UNIVERSITY OF VETERINARY MEDICINE BUDAPEST

DEPARTMENT OF ANIMAL NUTRITION AND CLINICAL DIETETICS

A STUDY OF OBESITY AMONG COMPANION DOGS IN IRELAND

by

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INTRODUCTION:

More and more, dogs are being kept as pets or companions. It has become less common for dogs to be bred for performance and purpose. (Pauleen Charmayne & Vanessa Ilse, 2007) 'Companion animal' can seem like an obvious term referring to the everyday 'pet', but defining and understanding these terms has an ongoing history (Webb, 2002). For the purpose of this thesis, the term 'companion' refers to a dog within a household that does not serve an obvious purpose or carry out a specific job, eg., A working dog, such as a sheep herding dog on a farm. They are there more for entertainment or companionship. (Serpell, 1987)

It is estimated that Ireland had a dog population of 495,000 in 2022, and that 27% of households in Ireland have a pet dog. (FEDIAF, 2023) Although it is hard to gain an accurate population figure as seen in another 2022 survey discovers that 49% of households in Ireland had at least one dog (Amárach, 2022). Due to this data collection issue, a truly accurate population number cannot be given however, an estimate can instead. Official government data collection during 2000 to 2020, shows that Ireland saw an overall upward trend in dog licences issued. An increase of 31.2% (49,424) over the 20-year period. (Department, 2022)

In Ireland, the government outlines the basic care requirements for dog owners. Owners are required to provide: clean water, appropriate food, shelter, sufficient exercise, grooming, play or stimulation, socialisation with other dogs, and training of basic commands, along with conformity to 'The Animal Health and Welfare Act, 2013' which outlines the legal responsibilities of a dog owner (Department, 2023)

In Ireland, companion dogs have seamlessly integrated into modern-day social life, providing a source of happiness and joy for many individuals and households. However, the pleasures of owning a companion dog come with significant obligations, with an emphasis on their well-being. Among these responsibilities, maintaining a dog's health and weight is crucial, as the issue of excess weight and obesity is increasingly prevalent not just in Ireland but worldwide.

“Obesity is defined as an accumulation of excessive amounts of adipose tissue in the body and is the most common nutritional disorder in companion animals.” (German, 2006). It is the usual result of a chronic increase intake of nutrition or an insufficient level of exercise and energy utilization (Preet, et al., 2021).

As obesity in companion dogs continues to be a problem, it is especially seen in higher-income countries (Edney & Smith, 1986), such as Ireland. It is now regarded as one of the “greatest health challenges of the 21st century” and is a significant contributor to a shorter life expectancy (Muñoz-Prieto, et al., 2018). While in dog populations, obesity has been estimated to be between 22-40% from studies across the world (McGreevy, et al., 2005).

Obesity has many consequences if not treated, and patients can suffer as a result of a wide range of health problems (Loftus & Wakshlag, 2014). “The problems to which obese companion animals may be predisposed include orthopaedic disease, diabetes mellitus, abnormalities in circulating lipid profiles, cardiorespiratory disease, urinary disorders, reproductive disorders, neoplasia (mammary tumours, transitional cell carcinoma), dermatological diseases, and anaesthetic complications.” (German, 2006). Canine patients are generally regarded as being clinically obese when their body weight is at least 15% above the species-specific ideal (Gossellin, et al., 2007).

“BCS is a subjective, semi-quantitative method of evaluating body fat and muscle” in animals. The categories range from 1-9, but shorter scales, such as 1-5 or 1-6 can also be used efficiently. This scale system uses Visual and Palpable characteristics of the animal to estimate a Body Condition Score (BCS). The categories range from the lowest (1) being severely thin with prominently identified characteristics to the highest (5/6/9) being severely obese with hard-to-identify characteristics (Burkholder, 2023).

From owner to owner, the knowledge and understanding of BCS vary, with some owners being able to use the scale accurately and others generally missing the correct category by 1 or 2 scores in the case of a 1-9 scale (Bland, et al., 2009). Owners who are more likely to get an accurate BCS that aligns with their vet’s estimate are owners of sport dogs (Kluess, et al., 2021). Studies investigating owner perspectives on obesity have seen a high percentage of owners admit to their companion dog being obese but do not regard it as a health issue (Freeman, et al., 2006)

Aims and Objectives:

The primary focus of this study centres around companion dogs in Ireland and owners' perspectives on their companion dog's lifestyle, nutrition, and exercise.

However, owing to constraints in data availability in Ireland, certain generalisations may be made while remaining within the broader context of canine obesity research.

Aims:

As research on obesity among companion dogs in Ireland is varied, this study set out to expand on that current research on the topic.

This study aimed to provide a comprehensive review of obesity in canine companion animals in Ireland, investigating its root causes and resulting impacts; however, due to the lack of research in this area in Ireland currently, the subject has been expanded to include a worldwide scenario.

Additionally, it sought to gauge the awareness of Irish dog owners regarding the estimated percentage of overweight companion dogs in Ireland.

The research, through the use of a survey, delved into the feeding habits of Irish dog owners and assessed their body conditioning methods for their dogs.

Furthermore, the study examined whether increased awareness about the prevalence of dog obesity in Ireland could potentially influence owners to take proactive steps in managing their dogs' weight.

