in the same situations, in order to classify the subject tested (Serpell and Hsu, 2001). Temperament tests conducted in the thirty shelter's dogs of this study seek individually specific characteristics of each dog during a series of shorter tests. These measures were subjected to a principal component analysis (PCA) of the results of eight behavioral pattern evaluation of shelter dogs and revealed a two component factors that reflects a behavioural patterns in dogs. Although the components identified in this study are consistent with past research (Goddard and Beiharz, 1984; Wilsson and Sundgren, 1997; Hennessy et al., 2001; Svartberg and Forkman, 2002; Hsu and Serpell, 2003), when we compare the temperament PCA factors between the adoption rate, dog's age and weight, and even between the basic commands time of learning, no statistical differences were found.

The temperament test used in this study assess selected behaviour characteristics of the dogs and measure the intensity of each one. Similar methodology, with few adaptations, it was also made by other dog's studies using adjective ratings (where the observer rates how strongly the adjective describes the dog) (Mondelli et al., 2003; De Palma et al., 2005; Taylor and Mills, 2006; Christensen et al., 2007) and applying the behaviour observations at different environment, as taking the dog for a walk (Goddard and Beilharz, 1986), in an open arena (Ruefenacht et al., 2002) and at the dog's familiar pen (Beerda et al., 1998). The choice to utilize "rating" methology or other types of

behaviour measures to assess dog's temperament has been already widespread discussed (Gosling, 2001), and one method is not considered better than the others.

However, these technique proof to be difficult to implement in shelters pointing out the difficulty of applying standardized dog behavioural tests to a sample of dogs that do not have a common origin. Weiss and Greenber (1997) for example verifying the effectiveness temperament tests for dogs from animal shelters concluded that there was not only the possibility that the test utilized was not sufficiently sensitive, but also that it could have reflected the differences in environment between dogs and their various environments encountered in a shelter.

Dowling-Guyer et al. (2011) mentioned that temperament tests applying in shelters had as a principal challenge the restricted range of scenarios to which dogs are exposed, and those authors also highlight the importance of include specific subtests which measure dog's trainability as a way to transform the behaviour diagnosis more reliable.

For the present study, even observing the dogs in three different types of environment, the temperament test demonstrates no relation with adoption rates and dog's training ability. However, when we compare the training sub-tests we can noted an important correlation with adoption rate and within the training commands.

Seven different types of training obedience commands were used in the present study and the speed of learning for each dog was used as a response variable. Nonetheless, this type of subtests reflects not only the dog's cognitive ability to learn the command, but also the willingness to cooperate with humans (Valsecchi et al., 2011) and also it will be a part of human-dog communication (Elgier et al., 2009). This type of behavioural training that report obedience, shown to be more effectiveness using consistent positive rewards (Hiby et al., 2004; Haverbeke et al., 2008; Arhant et al.,

2010) as a standardized stimuli and were widespread applied (Hennessy et al., 2006; Luescher and Medlock, 2009; Rooney and Cowan, 2011).

A reward-based training increases the dog's motivation and aptitude to learn more commands, because it anticipate the rewards and increase it controllability of the environment with predictable outcomes, improving dog´s welfare (Greiveldinger et al., 2007; Veissier and Boissy, 2007). These techniques imply in the shelters can make the dogs more adoptable (Luescher and Medlock, 2009) and proof to be practical in a real-life setting.

Our study findings suggest that training of shelter dogs may also increase the adoption rate, especially when the dog can learn the most difficult commands rapidly ("lay down", "stay" and "crawl"). This link may be related to the fact that training creates more opportunity for positive interactions with humans (Wells, 2004), and also making the environment more predictable and controllable for the dog, implying in less stressful situations (Luescher, 2008), making it more attractive to a potential adopters. Hennessy et al. (2002), reported similar results where dogs exposed to a general training routine to ensure that it develops basic skills designed to ease the transition to a new home (Braem and Mills, 2010). It is also known that a prevalence of undesirable behaviours in dogs had an association between attendance at obedience training classes, with significantly fewer behaviour problems in dogs trained with reward technique (Clark and Boyer, 1993; Jagoe and Serpell, 1996; Kobelt et al., 2003; Bennett and Rohlf, 2007).

A number of studies have looked at the potential relationship between training experiences and the behavioural problems prevalence (Pongrácz et al., 2001; Kubinyi et al., 2003; Topál et al., 2006; Range et al., 2007), however, on the other hand, few studies reported the effects of obedience training on adoption rate of shelter dogs

(Luescher and Medlock, 2009), and no study, training a variety of different behaviours, lists which command, in specific, was related to the adoption rate. Luescher and Medlock (2009), in their study, point out this challenge, mentioning that a multiplicity of behaviours trained makes it difficult to pinpoint the exact behaviours that were necessary and sufficient to increase adoptions.

Continuing the findings of the present study, the association of the 7-commands learning were also correlated between them in this study. “Lay down” command was positively correlated with “stay”, “paw give” and “crawl”; and “roll” were positively correlated with “paw give” and “crawl”; which implies a positive association (large values of “lay down” or “roll” tend to be associated with large values of “paw give” and “crawl”, for example). The other command’s variable does not tend to either increase or decrease as *p*-value were less than 0.05.

A positive association means that if a dog learns the “lay down” command, for example, they will also learn the “paw give” and “crawl” commands as well. However, these correlated commands had low association values (less than 0.5) among them, which represents that were not learned at similar times.

5. CONCLUSION

This study demonstrated that the time dogs took to learn specifics training commands were an important indicator to increases the dog’s adoption rate. Score the 30-min focal sampling observation of some well-defined behaviours proved not to be efficient method that report the real dog’s temperament, being also not related with adoption rate. Student-volunteer auxiliary prove to be a practical way of implementing a training program in a university shelter dog as part of service-learning course.

