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“Who’s been a good dog?” - Owner perceptions and motivations for treat giving

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20 ABSTRACT

21 Complex relationships commonly exist between owners and their companion animals,
22 particularly around feeding behaviour with an owner's affection and love for their animal
23 most pronounced through the provision of food. It is notable that the pet food market is
24 experiencing strong year-on-year growth in sales of dog and cat treats. Recognising the
25 role of treat giving in pet nutrition, the objective of the study was to investigate owner
26 attitudes and motivations towards feeding treats (shop bought and other) to their dogs. A
27 researcher-mediated questionnaire consisting of both quantitative and qualitative
28 questions was used to interview dog owners (n = 280) at two locations: an out-of-town
29 retail park and a country park in the East Midlands. Owners almost unanimously viewed
30 the word 'treat' within a nutritional context, as opposed to a new toy or other pleasure
31 defining this term. The majority (96%) of owners interviewed reported feeding treats to
32 their dog, with 69% feeding shop-bought treats on a daily basis. A wide range of treats
33 were reportedly given by owners and the majority of owners interviewed fed multiple treat
34 types. No association was found between owner age and frequency of shop-bought treats
35 fed ($P>0.05$), nor owner age and frequency of food given to the dog from the owner's plate
36 ($P>0.05$). A wide range of unsuitable foods which would not be considered balanced for
37 the animal's nutritional requirements were viewed as a treat by some dog owners. A range
38 of positive and negative views around the feeding of treats were expressed by dog
39 owners, with some citing beneficial effects while others were clearly aware of the
40 association between treat feeding and potential weight gain/obesity. Owner views included
41 themes around positive reinforcement and responsibility but also reflected relational
42 aspects of the human-animal bond. The results of the study show that treat giving is
43 commonplace in feeding regimes and that treats are embedded in the feeding behaviour of
44 many dog owners. However, the different views expressed around the motivations for,

45 and feeding of, dog treats, reinforce the need to better understand owner psychology
46 linked to this area, and the role this may play in the growing pet obesity epidemic.

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50 **Keywords:** Canine obesity, Treats, Feeding, Owner perception, Motivation

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53 **1. Introduction**

54 The number of overweight and obese dogs is increasing and obesity is considered to be
55 the most common nutritional disorder in companion animals (German, 2006). The exact
56 number of affected pets is difficult to estimate but a recent survey has reported that 45% of
57 UK dogs are overweight according to veterinary professionals, with three quarters of vets
58 believing that pet obesity has worsened over the last five years (PFMA, 2014).
59 Understanding the nature of this complex issue is proving challenging: as in human
60 obesity, the underlying causes are likely to be complex, social and multifactorial. A
61 number of associated risk factors that may predispose an animal to obesity have been
62 proposed including lifestyle, behavioural and dietary issues (German, 2010). An additional
63 influence that has also recently been highlighted is the importance of owner attitudes and
64 perception in recognising weight gain in dogs (German, 2011); White et al. (2011). It has
65 been suggested that successful strategies in tackling the problem will rely on gaining a
66 better understanding of the complex social interactions between owners and pets (Linder
67 and Mueller, 2014).

68

69 The complex relationships and emotional attachments that develop between owners and
70 their animals often mean pets are considered to be 'part of the family'. One area where

71 this affection and love for the animal can be most pronounced is through the provision of
72 food. The complex relationship between feeding patterns and obesity in dogs has been
73 acknowledged where aspects of owner attitudes and behaviour do not necessarily
74 translate into good animal welfare (Wensley, 2008; Bland et al., 2009; Heuberger and
75 Wakshlag, 2011). Recent national surveys monitoring changes in pet welfare issues
76 across the UK have also commonly reported the problem of owners feeding unsuitable
77 foods to their dogs (PDSA, 2012, 2013, 2014).