Objectives:

Through the assembly of a literature review.

1) Gain insight into the current global record of canine obesity.
2) Explore the causes of obesity in companion dogs.
3) Summarise several consequences resulting from obesity in dogs.

Through the collection of survey results.

1) Collect data related to the dog population in Ireland.
2) Gain insight into companion dog owners' knowledge of BCS and canine body conditioning.
3) Obtain information relating to the owner's feeding habits and exercise routine for their companion dogs.
4) Discover if, after getting new information, would owners be more concerned with their dog's weight status.

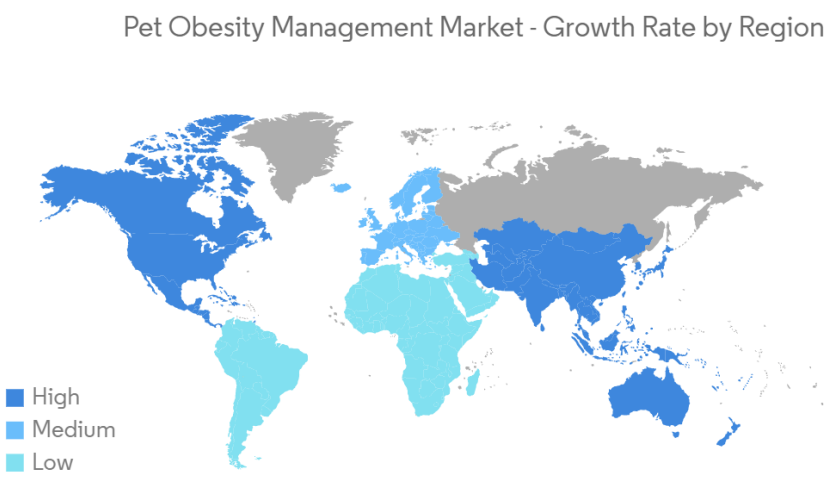
Literature Review:

1. Canine obesity problem across the world

A 1995 study of 21,754 adult dogs in America found that 34% of dogs were either overweight or obese (Lund, et al., 2006), while in the year 2000, a total of 22,661 Australian dogs were surveyed, of which 33.5% were found to be overweight and another 7.6% were obese (McGreevy, et al., 2005). In 2010, a study of 696 dogs found that 38.9% were overweight and 20.4% were obese (Courcier, et al., 2010). In 2021, the largest dog show in Sweden contained 120 contestants across 6 breeds, with 32% of the dogs receiving a BCS of 6 on a 1-9 scale, with Labradors, Golden Retrievers, and French bulldogs having the highest mean of BCS (Lindåse, et al., 2021).

A survey conducted in the whole of the UK, surveying 2,485 dogs, found that 20% of owners knew their dogs current BCS, 56% knew their dog's ideal weight, and 68% knew the current weight. 46% of owners' main reason for giving treats was to make the dog happy. It was found that 81% of owners regarded their dog as being at the ideal weight, but veterinary professionals estimated that 46% of dogs are overweight or obese (PDSA Animal Wellbeing (PAW), 2023).

Therefore, from 1995 all the way to the present and likely beyond, we can see that obesity is a lasting issue in many countries across the world. The issue also displays that there is a clear discrepancy between owners' knowledge and veterinarians' perceptions. These studies reflect a lack of awareness among owners regarding a healthy BCS and dog health.



picture. 1.

Here we can see the growth rate of the obesity management market across the world.

(Intelligence, 2023)

2. Influential Factors causing Obesity in Companion Dogs.

2.1 Owners influence

Excessive intake of nutrients and/or insufficient physical activity are commonly responsible for obesity. (German, 2006) Excess caloric intake without adequate exercise/activity results in energy being stored as glycogen and fat in organs and in subcutaneous adipose tissue (SAT) (Haas, et al., 2012).

A clear distinction is seen in owners and pet dogs' relationship concerning caloric intake and activity standards, with generally over 50% of overweight dogs owned by overweight owners (Heuberger & Wakshlag, 2011). Dog owners prioritize the health and welfare of their pets, yet being more aware of body condition, nutrition, and physical activity is essential to helping solve the issue of canine obesity. (Kluess, et al., 2021).

A recent thesis found canine obesity risk is elevated in cases involving female owners, single-person households, older owners (46 years and older), feeding regularly with treats, limited daily exercise (less than 1 hour of walking), and keeping dogs confined to the garden without regular walks. (Lorin, 2016)

Feeding often reflects the owners' perceptions of their companion dog's needs rather than strictly adhering to commercial food recommendations. An important element to consider regarding owners' feeding practices is the control exercised by various household members. (Downes, et al., 2017) Owner and companion dog relationship can resemble those of a parent and child (Cimarelli, et al., 2017). In this, we find that owners attribute human qualities to their animals (Bradshaw & Casey, 2007) thus influencing their feeding habits and health outcomes.