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CAPÍTULO 4

CONSIDERAÇÕES FINAIS

A presente tese contribui para o entendimento da relação entre características do temperamento de cães e a sua pronta-relação com a taxa de adoção de cães de abrigo, após uma reabilitação social. Como principal resultado foi encontrado o tempo gasto pelos cães para aprender comandos específicos de treinamento, indicador importante para aumentar a taxa de adoção de cães de abrigo.

Os comandos de “deitar”, “ficar” e “rastejar”, foram os que tiveram associação entre o tempo de aprendizagem e a taxa de adoção, sendo que os cães que aprenderam mais rápido tais comandos tiveram maiores chances de adoção, com *p*-valor significativo no teste de correlação.

Verificou-se também que haviam comandos que se comportavam de forma associada, como o comando “deitar” que foi correlacionado positivamente com “ficar”, “dar a pata” e “rastejar”; e “rolar” correlacionado positivamente com “dar a pata” e “rastejar”; o que significa que, se um cão aprende o comando “deitar”, por exemplo, ele também aprenderá os comandos “dar a pata” e “rastejar”. No entanto, esses comandos tiveram valores baixos de associação (inferiores a 0,5), o que representa que não tiveram tempos de aprendizagem semelhante.

Conclui-se também que a mensuração do temperamento dos cães de abrigo de forma focal durante uma observação de 30 minutos, pré-definindo os comportamentos de “excitabilidade”, “agressividade em relação as pessoas”, “agressividade em relação a outros cães”, “sociabilidade em relação aos humanos”, “sociabilidade em relação a outros cães”, “atenção ao ambiente”, “dominância em relação ao seres humanos” e “dominância em relação a outros cães”, não podem ser relacionados ao sucesso na taxa de adoção.

Foi percebido que feiras de adoção de cães vinculadas a marcas de empresas consolidadas no mercado Nacional, bem como o adestramento e a sociabilização dos cães abandonados viabilizam mais facilmente as adoções.

Este estudo trouxe um avanço no conhecimento na área do bem-estar de cães de abrigo no Brasil por meio da aplicação inédita do protocolo *Shelter Quality*®, pois mostrou ser uma ferramenta efetiva, viável e prática para a

avaliação de bem-estar de cães dos abrigos. Porém o protocolo *Shelter Quality*®, deve sofrer adaptações para a realidade da maioria do abrigos no Brasil.

Recomenda-se que para posterior validação, esse “protocolo adaptado”, deva ser aplicado em um maior número de abrigos brasileiros em diferentes regiões para caracterizar melhor a realidade dos abrigos de cães em todo o território nacional.

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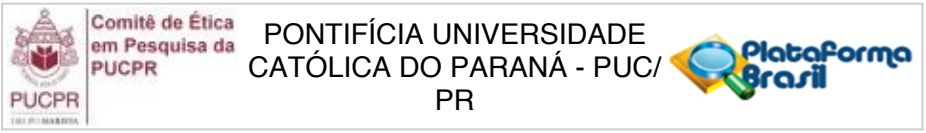
ANEXO 1 – Parecer de aprovação do Comitê de Ética em Pesquisa (CEP)



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Reabilitação e sociabilização de cães de abrigo para adoção
Pesquisador: LUCIANA DO AMARAL GURGEL GALEB CARVALHO
Área Temática:
Versão: 2
CAAE: 78337617.0.0000.0020
Instituição Proponente: Pontifícia Universidade Católica do Parana - PUCPR
Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 2.401.931

Apresentação do Projeto:
Os cães (n=40) que atualmente estão abrigados na Fazenda Experimental Gralha Azul, da Pontifícia Universidade Católica do Paraná (PUCPR) no Município de Fazenda Rio Grande. Este cães são provenientes de abandono nos diversos Campi da PUCPR e, atualmente estão sob a responsabilidade da Universidade. Após aprovação do projeto, os alunos selecionados participarão de aulas com temática pertinente aos assuntos de bem-estar animal, adestramento e saúde pública. Após a fase introdutória, se iniciará a fase prática do projeto. Nesta, os animais serão trabalhados no mínimo 3 vezes por semana, com fichas de avaliações comportamentais a serem preenchidas no final de cada sessão. Durante a execução do projeto serão realizadas quatro grandes campanhas de adoção e haverá a busca constante de parceiros e patrocinadores engajados com a causa a animal e adoção responsável. Será aplicado questionários para os estudantes para avaliar a reabilitação dos cães e para mensurar o impacto do projeto no aprendizado do estudante sobre as questões abordadas durante o projeto

Objetivo da Pesquisa:
O presente projeto tem por objetivo de testar um modelo para promover a reabilitação sanitária, a sociabilização e a adoção dos cães alojados em abrigo e, concomitantemente, expor os alunos do curso de Medicina Veterinária às práticas da Medicina de Abrigos.

Avaliação dos Riscos e Benefícios:
Riscos previstos e minimizados. Benefícios previstos.

Endereço: Rua Imaculada Conceição 1155
Bairro: Prado Velho **CEP:** 80.215-901
UF: PR **Município:** CURITIBA
Telefone: (41)3271-2103 **Fax:** (41)3271-2103 **E-mail:** nep@pucpr.br

Comentários e Considerações sobre a Pesquisa:

Pesquisa adequada metodologicamente dentro dos preceitos éticos.

Considerações sobre os Termos de apresentação obrigatória:

TCLE adequado e conforme estabelecido na resolução vigente.