78

79 The provision of treats is often an important component in the relationship between dog
80 and owner (Linder and Mueller, 2014). The current value of the UK dog treat market is
81 estimated to be in excess of £390 million (PFMA, 2015); with a steady year-on-year growth
82 in sales at approximately 5%. Since dog ownership has not seen equivalent growth, the
83 implication of this is that dog owners are purchasing an increasing number of treats for
84 their animals, a claim that appears to be backed up by a number of sources (Bland et al.,
85 2009; PDSA, 2013, 2014).

86

87 Although reference is commonly made to treats in the discourse around dog obesity
88 (Robertson, 2003; Courcier et al., 2010; German, 2010), this specific aspect of feeding by
89 dog owners remains under-researched. For several years, it has been suggested that
90 owners may not be giving proper consideration to the nutritional requirements of their dog
91 when giving treats (Kienzle et al., 1998). In addition, the term 'treat' is often not well-
92 defined, particularly given the wide range of food that could be included in the definition,
93 and little is known about the views and opinions of owners with regard to the term, nor the
94 perceived role that treats play in the owner-dog relationship. A greater understanding of
95 owner attitudes and motivations around feeding treats is needed if we are to better
96 recognise how owner factors affect treat-giving behaviour. The main objective of this study

97 therefore was to examine owner attitudes and views about treats, with a focus on owner
98 perceptions and motivations for feeding them to their dog.

99

100 **2. Materials and Methods**

101 *Recruitment and interviewing of dog owners*

102 This study was carried out at two locations in the East Midlands: an out-of-town retail park
103 and a country park, popular with dog walkers. Data were collected from voluntary dog
104 owners who were approached on an *ad hoc* basis at the two locations. Identities of study
105 participants were not collected and all data from dog owners has been managed
106 anonymously in line with the University of Nottingham data management policies. On site
107 interviews were conducted by four trained researchers over February and March 2014.
108 Prior to being interviewed, dog owners were initially asked if they wished to participate and
109 were given some verbal information about the nature of the study, along with an
110 information sheet. All interviewees were confirmed to be over the age of 18 years before
111 being interviewed. If a dog was accompanied by more than one individual , the interviewer
112 asked from a response from a nominated person in the group. All answers given were
113 carefully recorded in writing by the interviewer but were not tape recorded so cannot be
114 regarded as verbatim. Following completion of the questionnaire, owners were offered a
115 small gratuity (in the form of a dog exercise toy, e.g. squeaky tennis ball) and reminded
116 about their consent and the details on the information sheet, including further contact
117 information. All protocols and procedures were conducted under Institutional guidelines as
118 approved in advance of the programme by the School of Biosciences Ethical Review
119 Committee, University of Nottingham, UK.

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121

122 *Questionnaire design*

123 Data were collected using a semi-structured questionnaire with an average interview
124 completion time of 10 minutes per owner. The questionnaire composed of 33 questions in
125 total and contained both quantitative and qualitative questions. As in the approach
126 previously used by the research team (White et al., 2011), a number of ‘closed’ questions
127 were included, requiring a single word answer or box ticking on a Likert scale, allowing
128 general patterns and trends to be identified. In addition, the inclusion of more ‘open-ended’
129 questions allowed dog owners to expand upon their answers given during the interview.
130 Owners were asked about their understanding of, and general views about treats, as well
131 as foodstuffs they considered as treats and their motivations for feeding them. As part of
132 the questionnaire, owners were also asked to allocate their dog’s weight status using one
133 of the following categories: (i) underweight, (ii) ideal weight, (iii) overweight or (iv) very
134 overweight. As before, themes were not determined in advance but were instead
135 inductively identified from the dataset. Samples of both open-ended and closed questions
136 are provided in Table 1.

137

138 *Statistical analysis*

139 Quantitative data were analysed using a generalized linear mixed model analysis (Genstat
140 v14, VSN, International Ltd, Hemel Hempstead, UK) to determine whether treat type (as
141 reported by the owner) varied with owner age (categorised into four groups: 18-30, 31-45,
142 46-59 and 60+). Similarly, the data were analysed for any association between proportion
143 of dogs receiving each treat type and owner perception of the dog’s weight. In addition,
144 Chi-squared analyses were conducted to investigate whether there were any associations
145 between owner age and 1) frequency of food given from the owner’s plate or 2) frequency
146 of shop-bought treats given to the dog. Feeding frequency was categorised into ‘daily’, ‘3
147 times a week’, ‘once a week’, ‘once a month’ and ‘never’ for statistical analysis. The
148 probability level taken as indicating statistical significance in this study was 5%.