Companion dogs have a higher risk of becoming overweight or obese when they receive less than an hour of daily exercise (German, et al., 2017). Additionally, an owner's own activity level affects their dog's activity level (Banton, et al., 2022). Since owners determine how much exercise their dogs get, some may not realize that their canine companions need more activity. This lack of awareness can lead to surprise when they learn that their companion dogs are overweight, as demonstrated in the study by (Rohlf, et al., 2010)

2.2 Breed Predisposition

While dog owners are responsible for managing their pets' diet and exercise, the varying susceptibility to obesity among dog breeds indicates the potential impact of genetic factors. Breeding practitioners should then consider investigating the genetic predisposition of breeds to obesity (O′Neill, et al., 2014) and food motivation. (Raffan, et al., 2015)

Pugs, Beagles, Golden Retrievers and English Springer Spaniels have been seen to have highest odds of obesity than others, while breeds such as Labrador Retrievers, Staffordshire Bull Terriers, Jack Russell Terriers, Cocker Spaniels, and Shih-Tzu's are also very commonly seen as overweight. (Pegram, et al., 2021)

Among all the dog breeds with reported data, Labrador Retrievers exhibit the highest documented prevalence of obesity. (Edney & Smith, 1986) (Lund, et al., 2006)

Despite clear evidence that obesity and related characteristics are largely influenced by genetics in companion animals, there have been limited studies so far to pinpoint the specific genes responsible and understand how they work. As this field advances, it holds the promise of practical advantages for animal populations and even the potential to provide valuable insights for non-traditional animal models of obesity. (Wallis & Raffan, 2020)

2.3 Age, sex, neuter status

With age comes mobility issues, and dogs over 5 years old and especially over 10 years of age are more prone to becoming obese and overweight (Torda, et al., 2020)

Other contributing factors, such as the significance of sterilization (spaying and neutering), are well established. (Lund, et al., 2006)

Neutering has been linked to weight gain for a considerable time, and distinctions in the risk between male and female dogs have been identified in the past. (McGreevy, et al., 2005) (Muñoz-Prieto, et al., 2018)

It has been found in Labradors that neutered males are more likely to be predisposed to obesity than females, while old age was associated with obesity in females (Wallis, et al., 2023)

3. Consequences of Canine Obesity

Canine obesity is a growing concern in the veterinary world of medicine. We see serious health risks and implications for companion dogs. Research has shown that obese dogs are at a higher risk of developing a range of associated diseases. One study conducted by German and Swiss researchers found a strong correlation between canine obesity and conditions such as osteoarthritis, with overweight dogs being four times more likely to suffer from this painful joint disease (German & Davies, 2010). Another study published in the Journal of Veterinary Internal Medicine demonstrated a link between obesity and insulin resistance in dogs, which can lead to type 2 diabetes (Nelson, et al., 2015). Additionally, obese dogs are predisposed to cardiovascular problems, including hypertension and heart disease (Lund, et al., 2016). These findings underscore the importance of weight management in dogs to reduce the risk of obesity-associated diseases and improve overall canine well-being.

Brachycephalic airway obstruction syndrome	Hypothyroidism
Cardiorespiratory disease	Increased anaesthetic risk
Cranial cruciate ligament rupture	Insulin resistance
Decreased immune functions	Insulinoma
Decreased lifespan	Intervertebral disc disease
Diabetes mellitus	Joint disorders
Dystocia	Laryngeal paralysis
Dystocia	Mammary
Endocrinopathies	Metabolic abnormalities
Exercise intolerance	Metabolic syndrome
Functional alterations	Neoplasia
Glucose intolerance	Orthopedic disorders
Heat intolerance/heat stroke	Osteoarthritis
Hepatic lipidosis (cat)	Respiratory compromise, e.g., dyspnoea
Humeral condylar fractures	Tracheal collapse
Hyperadrenocorticism	Transitional cell carcinoma
Hyperlipidaemia/dyslipidaemia	Transitional cell carcinoma
Hypertension	Urethral sphincter mechanism incompetence
Hypopituitarism	Urogenital system
Hypothalamic lesions	Urolithiasis (calcium oxalate)

Table 1. Diseases reported to be associated with obesity in companion animals (German, 2006)

3.1 Prevalence of Osteoarthritis due to excess body weight

The relationship between obesity and Osteoarthritis (OA) in humans is well documented and is a significant cause of disability and pain. One study suggests that the prevention of obesity and excess weight reduces the likelihood of hip dysplasia and OA of other joints including the hip. Therefore, it seems logical that a reasonable and effective treatment plan to avoid OA is weight control and the prevention of excess weight gain. (Marshall, et al., 2009)

Grossly obese dogs have an increased prevalence of traumatic and degenerative orthopaedic disorders. Furthermore, the severity of osteoarthritis is greater in dogs with a BCS above ideal. (Burkholder & Toll, 2000)

A longitudinal study of 8 years by Kealy et. al, concluded that food intake and its control as an environmental factor may have a significant effect on the development of OA in dogs. The study consisted of two group's of 24 Labrador Retriever puppies. One group received a feeding regime such that they maintained a consistent BCS of 6.5/9, while the other group received 75% of the first groups feed amount while on the same regime, maintaining a consistent BCS of 4.5/9. (Kealy, et al., 2000)

Using radiographic imaging, OA evidence was seen to have affected multiple joints and was more significant in the group with a maintained higher BCS.