Recomendações:

Sem recomendações

Conclusões ou Pendências e Lista de Inadequações:

Aprovado

Considerações Finais a critério do CEP:

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_997511.pdf	06/11/2017 10:37:46		Aceito
Outros	QUESTIONARIO.docx	06/11/2017 10:34:58	LUCIANA DO AMARAL GURGEL GALEB CARVALHO	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	TCLE.docx	06/11/2017 10:33:43	LUCIANA DO AMARAL GURGEL GALEB CARVALHO	Aceito
Folha de Rosto	FOLHADEROSTO.pdf	27/10/2017 00:04:51	LUCIANA DO AMARAL GURGEL GALEB CARVALHO	Aceito
Projeto Detalhado / Brochura Investigador	Projeto_detalhado.docx	14/09/2017 12:09:02	LUCIANA DO AMARAL GURGEL GALEB CARVALHO	Aceito
Brochura Pesquisa	Projeto.docx	14/09/2017 12:06:44	LUCIANA DO AMARAL GURGEL GALEB CARVALHO	Aceito

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

ANEXO 2 – Parecer de aprovação do Comitê de Ética em Pesquisa no Uso de Animais (CEUA)

Pontifícia Universidade Católica do Paraná
Pró-Reitoria de Pesquisa e Pós-Graduação
Comissão de Ética em Pesquisa no Uso de Animais

Curitiba, 22 de junho de 2017.

PARECER DE PROTOCOLO DE PESQUISA

REGISTRO DO PROJETO: 01129 – 01129A - 1ª versão

TÍTULO DO PROJETO: *REABILITAÇÃO E SOCIALIZAÇÃO DE CÃES PARA ADOÇÃO*

TÍTULO DO PROJETO A: *SOCIALIZAÇÃO DE CÃES PARA ADOÇÃO*

PESQUISADOR RESPONSÁVEL

Claudia Turra Pimpão

EQUIPE DE PESQUISA

Luciana do Amaral Gurgel Galeb, Eros Luiz Sousa, Paulo Renato Parreira, Tamara Duarte Borges, Gustavo Montijenko de Oliveira

INSTITUIÇÃO

Pontifícia Universidade Católica do Paraná

ESCOLA / CURSO

Escola de Ciências da Vida / Medicina Veterinária

VIGÊNCIA DO PROJETO	08/2017 a 08/2019	**QUANTIDADE DE ANIMAIS**	37
ESPECIE/LINHAGEM	*Canis lupus familiaris*	**Nº SISBIO** (Somente animais de vida livre)	Não se aplica
SEXO	M/F	**ATIVIDADES** (Somente animais de vida livre)	Não se aplica
IDADE / PESO	Média 2 anos / 20 kg	**ESPECIE – GRUPO TAXONÔMICOS** (de vida livre)	Não se aplica
ORIGEM DO ANIMAL	FEGA	**LOCAL (IS)** (Somente animais de vida livre)	Não se aplica

O colegiado da CEUA certifica que este protocolo que envolve a produção, manutenção e/ou utilização de animais pertencentes ao filo Chordata, subfilo Vertebrata (exceto homem), para fins de pesquisa cientifica, encontra-se de acordo com os preceitos da Lei nº 11.794/2018 e Decreto nº 6.899/2009, e com as normas editadas pelo CONCEA e foi **APROVADO** pela CEUA - PUCPR em reunião de colegiado no dia ***22.06.2017.***

Se houver mudança do protocolo o pesquisador deve enviar um relatório á CEUA descrevendo de forma clara e sucinta, a parte do protocolo a ser modificado e as suas justificativas. Se a pesquisa, ou parte dela for realizada em outras instituições, cabe ao pesquisador não iniciar antes de receber a autorização formal para a sua realização.

O documento que autoriza o início da pesquisa deve ser carimbado e assinado pelo responsável da instituição e deve ser mantido em poder do pesquisador responsável, podendo ser requerido por esta CEUA em qualquer tempo.

Comissão de Ética no Uso de Animais
PUCPR

Rua Imaculada Conceição, 1155 Prado Velho CEP 80.215-901 Curitiba Paraná Brasil
Telefone: (41) 3271-2292 www.pucpr.br

Pontifícia Universidade Católica do Paraná
Pró-Reitoria de Pesquisa e Pós-Graduação
Comissão de Ética em Pesquisa no Uso de Animais

Lembramos ao pesquisador que é **obrigatório** encaminhar qualquer **alteração** no protocolo de pesquisa e o **Relatóri0o Final** a esta CEUA.

Atenciosamente,
Prof. Dr. Sérgio Luiz Rocha
Coordenador
Comissão de Ética no Uso de Animais

Comissão de Ética no Uso de Animais
PUCPR

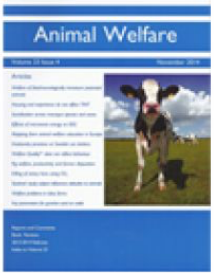
Rua Imaculada Conceição, 1155 Prado Velho CEP 80.215-901 Curitiba Paraná Brasil
Telefone: (41) 3271-2292 www.pucpr.br

ANEXO 3 – Normas do periódico *Animal Welfare*

Universities Federation for Animal Welfare
Science in the Service of Animal Welfare

Instructions for Authors

March 2019



Animal Welfare
ISSN 0962-7286

Editor: Robert C Hubrecht
Universities Federation for Animal Welfare
The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN, UK
Tel:+44 (0)1582 831818
Fax: +44 (0) 1582 831414
Email: ufaw@ufaw.org.uk
Website: www.ufaw.org.uk

Editorial Assistant: Steve Weddell Tel: 01434 382922

Email: journal@ufaw.org.uk

Aim and scope of the journal

Animal Welfare is an international scientific and technical journal. It publishes the results of peer-reviewed scientific research, technical studies and reviews relating to the welfare of kept animals (eg on farms, in laboratories, zoos and as companions) and of those in the wild whose welfare is compromised by human activities. Papers on related ethical, social, and legal issues and interdisciplinary papers will also be considered for publication. Studies that are derivative or which replicate existing publications will only be considered if they are adequately justified.