149

150 **3. Results**

151 *Dog and owner demographics*

152 A total of 280 questionnaires were completed across both sites with 149 interviews from
153 the out-of town retail park and 131 interviews from the country park. The sampled dog
154 population was balanced according to gender (51% male, 49% female). In terms of age,
155 75% of dogs were 6 years or younger. Owner demographics revealed that 72% of the
156 sampled dog population had female owners. Owners aged 30 years or under comprised
157 7% of the sample population, with 23% aged between 31 and 45 years. Owners aged
158 between 46 and 59 made up 41% of those interviewed, with 29% of owners aged 60 or
159 above. Overall, the sampled population was towards older dog owners with 70% of those
160 interviewed aged 46 and over.

161

162 *Owner-reported treat giving behaviour*

163

164 Owners were initially asked about their definition of the term 'treat' and most defined it
165 within a nutritional context; hardly any owners reported that a treat might be a new toy or
166 anything other than food-related. Subsequent questions around views and feeding
167 frequency of a range of different types of treats revealed the majority (96%, n = 268) of
168 interviewed owners reported giving treats to their dogs, and a considerable number of
169 these (n = 192) reported feeding shop-bought commercial treats on a daily basis. When
170 questioned, 70% of dog owners considered treats to be an additional extra, rather than an
171 integral part of their dog's diet. Within this group, only 4 owners reported that they
172 adjusted meal size to account for this, to prevent problems with weight gain. Of those
173 owners who considered treats to be a normal part of the dog's diet, only 10 reported that
174 the size of the dog's meal was adjusted depending on the number of treats fed.

175 The most popular treats given were dog biscuits and dog chews with 77% and 62% of
176 owners considering these a treat for their dog respectively (Figure 1). The least common
177 'treat' given was human chocolate with only 2% of owners reportedly feeding this. Other
178 treats included 'table scraps' (29% of owners), cheese (35%) and 'other human food'
179 (38%). Owners in the current study fed a wide range of 'human foods' as treats to their
180 dogs; aside from meat and vegetables, a range of less healthy foods were also reported
181 such as crisps, sausage rolls, biscuits, cakes and even takeaway food.

182

183 Dogs receiving each treat type against owner-reported description of dog weight revealed
184 a greater proportion of 'very overweight' dogs receiving table scraps and higher
185 proportions of 'underweight' and 'very overweight dogs' receiving cheese as a treat (Figure
186 2). A similar observation was noted for dogs receiving 'other human food' with higher
187 proportions of 'underweight', 'overweight' and 'very overweight' dogs reportedly receiving
188 this category of treat.

189

190 The majority of interviewed owners in the current study reported feeding multiple treats
191 (Figure 3), with the most common combination (24% of owners) being two treat types.
192 Overall, in the sampled population, 76% of owners gave between one and four different
193 types of treats to their dog. When asked specifically about the frequency of feeding
194 'human food' to their dog, 20% (n = 55) of owners reported feeding it daily, 17% (n = 48)
195 said three times a week, 20% (n = 56) reported once a week feeding, with 8% (n = 23)
196 feeding it once a month and 35% (n = 98) of owners reporting that they never feed human
197 food to their dog. Within the sample population, the type of food considered as a treat by
198 the owner was not significantly affected by owner age ($P > 0.05$). Similarly, no significant
199 statistical effect was determined between owner age and frequency of shop-bought treats;
200 nor owner age and frequency of food given to the dog from the owner's plate ($P > 0.05$).