3.2 Diabetes Mellitus

A dog's overweight condition is closely associated with insulin resistance and glucose intolerance but doesn't show an increased risk of T2DM, while T1DM can be seen as a result of pancreatitis caused by canine obesity. More research is needed to link obesity to T2DM in dogs. (Verkest, et al., 2011) (Bjørnvad, 2015)

Adipocytes produce and secrete numerous cytokines and hormones. There is a negative relationship between body fat content and levels of adiponectin, resulting in low levels of adiponectin. Low levels of adiponectin cause insulin resistance. Also, overweight dogs have increased levels of TNF-alpha (tumour necrosis factor), IGF-1 (insulin-like growth factor-1) and GP-1 (glucagon-like protein-1), all of these peptides have been associated with insulin resistance. (Radin, et al., 2009)

Another fat derived peptide, resistin, is upregulated in cases of obesity. Increased resistin levels participate in the pathogenesis of insulin resistance. (Jamaluddin, et al., 2012)

There have been no recent epidemiological studies on Canine Diabetes in recent years. In 2000 – 2003, a large Swedish study showed that out of dogs diagnosed with diabetes, 55% were overweight or obese, while 20% of dogs from the same age group were of an acceptable weight. (Fall, et al., 2007). A clear correlation between an increase in obesity and an increase in diabetes was found in a study during the years 2007–2012, strongly implying that obesity may be causing an increase in diabetes. (Howard, 2012)

3.3 Cardiopulmonary

Overweight and/or obese dogs have decreased cardiac function and a reduced cardiac contraction percentage compared to non-obese dogs (Pongkan, et al., 2020) Obesity has a negative impact on a dog's respiratory parameters, as concluded by (Manens, et al., 2011)

Obesity is closely associated with cardiovascular disease and hypertension. The adipose tissue produces the peptide angiotensinogen, so excess adipose tissue may play a direct role in blood pressure regulation. (Yvan-Charvet & Quignard-Boulangé, 2011)

Due to the excess fat accumulation pressing against the diaphragm and chest, breathing in obese dogs can become more easily strained (German, 2006). This in turn results in decreased lung capacity as rib and diaphragm expansion ability decreases, and thus as a knock-on effect, overweight and obese dogs have exercise intolerance and reduced cardiovascular fitness (Lund, et al., 2006). Dogs with obesity can have increased vulnerability to respiratory infections due to their immune system being potentially compromised, and therefore making it harder for the dog to fight off infections (German, 2006).

A 2014 study found that obesity negatively and significantly affected cardiopulmonary function and found that following a weight loss programme had significant benefits and improved heart function even before reaching the dog's target weight. (Manens, et al., 2014)

3.4 Urinary Disorders

An investigation of weight loss on plasma and renal biomarkers of kidney health found, although more work is needed to determine the nature and reason, that obesity results in subclinical alterations in renal function that were improved after weight loss. (Tvarijonaviciute, et al., 2012) A 2016 study concluded that the prevalence of asymptomatic bacteriuria was increased in morbidly obese dogs, but more research and investigations are required to link obesity with urinary tract infections. (Wynn, et al., 2016)

Most recently, (Miricescu, et al., 2021) presented findings that diabetic and hypertensive patients due to being overweight or obese, had an increased risk of developing CKD. Obesity and renal fat accumulation affect many renal-related functions and mechanisms, such as RAAS, GRR, blood pressure, GFR, cytokine secretion, etc. They found that weight loss has a positive effect on the body as a whole, including renal functions and glomerular hemodynamics.

4. Body Condition Scoring measuring technique

Body Condition Score (BCS) is a frequently used method for assessing body fat mass in animals, especially in veterinary practice for cats and dogs. BCS involves both palpation assessment and visual observation of subcutaneous fat to determine a score, although it may become subjective when carried out by pet owners without professional guidance. To enhance the accuracy of BCS evaluations conducted by non-professionals, it is recommended to use a measuring tape to measure chest and abdominal girth sizes. (Chun, et al., 2019) BCS scales come in two forms; 1-5 scale and 1-9 scale. Most vets prefer 1-9 scale, as it provides a more accurate range and allows a vet to identify changes that are more subtle in the animals' condition. (Williams & Lynn Buzhardt, 2017)

5-Point scale	**Morphometric methods (zoometry)**
6-Point scale	**MRI – Magnetic Resonance Imaging**
9-Point scale	**Muscle metabolite markers**
Absorptiometry	**Near-infrared interactance (NIRI)**
BMI – Body Mass Index	**Neutron activation analysis**
Body condition score	**Other methods**
Body weight	**Photon absorptiometry**
Chemical analysis	**Single-energy X-ray absorptiometry (SXA)**
Common clinical methods	**Single-photon absorptiometry (SPA)**
Common research techniques	**Subcutaneous**
Computed tomography	**Tape measurements**

Densitometry	**Total body potassium**
Deuterium	**Total body water**
Dual-energy X-ray absorptiometry (DXA or DEXA)	**Tritium**
Dual-photon absorptiometry (DPA)	**Ultrasound**
Electrical conductance (bioelectrical impedance)	**Visceral**
Electrical impedance	**X-ray absorptiometry**
Isotope dilution	

Table 2. *Methods for body composition analysis in dogs and cats* (German, 2006)

5. The current data and literature in Ireland

Unfortunately, data in Ireland based on canine obesity specifically is limited.

