TITLE: Reporting of suspected dog fighting to the police, RSPCA and equivalents by veterinary professionals in the UK

AUTHORS: Milroy, K; Whiting, M; Abeyesinghe, S

JOURNAL TITLE: Veterinary Record

PUBLISHER: BMJ Publishing Group

PUBLICATION DATE: 24 October 2018 (online)

DOI: 10.1136/vr.104753

Reporting of suspected dog fighting to the police, RSPCA and equivalents by veterinary professionals in the UK

Kate Milroy[1], Martin Whiting[2] and Siobhan Abeyesinghe[2]

[1]Royal Veterinary College, University of London, North Mymms, Hatfield, AL9 7TA, UK

[2]Animal Welfare Science & Ethics, Royal Veterinary College, University of London, North Mymms, Hatfield, AL9 7TA, UK

Correspondence: kate@katemilroy.vet

Abstract

Dog fighting became unlawful in the UK in 1835, yet it continues today (as reported by the Royal Society for the Prevention of Cruelty to Animals [RSPCA] and Crown Prosecution Service [CPS]), albeit with an unknown prevalence. We used an online questionnaire to (i) determine the occurrence of dogs suspected of use in fighting in UK veterinary practices; (ii) explore relative reporting of incidents to police, RSPCA or equivalent charity by Registered Veterinary Nurses (RVNs) and veterinarians; and (iii) determine factors influencing reporting. Emails (n=2,493) containing the questionnaire were sent to UK veterinary practices: 423 questionnaires (159 by RVNs, 264 by veterinarians) were completed. One or more cases of dog fighting were suspected by 14.42% of respondents in 2015; 182 cases suspected in total. Proportionately more RVNs suspected dog fighting than veterinarians (p=0.0009). Thirty two respondents (7.58%, n=422) claimed to have reported suspicions to the police, the RSPCA or equivalent charity previously; 59 respondents (14.15%) had previously chosen not to. Reasons not to report included: uncertainty of illegal activity (81.36%), fear of the client not returning to the practice (35.59%) and concerns regarding client confidentiality (22.03%). Further work is required to address under-reporting of dog fighting by veterinary professionals.

[199 words]

Introduction

Dog fighting is the intentional placement of two or more dogs together for the purpose of fighting (Animal Welfare Act 2006, S8) and can be further defined as the non-accidental attack of one or more dogs on one or more other dogs, often accompanied by the exchange of money by owners and spectators, incorporating a range of offences in law (adapted from Harding 2012 and RSPCA 2017). Dog fighting is associated with multiple welfare concerns. Injuries experienced by fighting dogs typically include deep punctures, lacerations, fractures and de-gloving wounds of the legs, with the presence of wounds and scars at various stages of healing being a key identifying factor (Merck 2012). The training process for high level fights can include the chasing, attacking and killing of bait animals (Tiplady 2013); these are predominantly dogs and cats that may have been stolen, stray, advertised on the internet as "free to good home" or wild animals that are taken by dog fighters for use as practice material (Harding 2012). Surviving bait animals have later been found abandoned and injured and constitute a further welfare concern with the practice (Dinnage et al., 2004, Glendinning 2014, Anthony 2016). The electrocution, hanging and drowning of dogs has also been documented as a means of culling dogs that are unsuccessful in fights or suffer irreparable injury (Harding and Nurse 2015, Animal Legal Defense Fund 2017).

The prevalence of dog fighting in the UK is unpublished, however, in 2015 the UK Royal Society for the Prevention of Cruelty to Animals (RSPCA) received 506 complaint calls about suspected dog fighting activity involving 1,389 dogs and made 28 related prosecutions (Lawson 2017). Despite its clear ongoing presence in the UK, the availability of peer-reviewed literature on dog fighting is limited and primarily represented by international research.

It has been reported that canine recipients of non-accidental injury (NAI; the intentional harm of an animal [McGuinness et al., 2005]) in the UK present to veterinary practice (Munro and Thrusfield 2001). Thus, as a type of NAI, injuries acquired in relation to dog fighting may present to UK veterinary clinics. Where veterinary professionals suspect dog fighting, they are chiefly encouraged to report suspicions to the police (Animal Welfare Act 2006), but may

62 also contact welfare charities (RSPCA or equivalents[1]) or the Local Authority Animal
63 Welfare Officer (Northern Ireland) (RCVS 2018). Upon receiving a report of serious animal
64 abuse such as dog fighting, the police will launch an investigation and should sufficient
65 evidence be obtained to support the suspicion, the case will be handed to the CPS for
66 prosecution of offenders. The police may also liaise with the RSPCA for assistance during the
67 investigation (Wooler 2014); the RSPCA has a Special Operations Unit (SOU) that focuses
68 on complex organised animal crime such as dog fighting and may also prosecute offenders
69 (Wooler 2014). Prosecution may lead to conviction which can result in financial penalties,
70 imprisonment and bans from keeping animals (Wooler 2014). Therefore, by appropriately
71 reporting suspected cases of dog fighting, veterinary professionals could assist in identifying
72 and prosecuting the human perpetrators and benefit the individual animals by their removal
73 from the situation. However, it has been suggested that NAI cases are greatly under-reported
74 by veterinarians to appropriate authorities (the police in the UK), or to welfare charities such
75 as the RSPCA (Tong 2016). Although evidence is lacking, reasons for this have been
76 postulated by various authors (Table 1) and can be categorised into uncertainty in identifying
77 cases and barriers to reporting suspected cases. Tong (2016) suggested difficulty in
78 identifying NAI as a major reason for under-reporting, which could be underpinned by
79 inexperience. Conversely, more experienced veterinary staff may be less likely to report
80 suspicions, as reprisals, such as loss of practice income or legal action (Morgan *et al.,* 2007)
81 could have greater significance to those with more professional responsibility. To date, a
82 significant omission in the literature is reporting of NAI of any type by veterinary nurses or
83 equivalents.