201

202 *Owners' views and attitudes toward treat giving*

203 The inclusion of qualitative questions in the questionnaire allowed owners to expand upon
204 their answers to account for their treat-giving behaviour. Specifically these questions
205 allowed owners to discuss their views on treats and motivations for feeding. The data
206 revealed a range of positive and negative views expressed, with some owners clearly
207 aware that overfeeding treats can lead to problems with weight gain and obesity. By
208 contrast, other owners felt that the feeding of treats was beneficial. Another common
209 theme was the idea that treats should only be fed as a reward for good behaviour or
210 *earned* as part of training for the dog. A selection of reported owner comments is shown in
211 Table 2.

212

213 **4. Discussion**

214

215 The overall aim of the current study was to gain a better understanding of dog owner views
216 and attitudes towards treats, and how these relate to their treat-giving behaviour. To the
217 authors' knowledge, this is the first such study examining more in-depth perceptions and
218 motivations for feeding treats by dog owners.

219

220 At a fundamental level, the first interesting observation from the current study was that
221 owners generally view the term 'treat' in a purely nutritional context, associated with food
222 or feeding. It was noticeable that hardly any owners even mentioned other factors that
223 could be considered under this term such as a new toy for the animal. This observation
224 tends to reinforce the suggestion that dog owners associate showing affection or love to
225 their animal, largely through the provision of food. Based on the questionnaire results, a
226 large number of dog owners engaged in feeding treats. This observation supports other

227 findings (PDSA, 2011, 2014; PFMA, 2014) and suggests that the feeding of treats has
228 become commonplace among the dog owning population, and would appear to be
229 supported in view of the ongoing rise in retail sales of dog treats. When asked about their
230 understanding of the term 'treat', it was common for owners to report that treats were
231 anything fed that was not in the dog's main diet, as well as something given infrequently or
232 even as a bribe or distraction. These owner-held opinions, specifically that treats should be
233 fed infrequently, would appear at odds with the collected data where the majority of
234 owners reported feeding shop-bought treats on a daily basis. The findings would indicate
235 there is some disconnection between the perceived views of some pet owners and their
236 self-reported actions and behaviours.

237

238 Nearly three-quarters of owners interviewed considered treats to be an additional extra to
239 their dog's diet, rather than an integral part of it. This is encouraging and demonstrates
240 some awareness among owners that treats should not form part of the dog's main meal.
241 The idea of a 'treat allowance' has been proposed (Laflamme, 2012) whereby treats are
242 limited to 10% of the daily calorie allowance for the dog. However, one important, yet
243 concerning observation from the current study was that irrespective of whether owners
244 considered treats to be part of, or in addition to, the dog's normal diet, only a minority of
245 owners commented specifically that they made adjustments to the size of the dog's main
246 meal(s) as a result of feeding treats, to prevent their animal becoming overweight. This
247 observation alone is concerning and clearly suggests that most dog owners may have
248 difficulty gauging the overall daily calorie intake of the animal, and how their feeding of
249 treats may be contributing to this difficulty. No specific association was found between
250 treat feeding and owner age which is in agreement with previous studies (Colliard, 2006).
251 The sample population in the current study was skewed towards older owners and it would
252 therefore be useful for any future work to try to encompass a wider owner demographic.

253

254 One positive finding from the study was that only a very small number of owners (2%)
255 reported feeding human chocolate. A number of owners reported feeding cheese to their
256 dog but noted that this was a means of delivering or hiding medication for their animal.
257 This finding could explain the observation in the dataset where higher proportions of
258 underweight and very overweight dogs were reportedly fed cheese as a treat (Figure 2).
259 More worrying was the range of take-away foods including Chinese takeaway, fish and
260 chips, kebabs, curry and pizza that were reportedly fed by a number of owners. The
261 feeding of takeaway foods was surprising, given the typically high salt and fat content of
262 these which would be advised against for dogs. These data support previous findings
263 highlighting a range of unsuitable foods that are considered a treat by some dog owners
264 (PDSA, 2011, 2012). The range of unsuitable foods given is of particular concern as these
265 human foods would not be balanced for the dog's nutritional requirements. Although no
266 association was observed between the owner's perceived health status and their
267 description of their dog's weight in the current study, it is important to note that the
268 composition of any table scraps offered to the dog will likely be a reflection of the diet and
269 nutritional status of the owner (Heuberger and Wakshlag, 2011). An owner's diet that is
270 high in salt, fat and sugar will ultimately result in table scraps for the dog that are similar in
271 nutritional composition. Treat feeding is perceived as an integral component in the
272 relationship between dog and owner (Linder and Mueller, 2014) and there is evidence that
273 owners of overweight dogs will turn to other strategies such as weight loss products,
274 attending an obesity clinic or seeking veterinary guidance before they are willing to
275 eliminate treats (Bland et al., 2010).