Data obtained by the Department of Rural and Community Development helps each year with population statistics (Department, 2022), but when it comes to health status and particularly weight status statistics, there is no governmental or official data collection that the author could find. Therefore, data is collected through surveys created by pet food providers, such as Petmania.ie (Miller, 2020), and completed by willing pet owners, who found that 34% of dogs were not of ideal weight based on the owners' use of the BCS evaluation.

Data regarding the national population of pet dogs is a crucial factor in facilitating well-informed decision-making for both governmental bodies and national dog welfare organizations. This information serves the government in monitoring current policies, including the enforcement of existing legislative measures. (Keogh, et al., 2022) (O'Sullivan & Hanlon, 2012)

Unfortunately, there are significant gaps in the literature regarding canine obesity in Ireland. While the research available for the most part refers to the physiological effects associated with canine obesity, Ireland lacks comprehensive data concerning canine obesity. These gaps in the literature hinder the development of standardized guidelines for veterinarians and pet owners.

Own Investigation:

1) Aim of the Survey:

The aim of the survey was to obtain the perspective of owners regarding feeding, exercise, and the body condition of their companion dog. In this, I was also able to gain insight to the knowledge of dog owners in Ireland.

2) Material and Methods:

2.1 Participants: The survey was posted on the "r/CasualIreland" Reddit page, which has 74,300 members. The post was seen by 8,500 members, and 170 responses were obtained. (One answer was removed for inappropriate language and unreliable data entry) Efforts were made to promote the survey on various social media platforms, including Facebook groups dedicated to owners and their companion dogs. However, the overall response was limited, prompting a refining of the questionnaire to enhance the accuracy of the collected data.

2.2 Survey Design: The survey consisted of a total of 27 questions, with 25 being closed-ended (Appendix). Two questions were excluded from the final analysis – one inquiring about the dog's name and the other offering the option to upload a picture of the respondent's dog for the survey. The questionnaire was designed to gain valuable insights into the exercise and feeding routines of companion dogs. Additionally, it included questions concerning the demographics of owners and their dogs, covering such aspects as breed, weight, age, sex, neuter status, and location of residency. Knowledge-based questions related to BCS were then also asked to assess owners' familiarity with BCS and their ability to apply it to their dog(s) effectively.

2.3 Body Condition Scoring: The survey inquired if participants were familiar with the BCS scale, which is a 1-9 scale. On this scale, a score of 1 represents severe thinness, 5 is the score for ideal, and 9 signifies severe obesity. The survey then provided this brief explanation of the scale and followed it with five images of dogs graded on the BCS. These images included dogs with scores of 1/9, 5/9, 7/9 and 9/9, and a group image of four dogs with a score of 7/9. Respondents were asked to use their own knowledge, the above brief explanation, and a short description of each score value to evaluate the dogs' condition.

After these picture evaluations, a BCS poster of medium dogs is shown, and the participants are asked if they recognize the poster and, if so, have they used it. Following this, they are asked to use the poster to give a score for their own dog.

3.3 Feeding habits: After the respondents answer their dog's ideal weight, if known, they are then asked about the kind of food they provide for their pet, how they portion the food, and the frequency of their dog's meals. They are then also asked to answer if they adhere to the nutrition guidelines set out by their dog food provider concerning their dog's weight or size category. The survey also examines the owners' feeding practices with regard to leftovers and human food, including how often and what type of scraps are given to their companion dogs.

3.4 Activity: In the survey, participants were asked what level of activity their dogs received daily. Following this, they were asked if they thought their dog got enough daily exercise.

3) Results:

Here are the results from the 169 respondents that were accepted for statistical analysis.

3.1) General companion animal information

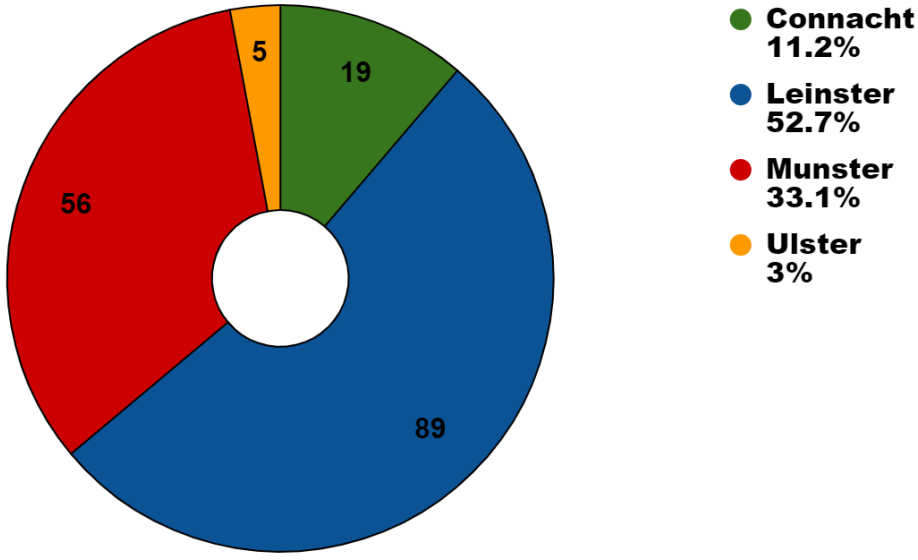


Fig. 1. **Respondents place of dwelling.**

From this data we can say that the majority, nearly 53%, of respondents are from the densest populated area in Ireland. A very small number of people completed the survey from Ulster and the second largest response was from Munster.