Papers will only be considered if they bring new knowledge (for research papers), new perspectives (for reviews) or develop new techniques. Papers must have the potential to improve animal welfare, and the way in which they achieve this, or are likely to do so, must be clearly specified in the section on **Animal welfare implications**.

The journal also includes letters to the editor, commentary on topical issues such as developments in legislation and codes of practice

Abstracting

The journal is covered by the Science *Citation Index* and is abstracted in: *Biological Abstracts; CAB Abstracts; Current Contents/Agriculture, Biology and Environmental Sciences; Current Primate References; EMBASE; Focus on: Veterinary Science & Medicine; Humans & Other Species; Research Alert; SciSearch; Toxicology Abstracts; Veterinary Update*; it is indexed in *Zoological Record.*

Refereed papers in *Animal Welfare* include:

- **Original articles**
- **Invited essays**
- **Review articles**
- **Short communications** of less than 2000 words. These may be original, interpretative or review papers; factual accounts of field workers' practical experiences in dealing with welfare problems; constructive critiques of other papers, etc
- **Technical contributions** for example, on practical methods of improving animal welfare or on aspects of research methodology or technology

Access to papers published in *Animal Welfare* and open-access arrangements

Most, papers published in *Animal Welfare* are only available through subscription to UFAW or 'pay per view' at IngentaConnect. However, arrangements can be made for open access publication of papers where authors prefer this, providing the manuscripts are found to satisfy the same rigorous peer-review scrutiny process as all other papers published in the journal.

Open Access

The journal offers a number of routes for open access:

Preprints

Authors can share preprints of their manuscript prior to acceptance for publication in *Animal Welfare* by providing copies to their students or to their research collaborators for their personal use. If the paper is accepted for publication it is good practice to link the preprint to the final publication via its DOI, and we encourage you to do so to allow your readers to cite the research effectively.

Paid for Open Access (Gold Open Access)

The article processing charge for open-access publication is £1,800 per manuscript. Papers published on a Gold open access basis will be available free to all at the IngentaConnect website and will also be included, in the usual way, in the paper copy of the Journal. Please contact the UFAW office, no later than at the time of acceptance of the manuscript, if you wish to arrange or discuss open access and the appropriate licence.

If you have paid for Gold access and wish to share your article with others, please do this by providing a link to the published article on the journal website rather than by sending a file.

Self-archiving on a non-commercial repository or website (Green Open Access)

Authors may self-archive the accepted version of their manuscript* on a non-commercial repository or website, on condition that public access to the manuscript is enabled only after an **embargo period of 12 months** from the publication date of the issue in which the paper is published. This embargo period is needed to allow the Journal to provide value to paying subscribers. Accepted manuscripts should link to the final publication via the final publication's DOI. This allows your readers to cite your research effectively. You must not make any changes to the archived accepted manuscript so as to make it more like the published paper in the journal *Animal Welfare*

Self archived manuscripts must have attached a CC-BY-NC-ND Licence, (see Creative Commons).

Authors are NOT allowed to self-archive, so as to make available for open access, any version of the paper that has been edited and/or formatted for publication in the Journal *Animal Welfare*.

* The 'accepted version of the manuscript' means the accepted unformatted manuscript as submitted by the author(s), usually with the author's corrections based on referees and editorial comments.

Open Access in developing countries

In pursuit of its charitable objective to promote welfare through education and to make the welfare information published by UFAW accessible to a wide worldwide audience, UFAW has partnered with HINARI a World Health Organisation programme to make *Animal Welfare* available online, free or at very low cost, to staff members and students in qualifying not-for-profit organisations based in developing countries throughout the World. Organisations in these countries able to access the journal include national universities, medical schools (including nursing, pharmacy, public health, and dentistry schools), research institutes, teaching hospitals and healthcare centres, government offices, national medical libraries and local non-governmental organisations (a list is available at this address http://www.research4life.org/institutions/). The journal is also linked through the OARE (Online Access to Research in the Environment) scheme led by the United Nations Environment Programme (UNEP) and the AGORA program (Access to Global Online Resources in Agriculture), set up by the Food and Agriculture Organization of the UN.

Policy on studies involving live animals

Animal Welfare will not include papers based on work that involves unnecessary pain, distress, suffering or lasting harm. Manuscripts describing research involving live animals must include appropriate details, in the methods section, of animals used, housing and feeding, experimental design, experimental procedures, ethical considerations, and licences and approvals under which the work was carried out (*see Materials and methods*).

In preparation of manuscripts describing work on live animals, authors should use the ARRIVE guidelines as a checklist. These guidelines are available at:
http://www.nc3rs.org.uk/downloaddoc.asp?id=1206&page=1357&skin=0

Other restrictions

Material submitted must not have been published or submitted for publication elsewhere. Papers should not normally exceed 10 000 words (c20 pages of the journal including tables, diagrams and references).

Publication of additional/supporting material that is related to, but not part of, the paper

Additional supporting material such as data sets or appendices that are relevant to, but which do not form part of, the paper itself can be submitted for publication at the *Animal Welfare* website. Such additional material (up to a maximum of 20 A4 pages) should be submitted at the same time as the manuscript and in PDF format. Where such additional material is available, reference should be made to this at an appropriate point or points in the text. When the paper is published, the website address of the additional material will be made clear at this point or points.

Review articles

A good review article has the following features:

(1) Originality.
(2) Advances knowledge and original thinking.
(3) Theory-based.
(4) Evidence-based.
(5) Accurate, comprehensive and rigorous.
(6) Provide recommendations for future enquiry.
(7) Stimulates debate.

See **Hagger MS** 2012 What makes a 'good' review article? Some reflections and recommendations. *Health Psychology Review* **6:** 141-146.

It is important that writers of reviews explicitly state in the methods section the methodology used in their review:

- Databases searched
- Search terms
- Any restrictions on the search, eg date limits
- Criteria for inclusion or rejection from the review
- Any further searches, eg use of references in articles found in the initial search.