276

277 The inclusion of open-ended questions in the study meant that it was possible to capture
278 owner views of treats, notions of responsibility, and *why* they feed them. As in previous

279 work using this approach (White et al., 2011), owners often used personal narratives to
280 explain why they fed treats and expressed their views on the perceived beneficial (or
281 otherwise) aspects of feeding them. Some owners commented that treats were a
282 welcome addition to the otherwise 'boring' diet – clearly, revealing the owner's view that
283 the regular diet was insufficiently interesting for the dog. The idea that treats should only
284 be used as a training aid was another theme that emerged from the dataset. A number of
285 owners expressed the view that treats should only be given to the dog if they were
286 'earned'. These questions also captured that some owners had started treat feeding as
287 part of puppy training classes and that this habit had remained as the animal reached
288 adulthood.

289

290 Other owners considered the feeding of treats to be essential and were of the opinion that
291 giving treats in some way kept the dog 'happy'. Conversely, these owners felt that not
292 feeding treats to their dog was like "not giving children toys". Owners in this category
293 would appear to be humanising the dog, viewing it as a human child, rather than a pet.
294 These comments appear to reinforce the suggestion that the care provided by owners for
295 their pets could mirror that provided by parents for their children. A number of major
296 parenting styles have been recognised and it has recently been suggested that these
297 could have possible parallels with pet ownership (German, 2015).

298

299 Within the sample population, several owners were aware of the potential problems with
300 giving treats to dogs. Reference was made to the need for owners to be responsible and
301 there appeared to be some recognition that it was not always easy for owners to properly
302 keep track of how many treats are being fed. Again, a comparison was made with children
303 by some owners, with concern expressed that giving a high number of treats to children or
304 dogs could result in problems with weight gain in both. These personal views clearly

305 demonstrate the complex human/animal relationship that exists between the owners
306 interviewed in this study and their dogs. These views are perhaps not surprising, given the
307 complex and multifactorial roles that pets fulfil in society with many owners considering
308 their pet a friend or like a child, and the wider perceived benefits with pets acting as social
309 catalysts and providing companionship which can be clearly beneficial for some owners in
310 providing an enhanced quality of life (McNicholas and Collis, 2000; McNicholas et al.,
311 2005).

312

313 The data from the current study reveals that treat feeding appears endemic in feeding
314 regimes and treats are embedded in the feeding behaviour of most dog owners. In
315 agreement with other studies, the majority of dogs were fed treats, and a large number of
316 owners were giving them on a daily basis; comprising of a variety of appropriate and less
317 appropriate foods in relation to the dog's nutritional requirements. An interesting finding
318 was that large numbers of owners appear to be feeding multiple treat types to the dog, as
319 reflected in the treat combinations reported, with two treat types being the most common.
320 The reasons why owners are feeding multiple types is not clear; it could be that owners
321 feed a combination in the belief that this introduces some variety of taste for the dog
322 although further research is warranted to investigate this further. Whilst some owners in
323 the current study were aware of the potential problems of inappropriate feeding of treats,
324 other owners clearly held differing views and felt that treats were a necessary part of the
325 dog's diet. When considering these diverse views around the feeding of treats among dog
326 owners, it should be remembered that all owners are now legally bound to provide a 'duty
327 of care' towards their pets, including the need to provide a *suitable diet* (DEFRA, 2006),
328 with the potential of prosecution for pet owners who fail to provide this need. It is evident
329 that some of the foods reportedly given by owners in the current study would not be
330 viewed as suitable for the dog. As part of the wider debate around effective weight

331 management strategies for pets, the importance of gaining a better understanding of diet
332 (including treats) and how this plays a key role in the relationship between owner and pet
333 is outlined in recent guidelines for veterinary professionals, published by the American
334 Animal Hospital Association (Brooks et al., 2014).