84

Reasons theorised for the under-reporting of animal abuse	**Authors**
Problems in identifying non-accidental injury	Tong 2016
A lack of formal guidelines on reporting	Tong 2016
A lack of legal protection from reprisals	Tong 2016
Belief that abuse is not seen in practice	Yoffe-Sharp and Loar 2009
A lack of understanding of the process of reporting	Patronek 1997; Yoffe-Sharp and Loar 2009

[1] The RSPCA operate in England and Wales; the Scottish equivalent is the Scottish Society for Prevention of Cruelty to Animals (SSPCA) and the Northern Irish equivalent is the Ulster Society for the Prevention of Cruelty to Animals (USPCA)

Concerns about client-vet relationship breakdown	Arkow 1994, Yoffe-Sharp and Loar 2009
Concerns that removal of one victim will result in simple replacement with a new victim	Morgan et al., 2007
Fear of legal action	Arkow 1994, Patronek 1997, Morgan et al., 2007
Fear of loss of income	Patronek 1997, Morgan et al., 2007
Fear of reprisals	Arkow 1994, Morgan et al., 2007
Concerns regarding the difficulty of prosecution	Morgan et al., 2007
A belief that it is not possible or appropriate to get involved	McGuinness *et al*., 2005
Fear for the safety of the victim	Arkow 1994
Belief that no action will be taken	Arkow 1994

Table 1: Reasons suggested in literature as explanations for under-reporting of any type of NAI by veterinarians.

Further information on whether cases of dog fighting are suspected and if/how suspected cases are reported within veterinary practice could aid in understanding of the occurrence of dog fighting in the UK and support improvements in the identification and reporting of cases. The aims of this study were therefore to investigate suspicions and reporting of dog fighting by UK veterinary professionals (both veterinarians and Registered Veterinary Nurses [RVNs]) to the police or to welfare charities (RSPCA, SSPCA, USPCA), and to provide evidence to support factors previously suggested to influence whether or not veterinary professionals report. We hypothesised that; (1) Veterinary professionals are more likely to *suspect* dog fighting has occurred with greater experience; (2) Veterinary professionals with greater experience are less likely to *report* suspicions of dog fighting to authorities; (3) Veterinarians and RVNs are equally likely to *suspect* and *report* dog fighting.

Materials and Methods

Questionnaire design

An anonymous online questionnaire, approved by Royal Veterinary College Ethics Committee (URN 2016 1559), was created in SurveyMonkey™ (Appendix I). An introductory paragraph explained the study and indicated that submission would be taken as consent to use the data supplied in this context. Exclusion questions allowed removal of participants other than veterinarians and RVNs who worked with dogs in their professional capacity during 2015 in the UK. A number of additional questions established respondent demographics, experience (years working) and their practice type and location (city, village etc.).

Questions regarding dog fighting focussed on the calendar year preceding the year of survey distribution to minimise errors associated with long-term memory and were presented in three sections:

1) Suspicions of involvement in dog fighting by dogs and clients seen in 2015;
2) Reporting of suspected cases of dog fighting seen in 2015 to the relevant authorities and views on this;
3) Choice not to report suspicions and views on deterrents to reporting.

Question formats were primarily multiple-choice, allowing for "other" to be specified using open text comments and open text for those requiring numerical answers. Questions were worded to make explicit whether only situations that applied to the respondents' direct experience should be selected or (for section 3) when respondents should select situations they felt would influence them in a hypothetical situation. A free text comment box at the end allowed further comments to be made. Pilot testing for readability was performed prior to distribution.

Questionnaire distribution

Questionnaire responses were collected between August and November 2016. Respondents were recruited via social media (online forums including Facebook™ and Twitter™), a letter in the Veterinary Record (Ryder 2016) and by directly emailing all veterinary practices that specified that they treated dogs (2,490) or appeared to be a small or mixed animal practice (89) in the RCVS "find a vet" database (RCVS 2016). An introductory letter explained the need for responses from veterinarians and RVNs, irrespective of whether they had ever suspected dog fighting, and provided the web link to the questionnaire. Two reminder emails, sent approximately one and three months after the initial email, to encourage completion followed up the initial 2,493 successful deliveries.

Data analysis

A total of 514 questionnaires were returned. Prior to analysis, data were cleaned in Microsoft Excel 2010, to remove questionnaires that were grossly incomplete, those not from veterinarians or RVNs, and those who had not worked with dogs in their professional capacity during 2015. This left 423 useable questionnaires; some partially completed such that total numbers of contributing respondents varied between questions.