The following paper provides a good example in the methods section as to how this should be done. **Gilliam MB, and Schwebel DC** 2013 Physical activity in child and adolescent cancer survivors: a review. *Health Psychology Review* **7:** 92-110.

Submission of manuscripts

Papers should be submitted through our ScholarOne Manuscripts site: http://mc04.manuscriptcentral.com/ufaw-aw. Please refer to the section above on Aim and scope of the journal before submitting a paper. The author should keep a copy of all submitted material. All manuscripts must be word processed in Microsoft Word.

The author will be required to confirm that:

- legal and ethical requirements regarding use of animals or collection of data from human subjects have been met, see *Policy on studies involving live animals* and *Other restrictions above,* and also the *Materials and methods* section in *Preparation of manuscripts* below;
- written permission has been obtained to reproduce text, illustrations or data or to quote from published works, and that suitable acknowledgements of source have been made;
- for multi-author papers, all authors have agreed the final text for publication.
- articles will typically be scrutinised by a minimum of two referees before being accepted or rejected and authors are encouraged to suggest and provide the names and contact details of up to three referees suitable for peer reviewing of their manuscript (these may or may not be selected by Section Editors to undertake the peer review).

Style

Papers must be written in the English language. Articles should be written in a style that is readily comprehensible.

Preparation of manuscripts

Authors should consult a recent edition of the journal to familiarise themselves with the journal's conventions on format.

Manuscripts should be word processed in Microsoft Word using Times New Roman font, double-spaced with lines numbered. The pages should be numbered consecutively and securely fixed together. The contents will usually be organised into an Abstract (followed by keywords), Introduction, Materials and methods section (including statistical analyses), Results, Discussion, Conclusion and Animal welfare implications. A running title must be supplied (of no more than 7 words).

Title page

Give the full title *and* running title of the paper and the name(s) of the author(s). For multi-author papers the full e-mail, telephone, fax and postal addresses of the correspondent should be given, plus the addresses of the other authors. The correspondent must be clearly indicated.

Centre the title in bold letters. Name(s) and institutional address(es) of author(s) should be centred under the title in upper and lower case, eg

Advances in the assessment of animal welfare
AN Other
University of Wheathampstead

Abstract

To consist of not more than 250 words. It should outline clearly and concisely the main findings without reference to the text and end in a brief statement on the paper's conclusions and animal welfare implications. This should not contain details of statistical analyses or references (eg P > 0.01).

Keywords

Six keywords should be noted in alphabetical order below the abstract. These should include 'animal welfare' and the common name of the main species involved (where appropriate). The keywords will be used for abstracting and indexing the article.

Materials and methods

The description of the methods should be sufficiently detailed to allow replication of the work. In studies involving animals, provide details of numbers used and of species, strain, age, sex, source and other relevant characters.

In preparation of manuscripts describing work on live animals, authors should use the ARRIVE guidelines as a checklist. These guidelines are available at:
http://www.nc3rs.org.uk/downloaddoc.asp?id=1206&page=1357&skin=0

Full details should be given of experimental design, procedures and testing or observational regimes. Description of the statistical analyses should also be included as a subdivision of the methods section (see recent paper for format). If the animals were kept in captivity, provide relevant details of housing, feeding and management (eg type of housing and environment, diet and feeding regime, group size and composition, and acclimation and routine management procedures).

Where ethical considerations arise (eg if procedures compromise animal welfare or other ethical concerns), these should be addressed in the methods section. Any ethical implications and justifications of the experimental design or procedures should be described; details should be provided of licences or other permissions required for the work (eg from ethical review bodies). Measures undertaken to minimise the adverse welfare impact on animals involved, including choice of sample size, use of pilot tests and predetermined rules for intervention, should be described. The fate of all animals used in the study should be detailed. Steps taken to enhance the welfare of animals involved (eg through environmental enrichment) should also be outlined.

Data should be subjected to appropriate statistical analyses, with the chosen methods clearly described. Relevant references or details of software packages should be cited.

When expressing statistical probabilities, follow the following style: n = 7; ns - not significant; $P < 0.05$, $P = 0.1$, one-tailed $P < 0.01$ (capital, italic P, single space either side of < or = sign); $F_{5,25} = 2.61$; where appropriate, indicate the number of degrees of freedom (as df = 3).

Follow the ARRIVE Guidelines concerning statistics and their presentation (see above).

Animal welfare implications

To be set out at the end of the text as a subdivision of the discussion or conclusion.

References

List at the end of the text in alphabetical and chronological order of authors with the minimum of punctuation. Book and journal titles should be quoted in full, with the original spelling and punctuation, and italicised. For example, American spellings of 'behavior' and 'color' are to be used if they have been published as such. Supply details of editor(s) and name and location of publisher for books and published conferences/symposia. For unpublished proceedings etc supply exact details of title, venue, date, location and sponsoring organisation.

The references must be listed in the following style:

Meyer-Holzapfel M 1968 Abnormal behavior in zoo animals. In: Fox MW (ed) *Abnormal Behavior in Animals* pp 24-38. WB Saunders: Philadelphia, USA

Benham PJF 1982 Social organization and leadership in a grazing herd of suckler cows. *Applied Animal Ethology 9:* 95 (Abstract)

Boudreau PL and Tsuchitani C 1973 *Sensory Neurophysiology.* Van Nostrand Reinhold: New York, USA

Dantzer R, Mormède P and Henry JP 1983 Physiological assessment of adaptation in farm animals. In: Baxter SH, Baxter MR and McCormack JAD (eds) *Farm Animal Housing and Welfare* pp 8-19. Martinus Nijhoff: The Hague, The Netherlands

Duncan IJH 1985 How do fearful birds respond? In: Wegner RM (ed) *Proceedings of the Second European Symposium on Poultry Welfare* pp 96-106. World Poultry Science Association: Celle, Germany