335

336 Further research would be warranted around the nutritional specification of commercial
337 dog treats and the role that marketing and packaging of these treats plays in owner
338 purchasing decisions and justification of treat use. There has been a recent call from the
339 insurance industry for clearer labelling on dog and cat treats (Anon, 2015). Although the
340 dog treat market is more established, sales of treats for cats also appear to be rising
341 (PFMA, 2015). It would be interesting to explore whether similar views and motivations for
342 treat feeding, as expressed by dog owners in this study, were also expressed by owners of
343 cats. Another area that was evident in the dataset that warrants future research is how
344 treats are used as training aids and the ease (or otherwise) felt by owners in their ability to
345 stop providing them to the dog when the programme of training is complete. Linked to
346 this, the idea of what is considered as the treats being 'earned' by the dog; is it appropriate
347 positive reinforcement for desired behaviour, or some other owner-perceived factors.

348

349 These results provide some useful insights but it is acknowledged that only two sites were
350 used for this study within the East Midlands during a specific time of year. Owner
351 populations were skewed towards older female participants, possibly due to the fact that
352 interviews were carried out during the day. Another caveat is that where the weight status
353 of the dogs was highlighted in this study, the weight status was allocated purely by the
354 owner, without verification by a veterinary professional. Previous research (White et al.,
355 2011) suggests that some owners of overweight animals may not perceive them to be
356 such, viewing them as an 'ideal weight' status, which could have influenced the weight

357 allocation categories. Nonetheless, the results from this study yield detailed insights into
358 the wide range of views and opinions expressed, and behaviour of dog owners with regard
359 to feeding treats. These findings should help inform the wider debate, especially around
360 the area of owner attitudes, with regard to feeding behaviour and the role this plays in the
361 growing pet obesity epidemic.

362

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364

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375

376 **Conflict of interest**

377 None of the authors of this article has a financial or personal relationship with other people
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449 **Table 1.** Sample questions included in questionnaire interviewing dog owners about their
450 motivations / reasons for treat-giving

'Open' questions

- What do you understand by the term 'dog treat'?
- What is the main reason for giving treats to your dog?

'Closed' questions:

- How often do you give shop-bought treats to you dog?
 - Do you consider treats to part of your dog's normal diet or an additional extra?
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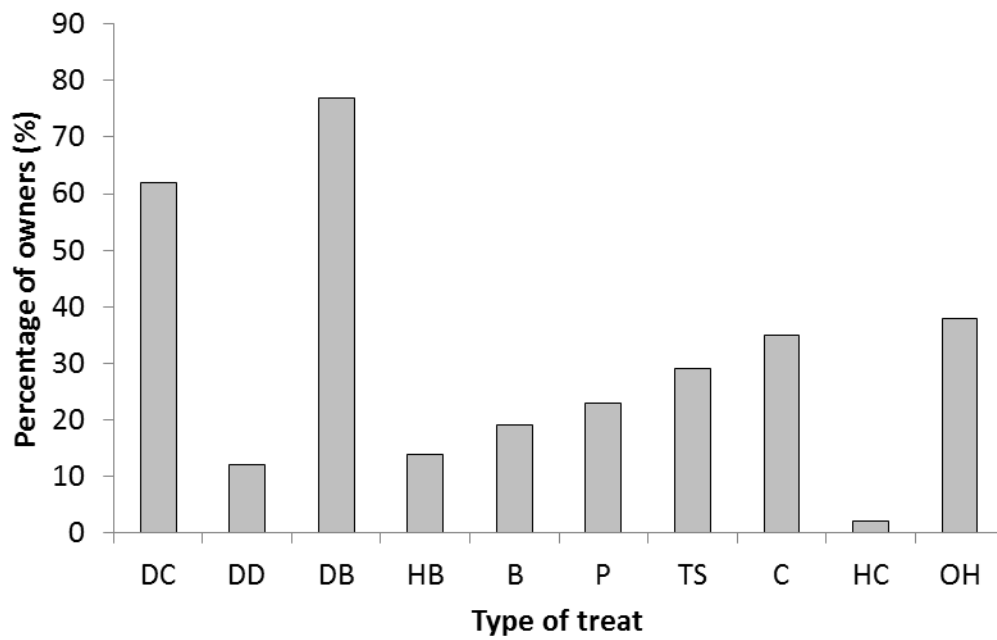
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471 **Table 2.** Sample of dog owner comments in relation to treat feeding