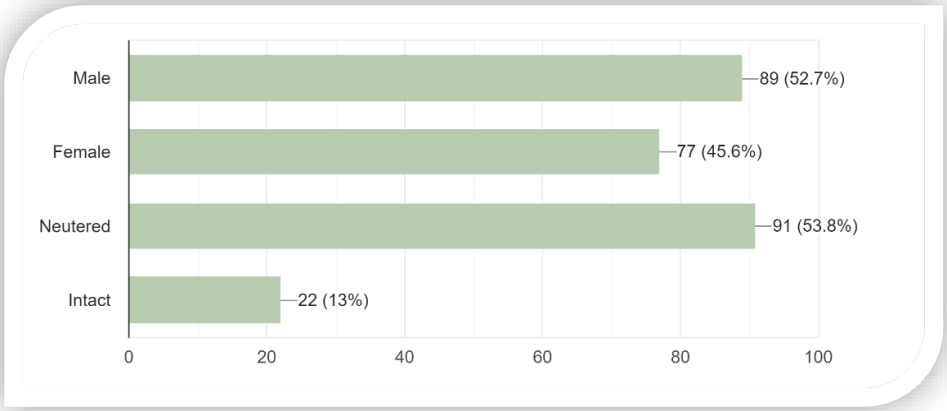


Fig. 2. Representation of sex and neuter status among the surveyed dogs.

A total of 169 repsonses were recorded in this question.

From this graph we can see that 89 males dogs and 77 females were recorded, leaving 3 responses not indicating sex.

Of the total 113 responses regarding nueter status, we can see a clear preferance of owners to have their dog nuetered.

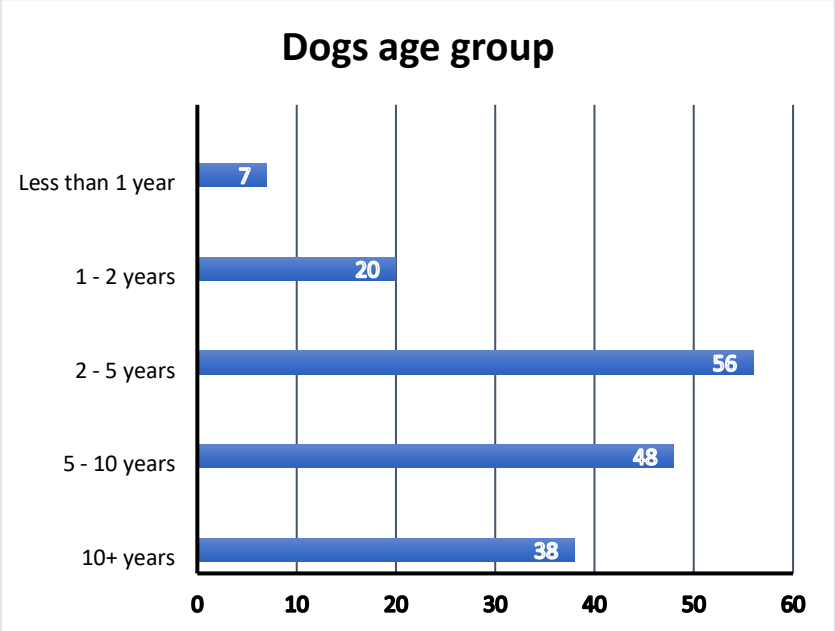


Fig. 3. The ages of dogs surveyed.

We can see from this graph that 56 owners had dogs between 2-5 years of age while 51% of dogs recorded were above 5 years of age, and 16% were under 5 years old.

3.2) Weight related questions

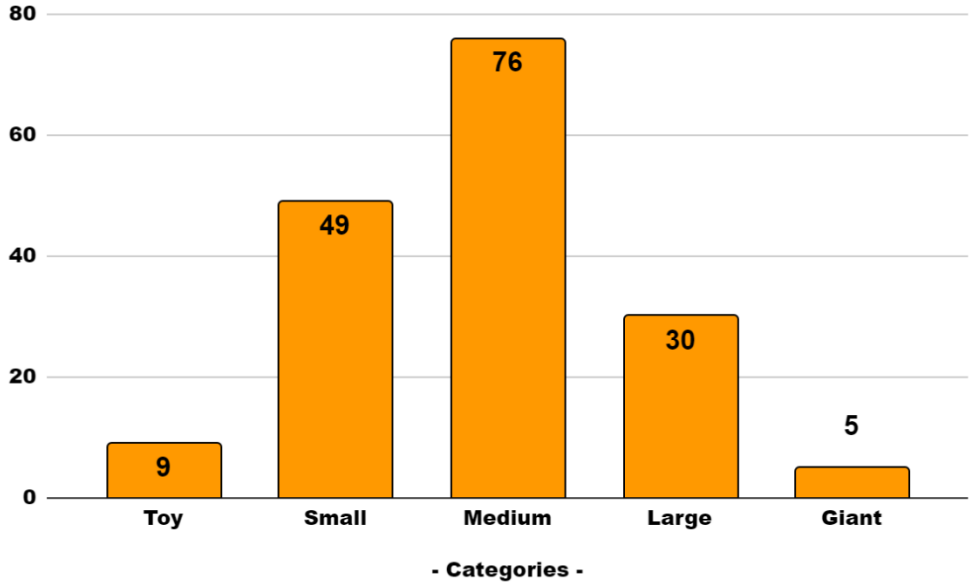


Fig. 4. Categories in which the owners placed their dogs.