Mitchell MA and Kettlewell PJ 1993 Catching and transport of broiler chickens. In: Savory CJ and Hughes BO (eds) *Fourth European Symposium on Poultry Welfare*, 18-21 September, Edinburgh, UK pp 219-229. Universities Federation for Animal Welfare: Hertfordshire, UK

Eaton P 1987 Hygiene in the animal house. In: Poole TB (ed) *The UFAW Handbook on the Care and Management of Laboratory Animals*, 6th Edition pp 144-158. Longman Scientific & Technical: Harlow, UK

Ross C 1988 The intrinsic rate of natural increase and reproductive effort in primates. *Journal of Zoology 214:* 199-219

Main headings

On a separate line, left-aligned in bold title case, eg

Animal health

Subheadings

On a separate line left-aligned in bold italics, eg

Respiratory disorders

Sub-subheadings

Avoid if possible; otherwise should be on a separate line left-aligned in italics.

Abbreviations

Acronyms should be in full the first time they appear, eg World Health Organisation (WHO). Full stops should not be used in contractions, for example ie etc eg, nor within acronyms. Figure or Table should not be abbreviated.

Footnotes

Footnotes to tables are to be indicated using superscript numbers and placed below the table. Footnotes in the text are not permitted.

Foreign words and phrases

Should be in italics except for common phrases (eg 'post mortem'), amputated phrases (eg 'post hoc') and abbreviations. However, 'et al' should be in italics.

Locations

Give as latitude and longitude (specifying degrees, minutes and seconds).

Measurements

To comply with the abbreviations in the International System of Units (SI).

Numbers

One to nine should be written in words unless they precede units of measurement. Numbers 10 and above should be written as numerals except at the beginning of a sentence. The 24 hour clock should be used for times of day, eg 1400h and, if relevant, corrected to standard local time. Zero should be inserted before the decimal point for values less than one, eg P = 0.05. A space should separate groups of three digits in whole numbers exceeding four digits (100, 1000, 10 000 etc).

References within the text

Cite with minimum punctuation, eg:

- '... carried out by Smith and Jones (1985) ...';
- '... (Smith & Jones 1985)...' ie use an ampersand when reference is in parentheses;
- '... (Smith 1985; Jones 1986; Smythe 1986), ...' ie put two or more references in chronological and then alphabetical order, and separate each author's references by a semi-colon;
- '... (Smith et al 1985)...' ie use et al for three or more authors;
- '... (Smith 1986a, b; 1988)...' ie by an author in the same and in a subsequent year;
- '... (Smith in press)...' ie has been accepted for publication but is not yet published;
- '... (Smith 1980, 1986, 1990; Jones 1981, 1982)...' ie group all references to one author's work together.

For detailing specific points within multi-chapter or lengthy volumes the reference may include the chapter or page numbers, eg (Smith 1987 Ch 7) or (Smith 1987 p 3-4). Citations of personal communications and unpublished data should be avoided if possible. When they have to be used they should include the named source of the personal communication and the date.

- **Check that spellings of authors' names and publication dates in the text and references are consistent.**
- **Ensure that all references in the text appear in the reference section.**
- **Ensure that all references in the reference section are cited in the text.**

Scientific and common names

When first mentioned in the paper, species should be described by the common English name and defined by the full scientific name, eg rabbit (Oryctolagus cuniculus). Thereafter either rabbit or O. cuniculus may be used, preferably the former. Names of genera and species or subspecies should be in italics. Nomenclature for outbred laboratory animals should conform to that recommended by the Committee on Nomenclature, Institute of Laboratory Animal Resources, Washington DC, USA.

Spelling

This should be English and - except for quotations and references - conform to the first entry in the Concise Oxford English Dictionary.

Trade products

Give the brief address from where the product may be obtained eg '...Kong Ball' (supplied by the Company of Animals, Chertsey, Surrey)...'. Denote any T or ® marks required.

Tables

Each table should be typed on a separate sheet and its place in the text indicated. Tables should be numbered with Arabic numerals (eg Table 1, Table 2 etc). Titles should be brief and placed above the table. Titles between tables should be as consistent as possible. Additional information, such as the key or acknowledgement, should be shown below. Wherever possible, tables should be created using the table feature. Tables must be portrait (not landscape) and designed to fit the journal page format.

Figures

Please note that figures must follow the format below.

Figures should not be larger than A4 size, and must be cited in the text at least once.

Figures should be as simple as possible; particularly avoid three-dimensional graphics. There should be no enclosing lines on graphs or keys. Arial font should be used throughout for all text. Axis labels should be in arial 8 point bold throughout and tick labels should be in arial 7 point regular (ie not bold). Decimal points must be full stops and not commas.

Standard error bars should be shown where possible. For data points these extend below and above the point with short horizontal lines denoting the ends. For histograms these extend above each block with a short horizontal line denoting the end.

Figures should also be submitted in a format that allows them to be edited and formatted as per our in-house style. This requires them not to be submitted as TIF files or simply scanned in but to be in Word, Excel or Illustrator files.

Captions (Figure number plus title)

The figures should be numbered consecutively with Arabic numerals and 'Figure' written in full, (eg Figure 1, Figure 2 etc). This should be accompanied by a brief title and a caption that is self-explanatory, needing no reference to the text.

Similar figures should have the same format and similar titles/captions, so they can be easily compared (this also applies to Tables).

Figures that share captions should be marked (a), (b) etc in the top left-hand corner and if they have the same x-axis and/or y-axis measurement it may be possible to share axis labels.

Labels

All axis labels to be in arial 8 point bold. All tick labels to be in arial 7 point regular (ie not bold).

All letters in lower-case except the first letter of the first word.

No full stops after labels and no underlining.

Graph axis headings should include both parameter and unit.

All decimal points should be full stops and not commas.