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Owner comments	Themes
Positive views of feeding treats:	
<i>“All pet owners should give treats, like you give to a child”</i>	Relational (reflecting the nature of the animal-human bond)
<i>“I think dogs need treats, it keeps them happy, not giving treats is like not giving children toys”</i>	
<i>“Treats are something other than boring dog food”</i>	
<i>“I don’t give them unless the dog does something for it, they are used for training”</i>	Utility (Positive reinforcement / training)
<i>“Dogs don’t perceive treats as a treat – they need to be earned”</i>	
<i>“Treats should only be given for a purpose – e.g. training”</i>	
Recognition of potential problems with feeding treats:	
<i>“People pour treats on their dogs too frequently and it does the dog no favours”</i>	Notions of Irresponsible owners (Awareness that many dogs are fed too many treats)
<i>“Treat feeding can be a serious issue and owners need to be responsible”</i>	
<i>“Some people give treats instead of a balanced diet”</i>	
<i>“You need to be careful what you treat with and don’t do it too often. Like a child will put on weight if fed too much”</i>	Risks of Overfeeding (Awareness of link with weight gain/obesity)
<i>“People seem to feed treats often without realising how much they are feeding”</i>	
<i>“Treats can have high fat content so need to be careful of overfeeding”</i>	

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474 **Figure 1.** Type of treats fed by dog owners

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476 *DC = Dog chew, DD = Dog chocolate drop, DB = Dog biscuit, HB = Human biscuit, B =*477 *Bones, P = Pigs ear/trotter, TS = Table scraps, C = Cheese, HC = Human chocolate, OH =*478 *Other human food*

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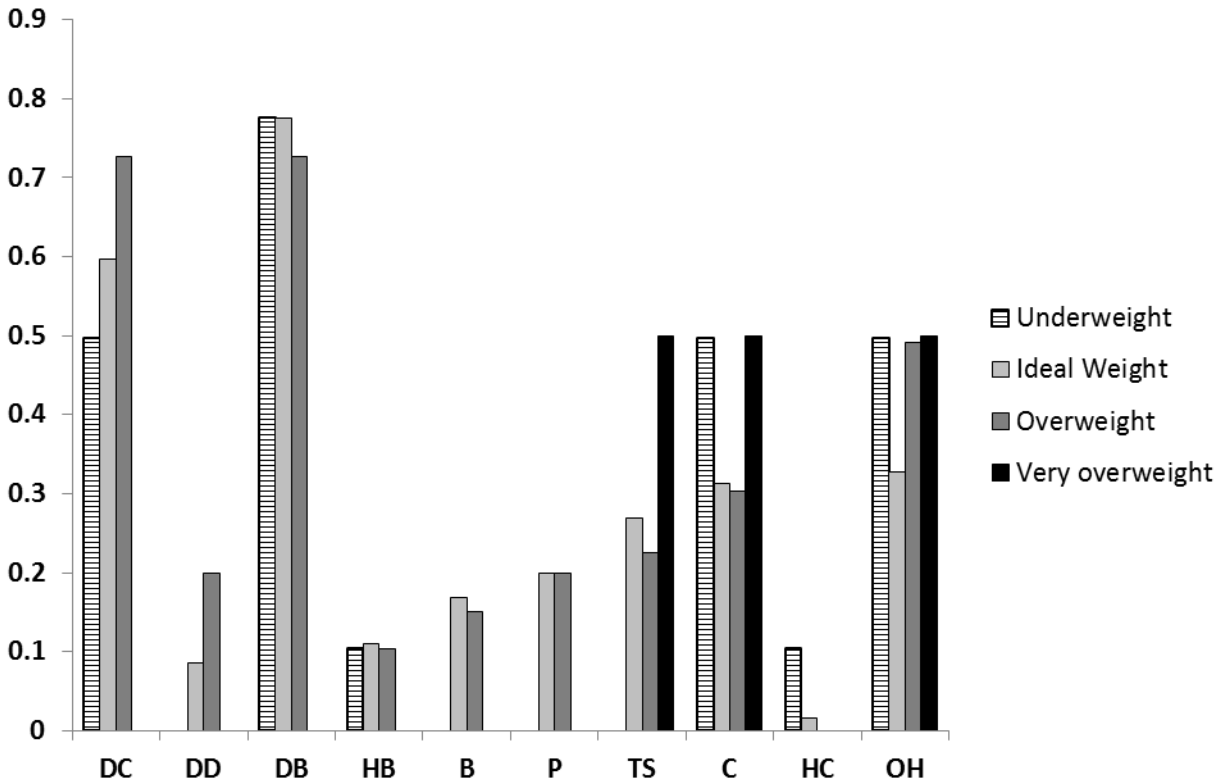
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491 **Figure 2.** Proportion of dogs receiving each treat type against owner-reported
492 classification of dog weight