GraphPad Prism 7 was used for statistical analysis. Data were not normally distributed, consequently medians and ranges are reported descriptively and non-parametric analyses were used. The modified Wald method was used to calculate confidence intervals (CI). Chi-squared and Fishers Exact tests were used to test for respective relationships between categorical outcome variables: whether or not cases of dog fighting had been suspected (hereafter suspicions of [yes/no]), whether or not a report of dog fighting had been made (yes/no) and whether or not a choice *no*t to report a suspicion of dog fighting had been made (hereafter choice not to report [yes/no]); and the categorical explanatory variables: age (collapsed into the categories: ≤ 30, 31-40, 41-50, ≥ 51 years old), location (town, city, village/rural area), type of practice (independent small animal, small animal chain, mixed animal, small animal referral, charity, other) and profession (veterinarian, RVN). Mann-Whitney and Kruskal-Wallis tests were used to determine whether with duration of experience (years) altered respectively suspicions of (yes/no), number of cases suspected (none/one or more) and choice not to report (yes/no). A Spearman's rank correlation was used to assess whether the number of cases suspected was correlated with number of years working.

Thematic analysis of open text responses associated with multiple choice "other" selections and the final free text comment box was conducted; where appropriate, responses were re-allocated into the existing question categories, otherwise new categories were established. Clear misinterpretations of questions and open text responses that were provided by only one respondent and did not fit themes were excluded.

Results

168 Of the 423 respondents, 264 (62.4%) were veterinarians and 159 (37.6%) were RVNs, all of
169 whom had been working in UK veterinary practice in 2015. The majority of respondents were
170 under 40 years old (71%), living in a town or city and working in independent or chain small
171 animal practice, with a median of 9 years' experience (Table 2).

172

Variable		**Veterinarians n=264**	**RVNs n=159**	**Total n=423**
Age (years)	≤ 30	81 (30.6%)	92 (57.9%)	173 (40.9%)
	31-40	79 (29.9%)	48 (30.2%)	127 (30.0%)
	41-50	45 (17.0%)	17 (10.7%)	62 (14.6%)
	≥ 51	57 (21.6%)	2 (0.01%)	59 (13.9%)
	No answer	2 (0.8%)	0 (0.00%)	2 (0.5%)
Practice location	Town	129 (48.9%)	80 (50.3%)	209 (49.4%)
	City	61 (23.1%)	50 (31.4%)	111 (26.2%)
	Village/Rural Area	73 (27.7%)	25 (15.7%)	98 (23.2%)
	No answer	1 (0.4%)	4 (2.5%)	5 (1.2%)
Type of practice	Independent Small Animal	141 (53.4%)	68 (42.8%)	209 (49.4%)
	Small Animal Chain	52 (19.7%)	46 (28.9%)	98 (23.2%)
	Mixed Animal	44 (16.7%)	12 (7.5%)	56 (13.2%)
	Small Animal Referral	16 (6.1%)	22 (13.8%)	38 (9.0%)
	Charity	7 (2.7%)	9 (5.7%)	16 (3.8%)
	Other	4 (1.5%)	2 (1.3%)	6 (1.4%)
Experience (years)	Minimum	1	1	1
	Maximum	46	38	46
	Median (inter-quartile range)	12 (17)	6 (8)	9 (13)

173 **Table 2: Respondent demographics; Numbers (percentages) of respondents in each**
174 **explanatory variable category, except experience, are presented in rows for each**
175 **profession and total respondent sample in columns.**

176

177 Suspecting cases of dog fighting

178 14.4% of all respondents suspected at least one case of dog fighting in 2015; a total of 182
179 dogs at a ratio of one suspected case of dog fighting per every 2.3 respondents (approximately
180 0.43 cases per respondent; n =423). Figure 1 shows percentage of respondents who suspected
181 at least one dog fighting case in 2015, by profession: veterinarians were approximately 60%
182 less likely to suspect a case of dog fighting than RVNs (N_{total} = 61, χ^2= 11.9, df = 1, p=0.0009,
183 OR=0.387, 95% CI=0.2261-0.6694). Of the 264 respondent veterinarians, 26 suspected a total
184 of 78 cases (median [range] = 2[1-10] per respondent) of dog fighting in 2015, averaging one
185 case for every 3.33 veterinarian respondents. Of the 159 RVNs, 35 suspected one or more
186 cases of dog fighting in 2015, totalling 104 dogs (median [range] = 2[1-10] per respondent)
187 and averaging one case per every 1.53 RVN respondents.

188

189 [INSERT FIGURE ONE]

190

191 No associations between whether or not respondents suspected dog fighting in 2015 and age,
192 practice location or number of years working in the profession were found for either
193 veterinarians (n=258-263, χ2s < 3.89, ps > 0.1432) or RVNs (n=157-159, χ2s < 1.00, ps >
194 0.215). Neither was there any correlation between the number of dogs veterinarians or RVNs
195 suspected and their years' experience, although this was close to significant for the former
196 (veterinarians: n=25, R=0.3874, p=0.0557; RVNs: n=33, R=0.2216, p=0.2153).