Système International (SI) units should be used, noted in negative exponent form and in brackets at the end of the heading (as used in the Journal of Zoology; Applied Animal Behaviour Science; Nature), eg 'Corticosterone concentration (ng ml-1)'.

Keys

Keys should be included within the graph in a blank space, preferably at the top right-hand corner (not enclosed in lines).

Only use shadings which are sharp and are easily distinguished from each other. Black, white and greyscale are preferred.

Use large and preferably solid symbols (circles, triangles and squares) for data points.

Photographs

Photographs are welcomed, and should be submitted as either GIF, TIF, BMP or JPEG images along with the original submission. A bar scale with relevant units should be shown, or the magnification indicated where relevant. Any photographs that would be suitable for the cover should also be submitted.

Authors wishing to publish coloured prints should contact the editorial office to discuss charges.

Permissions

Any figures that have been taken directly from other manuscripts must have copyright permission from both the author and the publisher, or only the author if the material is unpublished. This permission must be submitted in writing with the necessary signatures when the manuscript is submitted.

Letters

Readers are invited to submit and respond to observations and opinions on topical animal welfare issues, as well as on material published in the

journal. Publication will be subject to editorial discretion and the journal reserves the right to edit for clarity and style.

Peer review

The Editor, or appropriate Section Editor, will carry out an initial assessment of submissions regarding their suitability for the journal. Suitable papers will then typically be sent to a minimum of two independent expert reviewers to assess the scientific quality and also any ethical issues raised by the paper. The journal uses a single blind review process. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final.

Proofs

These are supplied in advance of publication by e-mail and must be returned by the specified date; any delay in returning the proof may result in the paper being held over until a subsequent issue. Only essential corrections should be made. Charges may be levied for authors' errors.

Copyright

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Conflicts of Interest

Authors must disclose any conflicts of interest that might either influence or be thought to influence the submitted work. These may include employment, ownership of stocks, grants or patients, any financial benefit, or personal links. Reported conflicts of interest will be considered by the editorial team when they make a decision about publication, and the Editor may require their publication with the paper as a condition of publication.

Section Editors

Companion animals other than Equines

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School of Veterinary Science
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Email: xavier.manteca@uab.cat

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Canada V6T 1Z6
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Farmed fish

ANEXO 4 – Normas do periódico *Applied Animal Behaviour Science*

APPLIED ANIMAL BEHAVIOUR SCIENCE

An international journal reporting on the application of ethology to animals managed by humans.

AUTHOR INFORMATION PACK

TABLE OF CONTENTS

ISSN: 0168-1591

DESCRIPTION

This journal publishes relevant information on the **behaviour** of **domesticated** and **utilized animals**.

Topics covered include:Behaviour of farm, **zoo** and laboratory animals in relation to **animal management** and **welfare**Behaviour of **companion animals** in relation to **behavioural problems**, for example, in relation to the training of dogs for different purposes, in relation to behavioural problemsStudies of the behaviour of **wild animals** when these studies are relevant from an applied perspective, for example in relation to **wildlife management**, pest management or nature **conservation**Methodological studies within relevant fields

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AUDIENCE

Animal Ethologists, Animal Scientists, Zoologists.

IMPACT FACTOR

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2. Review Articles
3. Letters to the Editor
4. Book Reviews

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Dr. Mark Farnworth
e-mail: mark.farnworth@plymouth.ac.uk

Dr. Bas Rodenburg
e-mail: bas.rodenburg@wur.nl

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M. Mendl
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Langford House
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Authors may also wish to refer to the ethical guidelines published on the website of the International Society for Applied Ethology http://www.applied-ethology.org/ethicalguidelines.htm, or read the following article: Sherwin, C.M., Christiansen, S.B., Duncan, I.J., Erhard, H., Lay, D., Mench, J., O'Connor, C., and Petherick, C. (2003), 'Guidelines for the ethical use of animals in applied animal behaviour research', Applied Animal Behaviour Science, 81: 291-305.
Unnecessary cruelty in animal experimentation is not acceptable.

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Reference to a chapter in an edited book:
Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith , R.Z. (Eds.), Introduction to the Electronic Age. E-Publishing Inc., New York, pp. 281–304.
Reference to a website:
Cancer Research UK, 1975. Cancer statistics reports for the UK. http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ (accessed 13 March 2003).
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.

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ANEXO 5 – Feiras de adoções realizadas durante os anos de 2017 e 2018

Tabela 1. Evento ou feira realizada, data de realização, local e o público total presente no local dos eventos/feiras realizados ao longo do ano de 2017 e 2018.

Evento/Feira realizado	Data de realização	Local	Público visitante (pessoas)
Palestra cão equilibrado	01/08/2017	PUCPR	60
Palestra sobre as diferentes áreas de atuação do Médico Veterinário	14/09/2017	PUCPR	80
Desfile com 10 cães do projeto e divulgação do projeto	24/09/2017	Estádio de Futebol Couto Pereira	25.000
Benção dos animais e feira de adoção	04/10/2017	PUCPR	1.200
Feira de adoção	07/10/2017	Exclusive Heaven crematório de animais	120
Feira de adoção	21/10/2017	Vetsan	100
Palestra de visita no canil da polícia Bope	08/11/2017	Bope	26
Feira de adoção	12/11/2017	Mercadoteca	1.500
Feira de adoção	25/11/2017	Vetsan	100
Feira de adoção Natau Animau	16/12/2017	HiperZoo	600
Feira de adoção	13/01/2018	HiperZoo	400
Feira de adoção	20/01/2018	HiperZoo	700
Feira de adoção	27/01/2018	HiperZoo	500
Feira de adoção	03/02/2018	HiperZoo	650
Feira de adoção	17/02/2018	HiperZoo	250
Feira de adoção	24/02/2018	HiperZoo	400
Feira de adoção	03/03/2018	HiperZoo	450
Feira de adoção	10/03/2018	HiperZoo	500
Feira de adoção	17/03/2018	Vetsan	100
Feira de adoção	24/03/2018	HiperZoo	500
Feira de adoção	31/03/2018	HiperZoo	500
Feira de adoção	07/04/2018	Clínica Veterinária São Chiquinho	50

ANEXO 6 – Reportagens realizadas durante o ano de 2017

Tabela 2. Título da reportagem, data de veiculação, site e link de acesso das reportagens realizadas ao longo do ano de 2017 sobre o projeto e as feiras de adoções.

