



Research

Behavioral evaluations of shelter dogs: Literature review, perspectives, and follow-up within the European member states's legislation with emphasis on the Belgian situation



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ABSTRACT

The purpose of this study was to review dog behavior evaluation methods currently used in animal shelter dogs in the European Union (EU). (1) A literature review was carried out to examine findings, outline strengths, and shortcomings of currently used behavioral evaluations and identify supplementary areas of research; (2) the effect of existing literature on EU Member States' (MS) legislation on shelters was questioned; and the approach to the evaluation and adoption process in 1 specific MS, Belgium, was detailed at shelter level, in an attempt to highlight the on-field situation. The methodology applied consisted of a review of all ScienceDirect peer-reviewed articles examining behavioral evaluations of shelter dogs as well as e-mail and phone surveys within 21 MS and 51 Belgian shelters. The results show that to date, according to the quality test criteria (Martin and Bateson, 2007), only 1 validated behavioral evaluation (Valsecchi et al., 2011) has been identified. Although the Treaty of Amsterdam (1999) recognizes Animal Welfare, it does not offer a legal basis for legislation at EU level regarding behavioral evaluations of shelter dogs. In addition, poor legislation and lack of standardization were observed at MS level. The results of the Belgian survey showed a discrepancy between the field reality and the current scientific knowledge. In the field, financial restrictions, lack of time, and a moderate confidence in behavioral evaluations were observed. Despite this, there is a demand for a validated behavioral evaluation and a risk assessment tool for shelter dogs. This study identifies that at scientific, EU, and national levels, concrete measures must be taken to support the situation regarding behavioral evaluations of shelter dogs.

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Introduction

The primary goals of many shelters are to find objective ways to measure and predict temperament and behavioral adoptability of dogs (Christensen et al., 2007) and therefore, to reduce the high return rate of shelter dogs (Stephen and Ledger, 2007; Diesel et al., 2008b; Luescher and Medlock, 2009).

However, dogs adopted from shelters can still present a potential risk to their new family and environment because an objective behavioral assessment has not been performed. Excitability, high-energy levels, or aggression directed toward humans and other dogs are frequently associated with relinquishment (Duffy et al., 2014). When dogs exhibiting these behaviors are not correctly assessed at the shelter, the risk exists that the adopted dog will cause harm to other humans or animals. When these incidents occur, they are frequently covered in media and as a result are becoming a societal problem.

During the last 30 years, a large volume of research has been undertaken in the field of canine behavioral testing (for a review, see Jones and Gosling, 2005; Diederich and Giffroy, 2006; Taylor and Mills, 2006). Nevertheless, there have never been so many

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discrepancies in the way behavioral evaluations are applied in practice. Practical and critical questions are raised concerning the behavior assessment procedures in shelters. Questions include “How can we create a successful match with the potential adopters?” “Are tests in fact necessary?” “How can scientific tests be applied in shelters?” “Does a single behavioral evaluation offer sufficient information to make a correct evaluation?” “Should adoption success rate be improved with behavioral evaluations?” and “Would the approach of a “risk assessment tool” be more appropriate?” (De Meester et al., 2011).

Several authors state that standardized test procedures are required for assessing canine behavior (Jones and Gosling, 2005; Diederich and Giffroy, 2006; Taylor and Mills, 2006). Marston and Bennett (2003) state that effective standardized tests could provide an objective and quantifiable basis. Given the limited resources available to most shelters, testing programs must be feasible for practical use: they should be straightforward, easy to administer, and relevant to the situations a dog is likely to experience after adoption. From a scientific point of view and to ensure that the tests have predictive value, they must be validated and meet the following criteria (Taylor and Mills, 2006):