Here we can see that 45% of owners had a medium dog, 29% had small and 18% had large, while 5% had toy and 3% had a giant breed.

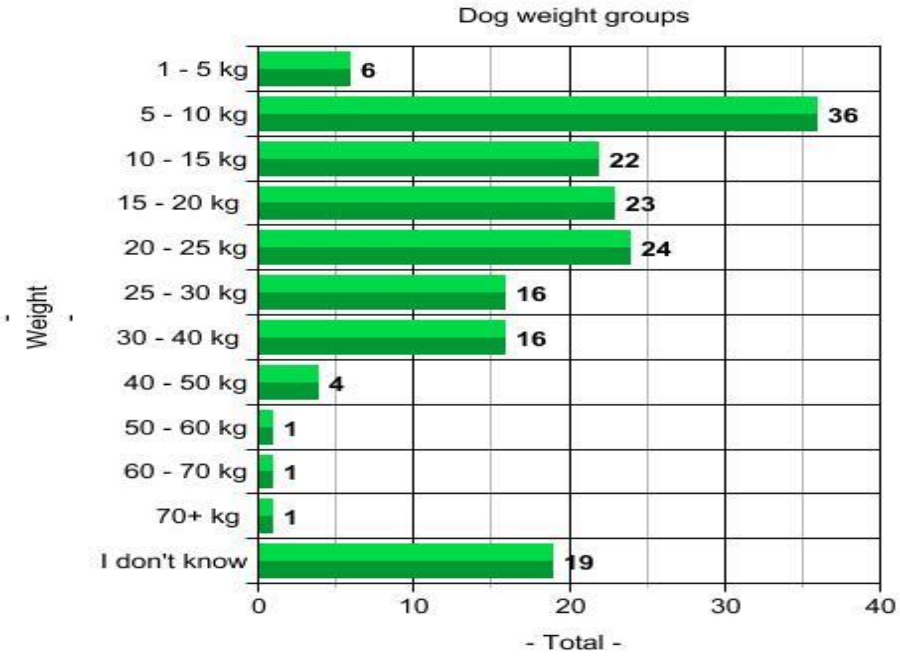


Fig. 5. Ideal dog weight as indicated by owners.

In this graph, data recorded shows the weight groups of the surveyed dogs. 19 (11%) of owners did not know their dog's ideal weight. The 5-10kg group had the largest response with 21%, while 60% of respondents categorized their dog between 10kg and 40kg.

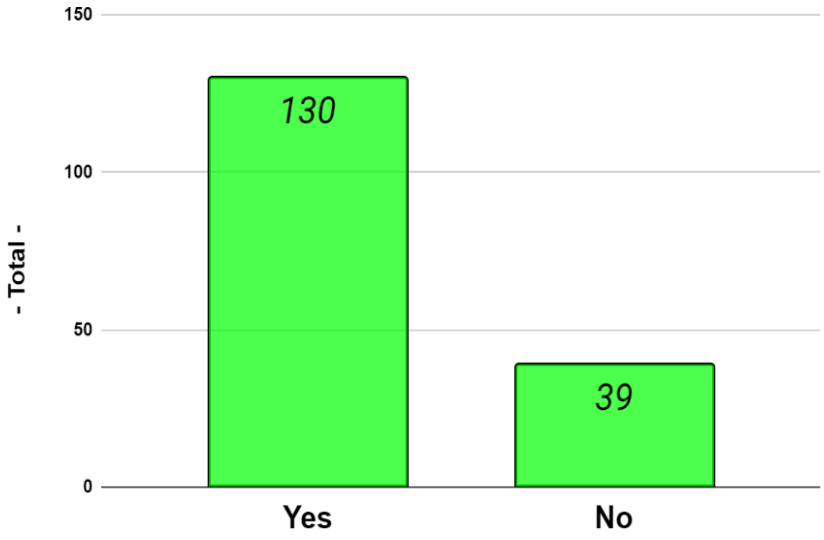


Fig. 6. How many owners are aware of their dog's current weight.

77% of owners knew their dog's current weight, and 23% did not know.

3.3) Body Condition Score

3.3.1) Knowledge

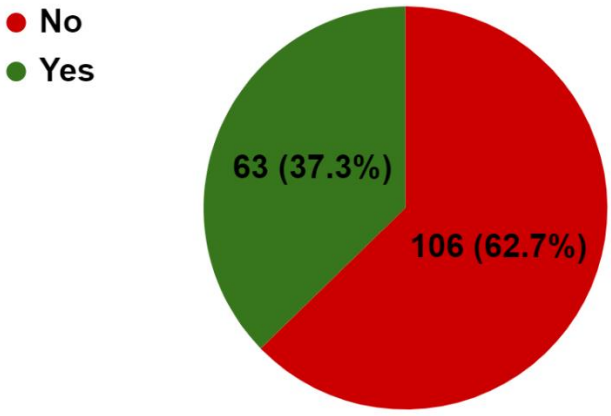


Fig. 7. Are you aware of your dog's Body Conditioning Score.