Título da reportagem	Data de veiculação	Site	Link de acesso
Cães irão a estádio para cativar alguém para adotá-los	21/09/2017	Bem Paraná	https://www.bemparana.com.br/noticia/caes-irao-a-estadio-para-cativar-alguem-para-adota-los-#.XbNXdC3OrOR
Coritiba Retribui incentiva a adoção de animais	21/09/2017	Coritiba Foot Ball Club	http://coritiba.com.br/artigo/31476/coritiba_retribui_incentiva_a_adocao_de_animais
Jogo do Coritiba terá desfile de cachorros para adoção	21/09/2017	Gazeta do Povo	https://www.gazetadopovo.com.br/vozes/arquibancada-virtual/jogo-coritiba-adocao-de-cachorros/
Jogo do Coritiba terá desfile de cães para adoção no domingo	22/09/2017	Paraná Portal	https://paranaportal.uol.com.br/esportes/jogo-do-coritiba-tera-desfile-de-cachorros-para-adocao-no-domingo-111/
PUC Paraná promove feira de adoção de cães no Couto Pereira	22/09/2017	Jornal da CBN Curitiba – 2ª edição (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=46821041&c=22/09/2017
Coxa incentiva adoção de animais	24/09/2017	Coritiba Foot Ball Club	http://www.coritiba.com.br/artigo/31495/coxa_incentiva_adocao_de_animais
Evento promove adoção de animais de estimação	24/09/2017	Jornal CBN Curitiba – 1ª edição (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=46856812&c=24/09/2017
Três cães ganham novo lar com ação no Couto Pereira. Saiba como adotar	26/09/2017	Paraná Portal	https://paranaportal.uol.com.br/mundo-melhor/tres-caes-ganham-novo-lar-com-acao-no-couto-pereira-saiba-como-adotar-444/

PUCPR promove bênção de animais e feira de adoção de pets	03/10/2017	Bem Paraná	https://www.bemparana.com.br/noticia/pucpr-promove-bencao-de-animais-e-feira-de-adocao-de-pets--#.XbNVVS3OrOQ
PUCPR promove bênção de animais e feira de adoção de pets	03/10/17	Bem Paraná (PR)	https://www.bemparana.com.br/noticia/pucpr-promove-bencao-de-animais-e-feira-de-adocao-de-pets--#.XbNgiy3OrOQ
Coritiba Retribui apoia adoção de animais	04/10/2017	Coritiba Foot Ball Club	http://coritiba.com.br/artigo/31550/coritiba_retribui_apoia_adocao_de_animais
Animais ganham bênção no dia de São Francisco de Assis em Curitiba	04/10/2017	RIC MAIS – R7 (SP) – Últimas Notícias	https://noticias.r7.com/ric-mais/animais-ganham-bencao-no-dia-de-sao-francisco-de-assis-em-curitiba-04102017
PUCPR promove bênção de animais e feira de adoção	04/10/2017	Jornal CBN Curitiba – Online (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47103243&c=04/10/2017
Animais ganham bênção em comemoração ao Dia de São Francisco de Assis em Curitiba	04/10/2017	G1 – Paraná RPC	https://g1.globo.com/pr/parana/noticia/animais-ganham-bencao-em-comemoracao-ao-dia-de-sao-francisco-de-assis-em-curitiba.ghtml
Dia de São Francisco terá bênção aos animais em Curitiba	04/10/2017	Paraná Portal	https://paranaportal.uol.com.br/cidades/curitiba-rmc-litoral/animais-em-curitiba/
Animais serão abençoados no dia de São Francisco de Assis	04/10/2017	Massa News (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47044854&c=04/10/2017
PUC-PR benze animais	04/10/2017	Jornal É-Paraná – 1ª Edição (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47050783&c=04/10/2017

Dia do Padroeiro dos animais é marcada por benção dos pets em Curitiba	04/10/2017	Band Mulher (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47054533&c=04/10/2017
Animais recebem benção no dia de São Francisco de Assis	04/10/2017	Band Cidade – 1ª Edição (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47057927&c=04/10/2017
Benção para bichos no dia de São Francisco de Assis	04/10/2017	Brasil Urgente (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47062132&c=04/10/2017
Padres promovem a bênção dos animais na PUC-PR	04/10/2017	Bem Paraná (PR)	https://www.bemparana.com.br/noticia/padres-promovem-a-bencao-dos-animais-na-puc-pr#.XbNgZC3OrOQ
Fé na Vida | Transformação e Mudanças	04/10/2017	TV Evangelizar	https://www.youtube.com/watch?v=CWw92E-dfGE&index=3&list=PLdqSolo90Oz8owxEcaNIIJpRgFnQQHB3W
Adoção de animais	5/10/2017	TV Coxa	https://www.youtube.com/watch?v=FWngg2dzCc0&feature=youtu.be
Animais de estimação recebem bênção no pátio da PUC-PR	05/10/2017	Jornal Bem Paraná (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47065085&c=05/10/2017
Padres promovem a bênção dos animais na PUC-PR	05/10/2017	Jornal Bem Paraná (PR)	http://www.mccomunicacao.com.br/mc/services/clippingm/noticia_emailv2.asp?a=GRUPO+MARISTA&b=47065389&c=05/10/2017