197 Of 66 respondents who provided free text further comments at the end of the questionnaire,
198 18.2% did not believe that dogs involved in fighting were taken to veterinary practices, 13.6%
199 did not believe that fighting occurred in their area/practice/clientele and 7.6% believed they
200 had never encountered any dogs involved in fighting.

201

202 Reporting of suspected cases

203 Of 422 respondents, 32 (7.58%, 95% CI = 5.39% to 10.54%) had previously reported one or
204 more suspicions of dog fighting to the police, RSPCA or equivalent charities. There was no
205 significant difference in the proportion of RVNs that had previously reported one or more
206 suspicions (n=17/159) compared to veterinarians (n=15/264, p=0.0861). Of the 66
207 respondents providing free text comments at the end of the questionnaire, 12.1% said they
208 would report any suspicion.

209 Of 417 respondents, 14.15% (n=59, 95% CI = 11.11% to 17.84%) stated they had previously
210 *chosen not to report* one or more suspicions of dog fighting in the past (Figure 2); the most
211 frequently cited reason was uncertainty in identifying deliberate dog fighting (81.4%
212 n=48/59).

213

214 [INSERT FIGURE TWO]

215

216 There was no significant difference in the *choice not to report* suspicions by RVNs
217 (n=26/157, 16.56%, 95% CI = 11.51% to 23.21%) compared to veterinarians (33/260,
218 12.69%, 95% CI = 9.15% to 17.32%, p=0.3107). There was no effect of experience on *choice*
219 *not to report* a suspicion for either profession (veterinarians: n=254, p=0.4472; RVNs: n=157,
220 p=0.1440).

221

222 When specifically asked about deterrents to reporting suspicions, uncertainty about the
223 presence of activity (40.43% n=171/423), concerns about client confidentiality (23.40%,
224 n=99/423) and lack of knowledge of how to report (19.15% n=81/423) were the most
225 frequently cited across all respondents, irrespective of profession (Table 3). Although not
226 formally tested due to small numbers, noticeably larger percentages of RVNs cited advice
227 from their boss or colleagues not to report than did veterinarians. When asked what would
228 encourage reporting of suspected dog fighting, provision of clear guidance or protocols was
229 the most popular suggestion made by respondents (12.8%, Table 4).

230

Deterrents to reporting suspicions of dog fighting stated by respondents	**Number respondents (percentage of respondent category)**		
	Veterinarians n=254	**RVNs n=154**	**Total n=398**
I wasn't certain that illegal activity was occurring (/worried about accusing an innocent client*)	120 (47.3%)	55 (38.2%)	175 (44.0%)
I don't think anything would at all deter me	91 (35.8%)	44 (30.6%)	135 (33.9%)

I didn't want to break client confidentiality	65 (25.6%)	34 (23.6%)	99 (24.9%)
I did not know how to report	51 (20.1%)	30 (20.8%)	81 (20.4%)
My boss advised me not to	26 (10.2%)	48 (33.3%)	74 (18.6%)
I didn't want the client to stop bringing dogs into the clinic	49 (19.3%)	19 (13.2%)	68 (17.1%)
I didn't want the client to notify others that my clinic reports	19 (7.5%)	16 (11.1%)	35 (8.8%)
I did not want to risk having to go to court	20 (7.9%)	8 (5.6%)	28 (7.0%)
I previously had negative experiences when reporting	14 (5.5%)	10 (6.9%)	24 (6.0%)
I thought reporting would be difficult	18 (7.1%)	6 (4.2%)	24 (6.0%)
My colleague/s advised me not to	8 (3.1%)	15 (10.4%)	23 (5.8%)
I did not believe in the worth of the reporting and/or prosecuting system *	10 (3.9%)	0 (0.0%)	10 (2.5%)
I was concerned about dangerous repercussions from client *	7 (2.8%)	2 (1.4%)	9 (2.3%)
I thought reporting would take too long	5 (2.0%)	0 (0.0%)	5 (1.3%)
I feared the dog would be euthanised*	0 (0.0%)	2 (1.4%)	2 (0.5%)
I did not feel reporting was my responsibility*	0 (0.0%)	2 (1.4%)	2 (0.5%)

Table 3: Respondent views on deterrents to reporting dog fighting. Respondents could select multiple answers. * denotes themes derived from analysis of the "other" open text option. Six respondents were removed from the veterinarians column "I don't think anything would at all deter me" and eight from the RVN column as these respondents also selected deterrents. Two respondents indicated preference not to answer the question.

Top factors suggested by respondents that would encourage reporting	**Number respondents (percentage of respondent category)**		
	Veterinarians	**RVNs n=89**	**Total n=234**

	n=145		
Specific clear guidance/protocols for the whole process of reporting	20 (7.6%)	10 (11.2%)	30 (12.8%)
Confidence that illegal activity was occurring	14 (5.3%)	9 (10.1%)	23 (9.8%)
Assured anonymity when reporting	14 (5.3%)	6 (6.7%)	20 (8.5%)
Assurance/support from RCVS/VDS that report would not be a confidentiality breach	14 (5.3%)	5 (5.6%)	19 (8.1%)
Confidence the issue would be properly addressed	9 (3.4%)	10 (11.2%)	19 (8.1%)
Easier methods of reporting suspicions	14 (5.3%)	3 (3.4%)	17 (7.3%)

Table 4: Most frequently cited respondent views on factors likely to encourage reporting of suspected illegal dog fighting. Respondents could contribute multiple answers.