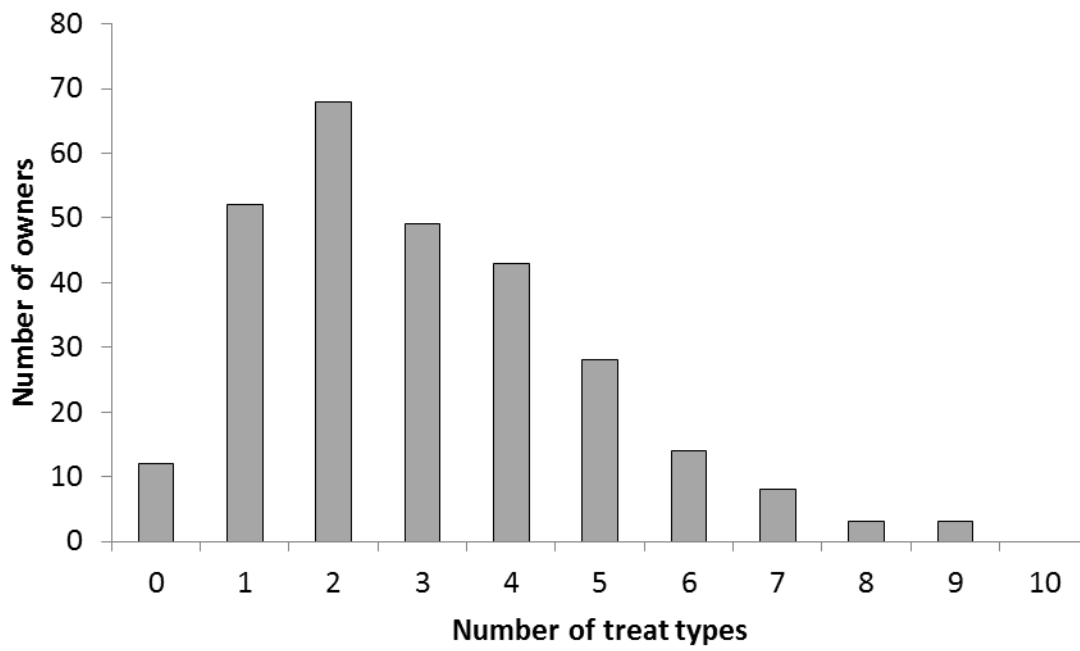


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494 *DC = Dog chew, DD = Dog chocolate drop, DB = Dog biscuit, HB = Human biscuit, B =*
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496 *Other human food*

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507 **Figure 3.** Frequency of reported treat combinations given by dog owners

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