1. Standardization—the extent to which the test protocol ensures minimization of variability between tests.
2. Reliability—the degree to which the test scores are free from errors of measurement (APA, 1985: intraobserver reliability, interobserver reliability, test–retest reliability, internal consistency, and unidimensionality). At least 4 related factors determine how good a measure is: precision (how free are the measurements from random errors?), sensitivity (are small changes in the true value invariably reflected by changes in the measured value?), resolution (what is the smallest change in the true value that can be detected?), and consistency (do repeated measurements of the same thing produce highly correlated results?) (Martin and Bateson, 2007; Bertrand et al., 2010).
3. Validity—the appropriateness, meaningfulness, and usefulness of the specific inferences made from the test results (APA, 1985: content validity, construct validity, and criterion validity). To decide whether a measure is valid, at least 3 separate points must be considered: accuracy (is the measurement process unbiased, so that measured values correspond with the true values?), specificity (to what extent does the measure describe what it is supposed to describe?), and scientific validity (to what extent does the measurement process reflect the phenomena being studied and the particular questions being asked?) (Martin and Bateson, 2007). Validity also incorporates sensitivity (a measure of the test accuracy in predicting true positives) and specificity (a measure of test accuracy in predicting the true negatives) (Mausner and Kramer, 1985).

In the framework of the European Union (EU) strategy for the protection and welfare of animals 2012–2015, supported by calls of the European Parliament toward the Commission (about breeding and trade of dogs and cats as well as about protection of pets and strays), the objectives of this article are to review the literature on behavioral evaluations in shelters, with focus on their validation to highlight their strengths and weaknesses and to identify new/complementary areas of research; to examine the penetration rate of the literature into the EU Member States' (MS) legislation on animal shelters; and to research how 1 MS, namely Belgium, implements the evaluation and adoption process of dogs, at shelter level, to collect on-field illustration of the situation.

Materials and methods

Review of the scientific literature

Authors searched for all articles in the ScienceDirect databases that examined behavioral evaluations of shelter dogs. The review included only those studies in the published empirical research literature (Table 1). Methods frequently used and well regarded in an applied context of behavioral evaluations, but for which data are not yet publicly available, have not been included.

EU legislation on animal shelters

An e-mail survey consisting of 6 questions (Table 2) was sent to the Animal Welfare State's Delegate in the, at that time, 27 EU MS. All answers were received by e-mail between April 1, 2012 and July 15, 2012.

Use of behavior assessment tools at Belgian shelters

A survey of 17 questions (Table 3) was conducted with Belgian shelters ($n = 51$, 50% of the Belgian shelters). The questionnaire was built based on the Belgian Legislation and the results of the bibliographical review. It was completed by phone between 1st and 15th of August 2012. It took on average 45 minutes to administer the questionnaire that was hosted on a survey platform of the UNamur (Claroline 18).

Analysis of the results

Descriptive analysis of the survey's responses has been conducted, and the proportions of the responses have been expressed in percentages of the respondents. Chi-square comparisons have then been computed where appropriate.

Results

Review of the literature

As mentioned by Marston and Bennett (2003) to establish international best practices in postadoption of relinquished dogs, the first step that should be undertaken is a review of the temperament assessments used in various shelters. There is a general need for standardization of assessments to provide the best chances of a successful adoption (Diesel et al., 2008a). The presentation of this review of the literature is organized into 3 sections: measures undertaken and data collection about dogs' behavior before entering the shelter (Section 1); at the shelter (Section 2); and the factors related to improving the rehoming success among shelter dogs after adoption (Section 3).

Section 1

Few preshelter assessments have been designed, and no study has been conducted where the home of the relinquishing owner was visited. The existing studies used questionnaires conducted at the shelter (Stephen and Ledger, 2007; Duffy et al., 2014; Table 1). These questionnaires were completed by both relinquishing owners on surrender and new owners up to 6 weeks (Stephen and Ledger, 2007) or 8 weeks (Duffy et al., 2014) of postadoption. Their aim was to predict behavioral problems in shelter dogs post-adoption. The tested traits varied between 20 (Stephen and Ledger, 2007) up to 36 traits (Duffy et al., 2014). Both questionnaires were partially validated (Stephen and Ledger, 2007: test–retest, predictive validity; Duffy et al., 2014: internal reliability and validity). They showed that preshelter information can be used to

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