Discussion

The aims of this study were to investigate suspicions and reporting of dog fighting by UK veterinary professionals, and to provide evidence to support factors previously suggested to influence whether or not veterinary professionals report. Of the 423 respondents, 61 (14.4%) suspected an estimated total of 182 dogs in fighting in 2015. This is consistent with a report that 48% of UK veterinarians claimed to have seen or suspected any type of NAI in practice; the majority seeing one to three cases per year (Munro and Thrusfield 2001). Since we cannot know how many actual cases of dog fighting were presented to our respondents it is not possible to determine any error rate in suspicion. Multiple members of staff at one practice could complete the questionnaire (anonymity prevented quantification of this) so several respondents could have referred to a single case leading to duplication and artificial inflation of our estimate. However, consistent with previous studies (Yoffe-Sharp and Loar 2009), a number of respondents did not believe fighting dogs would present to a veterinary practice. Together with the limited respondent sample and the reported lack of confidence in identifying illegal activity, the number of suspected dogs is more likely to be an underestimate. If accurate, our findings suggest a ratio of one suspected case of dog fighting per every 2.3 respondents. The prevalence of dog fighting itself is likely to be greater than this ratio of case per veterinary professional, since few victims are likely to be taken to veterinary practice (Patronek 1997). Fear of seizure of a dog if it is an illegal breed

(Dangerous Dogs Act 1991) may be a deterrent (Hughes et al., 2011), whilst "professional" dog fighters may operate on their own animals (Ortiz 2010). Our study did not consider the identification of the bait animals used in training (Tiplady 2013); which may be been found alive but injured (Dinnage et al., 2004, Glendinning 2014, Anthony 2016); their quantification in practice may assist in assessing the prevalence of dog fighting.

This is the first study in the veterinary literature to explore suspicions and reporting of a type of NAI by RVNs. Contrary to our predictions; RVNs were significantly more likely to suspect dog fighting than veterinarians. This difference in suspicion could be related to RVNs' greater role in inpatient care (BVNA 2015), however, literature comparing the accuracy of veterinary professionals in identifying NAI is not currently available, so false negatives and/or false positives could be associated with either profession. The role of RVNs in identification of NAI warrants further exploration.

We hypothesised that greater experience of practice would be associated with more suspected cases of dog fighting, as difficulty identifying NAI (Tong 2016) and belief it is not seen in practice (Yoffe-Sharp and Loar 2009), would be likely to reduce. Here, this was unsupported by whether or not respondents suspected cases, but a nearly significant moderate correlation with the number of suspected cases suggests a larger sample could provide some support for a relationship.

With respect to *reporting* of suspicions, we found that 14.15% of respondents had *chosen not to report* one or more suspicions of dog fighting in the past and our findings further suggest that approximately half of the cases suspected in this study sample were not reported by veterinary professionals; this is consistent with McGuinness et al., (2005) who indicated that the majority of Irish veterinarians surveyed did not feel it appropriate to report suspicions. In contrast to the difference between professions' *suspicions*, our prediction of no difference between professions in *reporting* was supported. The subsample of reporting individuals was extremely small and a lack of statistical power may explain this inconsistency for RVNs. Alternatively it could suggest that barriers to reporting suspicions impacted more on RVNs than veterinarians. RVNs may not feel responsible for reporting, or may be constrained by the RCVS requirement to first report suspicions of NAI to a senior veterinarian (RCVS 2017a s14.9). The latter interpretation is consistent with proportionately more RVN than veterinarian respondents indicating influences of colleagues and their boss as reasons not to report in our study. If senior veterinarians are reluctant to accept the value of RVNs' reports or RVNs lack confidence in reporting suspicions to veterinarians (Kinnison *et al.,* 2014) then under-

296 reporting of suspicions of animal abuse by RVNs could occur. Further research is warranted
297 to explore the apparent suspicion-reporting disparity shown by RVNs such that barriers to
298 reporting can be addressed.

299

300 Our prediction that more experienced professionals, to whom fears of loss of income, legal
301 action and reprisals (Morgan *et al.,* 2007) and a belief that no action would be taken by the
302 authorities (Arkow 1994) were likely to be more applicable, would be *less* likely to report
303 suspicions, was not supported. Nor were any effects of age, practice location or profession on
304 reporting. Rather, deterrents to reporting may have been more influential, and those cited by
305 our respondents directly supported nearly all the reasons previously postulated in the
306 international literature (Table 1; except replacement with a new victim [Morgan et al 2007]).

307

308 The factors that our respondents suggested would encourage reporting of suspicions could be
309 incorporated into potential resolutions for commonly cited deterrents in the following areas:

310 *1) Problems identifying cases with confidence*

311 Consistent with other studies (Ascione and Barnard 1998, Green and Gullone 2005) that
312 identified insufficient training in recognising and identifying animal abuse as major
313 obstructions for introducing mandated reporting as a solution for control in their respective
314 countries (Acutt et al., 2015), 40% of our respondents reported uncertainty that illegal
315 activity was occurring. Enhanced education of veterinary professionals to increase awareness
316 of presentation of dogs used in fighting to practice and ability to detect clinical signs of recent
317 and historical fighting with other dogs could improve confidence to report, particularly if
318 empowerment and acknowledgement of responsibility are also engendered (e.g. Jamieson et
319 al., 2015). This could be included in the Day One Skills list for veterinarians and RVNs by
320 the RCVS (Robertson 2009, RCVS 2017 b, c).

321 *2) Not knowing if it is appropriate to break client confidentiality and/or how to report a case*

322 Fear of breaking client confidentiality and not knowing how to report were deterrents to
323 reporting for 20% of the respondents. Consistent with Tong (2016), our respondents felt the
324 provision of clear, accessible guidelines (including how to deal with issues of client
325 confidentiality) would help to address under-reporting of dog fighting by veterinary
326 professionals. However, formal guidelines are in place: the importance of maintaining client
327 confidentiality is detailed in the Codes of Professional Conduct for both RVNs and veterinary
328 surgeons (RCVS 2017 a,d) and exceptions to this are listed along with guidance on when and

how to break client confidentiality and to report suspicions of abuse (RCVS 2017 a,d). It is unclear whether UK veterinary professionals lack confidence in identifying exceptions, or in breaking confidentiality under these circumstances. Consistent with a lack of understanding of the process of reporting (Patronek 1997, Yoffe-Sharpe and Loar 2009) our findings suggest some UK veterinary professionals may be unaware of this information, despite its inclusion within a document to which they must adhere, or that it is insufficient for their needs. These deficits may be addressed within veterinary training and by providing more easily digestible and accessible information for exceptions to maintaining client confidentiality, since clear protocols for the whole process of reporting were suggested.

3) Concern about the ongoing welfare of the patient

Consistent with Arkow (1997) and Yoffe-Sharp and Loar (2009), many of our respondents felt that reporting suspicions of dog fighting would stop the client coming to the clinic, and thus patient care could be affected (Arkow 1994), echoing Australian veterinarians' views in previous research on animal abuse (Acutt *et al.,* 2015; 58%, n=117). It has been proposed that this ethical dilemma could be avoided by making reporting of suspected NAI mandatory (Robertson 2009), but if the veterinarians concerns are founded, this could result in decreased practice attendance and thus negatively impact patient welfare. Research focussed on the feasibility of introducing mandatory reporting in the UK is not available.

4) Negative experience with reporting

A small portion of respondents reported previous negative experience with reporting to the police and/or RSPCA or equivalent. The exact nature of negative experience is unclear, but it is plausible these were associated with understaffing of relevant authorities, no action being taken, unsuccessful outcomes or repercussions from the client (Arkow 1997, Patronek 1997, Morgan et al., 2007). A number of respondents felt that they would be more likely to report suspicious cases if they were assured anonymity and had confidence in the procedure that followed reporting. Given the sensitivity and potential costs to reporting (e.g. client loss, damaging public image), confidence in appropriate action by authority and legal protection from recourse is imperative. For RVNs an additional barrier to confidence in reporting to superiors may be the lack of support from within the team. Further exploration of these difficulties is required to understand how best to support veterinary professionals in these circumstances.

Although this study collected data from a comparable sample of respondents to previous studies (e.g. Munro and Thrusfield 2001), the questionnaire distribution method (i.e. shared

online, emailed to practices rather than individuals, the ability of recipients to forward on emails etc.), disallowed accurate assessment of the response rate and is vulnerable to self-selection bias. It is therefore difficult to be sure how exactly representative of the whole UK veterinary professional population our findings are. Nevertheless, our results are consistent with published findings for other countries (Patronek 1997; Stolt et al., 1997; McGuinness et al., 2005; Acutt et al., 2015), despite differences in legal frameworks, supporting their validity. Furthermore, these findings represent an important source of information on perceived issues with detecting and reporting of dog fighting by relatively early-career veterinary professionals that helps us to better understand barriers to these processes.

Conclusion

This study has revealed that a small, but significant, population of dogs presented to veterinary practice in 2015 were suspected by veterinary professionals of involvement in dog fighting, but as many as half went unreported. No effect of age or experience on suspicion or reporting of dog fighting was found. In the first published comparison of veterinary professions we found RVNs suspected proportionately more cases of dog fighting than veterinarians, but their reporting did not reflect this. This disparity for RVNs requires further exploration, but may be associated with the requirement to report to a superior. Overall the main barriers to reporting cited by all respondents suggest that veterinary professionals' roles in controlling the complex issue of dog fighting require further support via: improved education on identifying non accidental injury; improved understanding of when and how to break client confidentiality to report dog fighting whilst maintaining legal protection; personal and professional ability to deal with conflict associated with impacts on patient welfare; and increased confidence in the authorities responsible for control and prosecution of dog fighting.

[3,923 Words]

Figure Legends

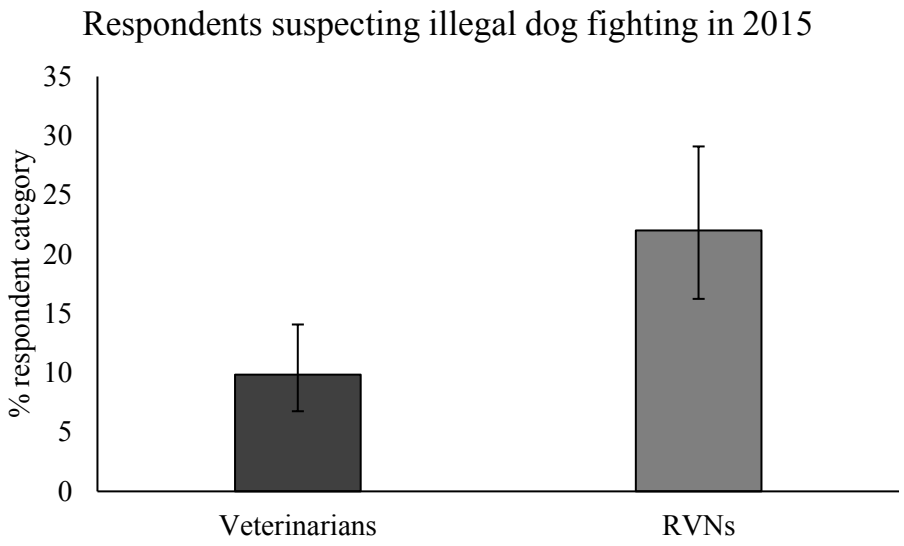

Figure 1: Percentage of each respondent category who suspected at least one case of illegal dog fighting in 2015, where 95% confidence intervals are shown as error bars. Veterinarians n=26/264, 95% CI 6.76% to 14.08%. Registered Veterinary Nurses (RVNs) n=35/159, 95% CI 16.24% to 29.10%. Sum total n=61/423, 95% CI 11.38% to 18.10%.

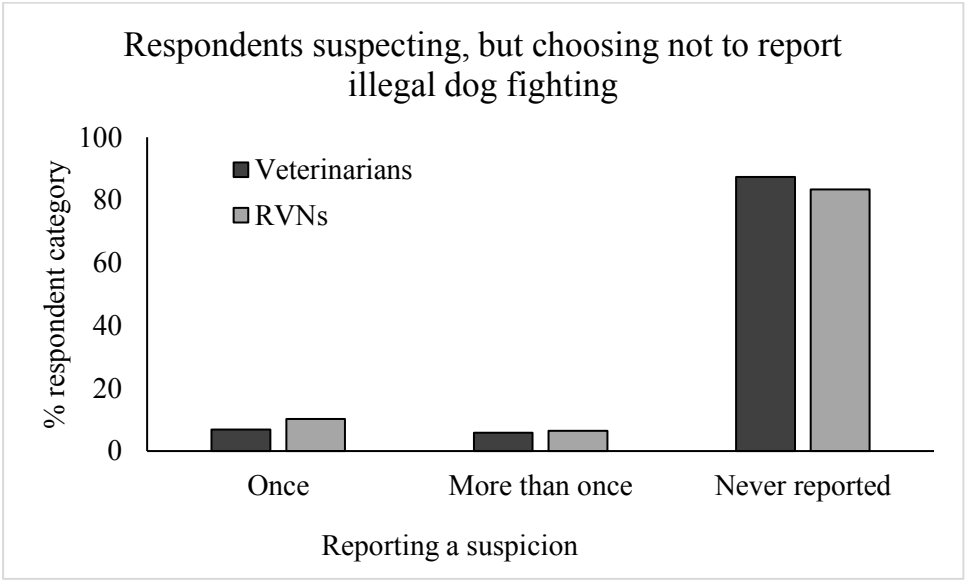

Figure 2: Percentage of each respondent category who had previously suspected illegal dog fighting and decided not to report it to the police, RSPCA or equivalent once (veterinarians: n=18, 6.9%; RVNs: n=16, 10.2%), more than once (veterinarians: n=15, 5.8%; RVNs: n=10, 6.4%) or never chosen not to report their suspicion (Veterinarians: n=227, 87.3%; RVNs: n=131, 83.4%).

Acknowledgements

This project would not have been possible without the help of the wonderful Michael Ryder, Daniel Milroy and Robert Milroy. Our sincere thanks also go to: Marc Abraham, Mike Butcher and Shakira Miles for their kind support and input. The Veterinary Record and the British Veterinary Nursing Association are also to thank for their promotion of the questionnaire. Finally, many thanks go to the anonymous respondents who completed the questionnaire and the anonymous reviewers for their comments. Royal Veterinary College manuscript number PPS_01680.

References

Acutt, D., Signal, T. and Taylor, N. (2015) Mandated Reporting of Suspected Animal Harm by Australian Veterinarians: Community Attitudes, Anthrozoös, 28(3), 437-447.

Animal Welfare Act 2006, c.45, s.8, London: Stationery Office.

Arkow, P. (1994) Child abuse, animal abuse, and the veterinarian, Journal of the American Veterinary Medical Association, 204(7), 1004-1007.

Ascione, F. R. and Barnard, S. (1998) 'The link between animal abuse and violence to humans: Why veterinarians should care', in Recognizing and Reporting Animal Abuse: A Veterinarian's Guide, Colorado: American Humane Association.

British Veterinary Nursing Association (2015) 'Who is caring for your pet? The veterinary nurse explained' [online], available: http://www.bvna.org.uk/downloads/who-is-caring-for-your-pet-leaflet-2015.pdf [accessed 27 Feb 2017].

Dangerous Dogs Act 1991, Ch.65, s.1, London: The Stationery Office Limited.

Green, P. C. and Gullone, E. (2005) Knowledge and attitudes of Australian veterinarians to animal abuse and human interpersonal violence, Australian Veterinary Journal, 83 (10), 619-625.

Harding, S. (2012) Unleashed: the Phenomena of Status Dogs and Weapon Dogs, Bristol: The Policy Press.

Harding, S. and Nurse, A. (2015) Analysis of UK Dog Fighting, Laws and Offences, London: Middlesex University. Jamieson, J., Reiss, M. J., Allen, D., Asher, L., Parker, M. O., Wathes, C. M., and Abeyesinghe, S. M. (2015) Adolescents care but don't feel responsible for farm animal welfare, Society & Animals, 23(3), 269-297.

Hughes, G. Lawson, C. and Maher, J. (2011) *Status dogs, young people and criminalisation: towards a preventative strategy*, Cardiff: Cardiff University School of Social Sciences.

Kinnison, T., May, S. and Guile, D. (2014) 'Inter-Professional Practice: From Veterinarian to the Veterinary Team', Journal of Veterinary Medical Education, 41(2) 172-178.

Lawson, C. (2017) 'Animal Fighting', in Maher, J., Pierpoint, H. and Beirne, P., eds., *The Palgrave International Handbook of Animal Abuse Studies,* Basingstoke: Palgrave Macmillan, 337-362.

McGuinness, K., Allen, M. and Jones, B. R. (2005) Non-accidental injury in companion animals in the Republic of Ireland, Irish Veterinary Journal, 58 (7), 392-396.

Merck, M. (2012) Veterinary Forensics: Animal Cruelty Investigations, 2nd ed., Iowa: Blackwell Publishing.

Morgan, C. A. and McDonald, M. (2007) 'Ethical Dilemmas in Veterinary Medicine', Veterinary Clinics of North America: Small Animal Practice, 37 (1), 165-179.

Munro, H. M. and Thrusfield, M.V. (2001) ''Battered pets': features that raise suspicion of non-accidental injury', Journal of Small Animal Practice, 42, May, 218-226.

Ortiz, F. (2010) 'Making the Dogman Heel: Recommendations for Improving the Effectiveness of Dogfighting Laws', Journal of Animal Law and Policy, 3(1).

Patronek, G. (1997) 'Issues for Veterinarians in Recognising and Reporting Animal Neglect and Abuse', Society & Animals, 5 (3), 267-280.

RCVS (2016) 'Find a Vet' [online], available: https://findavet.rcvs.org.uk/find-a-vet/ [accessed 1 Aug 2016].

RCVS (2017a) 'Code of Professional Conduct for Veterinary Nurses' [online], available: http://www.rcvs.org.uk/advice-and-guidance/code-of-professional-conduct-for-veterinary-nurses/ [accessed 27 Feb 2017].

RCVS (2017b) 'Day One Skills' [online], available: https://www.rcvs.org.uk/document-library/day-one-skills/ [accessed 6 Apr 2017].

RCVS (2017c) ‘RCVS Day One Skills for Veterinary Nurses’ [online], available: https://www.rcvs.org.uk/document-library/rcvs-day-one-skills-for-veterinary-nurses/rcvs-day-one-skills-list-sa-2016-.pdf [accessed 6 Apr 2017].

RCVS (2017d) ‘Code of Professional Conduct for Veterinary Surgeons’ [online], available: http://www.rcvs.org.uk/advice-and-guidance/code-of-professional-conduct-for-veterinary-surgeons/ [accessed 27 Feb 2017].

RCVS (2018) ’14. Client Confidentiality’ [online], available: https://www.rcvs.org.uk/setting-standards/advice-and-guidance/code-of-professional-conduct-for-veterinary-surgeons/supporting-guidance/client-confidentiality/ [accessed 19 Jun 2018].

RSPCA (2017) 'Tackling Dog Fighting' [online], available: http://www.rspca.org.uk/whatwedo/tacklingdogfighting [accessed 27 Feb 2017].

Robertson, I. (2009) ‘A Legal Duty to Report Suspected Animal Abuse: Are Veterinarians Ready?’, in Linzey, A., The Link Between Animal Abuse And Human Violence, Eastbourne: Sussex Academic Press.

Ryder, K. (2016) Survey on illegal dog fighting, Veterinary Record, 179 (10), 260.

Tong, L. (2016) 'Identifying non-accidental injury cases in veterinary practice', In Practice, 38 (59-68), 59-60.

Wooler, S. (2014) *The independent review of the prosecution activity of the Royal Society for the Prevention of Cruelty to Animals* [online], available: http://www.rspca.org.uk/webContent/staticImages/Downloads/WoolerReviewFinalSept2014.pdf [accessed 16 Jun 2018].

Yoffe-Sharp, B. L. and Loar, L. M. (2009) 'The veterinarian’s responsibility to recognize and report animal abuse', Journal of the American Veterinary Medical Association, 234 (6), 732-737.