We see here that the majority (63%) of owners were not aware of the BCS scale system.

3.3.2) Owners Evaluation

The following section of the survey proposed that owners attempt to give a BCS score to example pictures of dogs.

Picture 1

- This dog was officially scored a 7/9
- 29 people scored 5/9
- 83 people scored 6/9 (49.1%)
- 39 people scored 7/9 **(23.1%)**
- 13 people scored 8/9
- 2 people scored 9/9
- 4 people scored otherwise.

Picture 2

- This dog was officially scored a 5/9
- 24 people scored 4/9
- 135 people scored 5/9 **(79.9%)**
- 2 people scored 6/9
- 1 person scored 7/9
- 7 People scored otherwise.

Picture 3

- This dog was officially scored a 9/9
- 133 people scored 9/9 **(78.7%)**
- 28 people scored 8/9
- 6 people scored 7/9
- 2 people scored otherwise.

Picture 4

- These were officially scored a 7/9
- 65 people scored 5/9
- 73 people scored 6/9 (43.2%)
- 23 people scored 7/9 **(13.6%)**
- 4 people scored 8/9
- 4 people scored otherwise.

Picture 5

-

- This dog was officially scored a 1/9
- 28 people scored 1/9 **(16.6%)**
- 56 people scored 2/9 (33.1%)
- 43 people scored 3/9
- 33 people scored 4/9
- 9 people scored 5/9

Based on these findings, 42.4% of the responses were accurate. Notably, the ideal (depicted in picture 2) and severely obese (depicted in picture 3) individuals received a substantial number of correct responses. In contrast, the remaining categories witnessed a larger proportion of respondents who were only one grade away from the correct Body Condition Score (BCS).

Overall, from these examples, 57.6% of the answers were incorrect.

3.3.3) Home Use

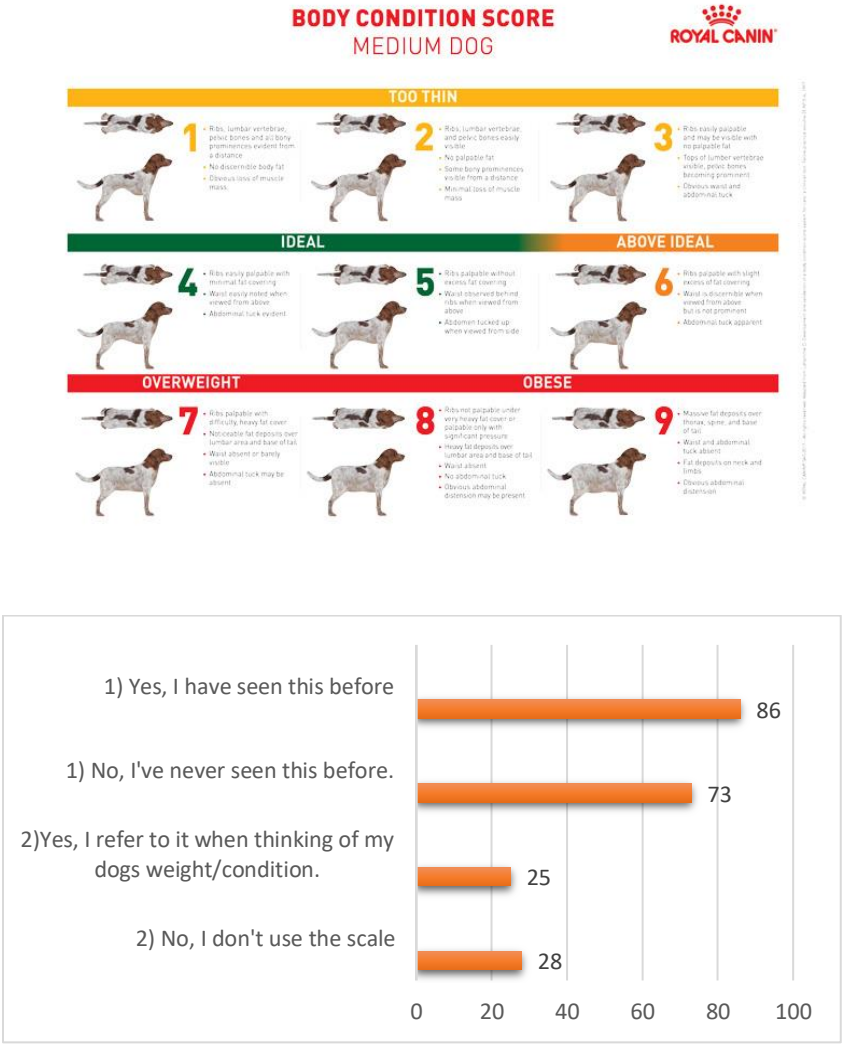


Fig. 8. ***1) Have you seen a poster like this before? Possibly, in your local vet clinic. (if yes, please answer part 2) 2) Have you been able to use this scale to estimate your own dogs' weight/condition?"***

The purpose of this question was to show whether people had seen the poster and used it at home. The results of this question shows that although 86 people (*51%*) have seen the poster, of all the respondents, 28 people (*16.5%*) do not use the scale. While at least 73 people (43.2%) have never seen or noticed the poster before, and, as a result, they don't use it either

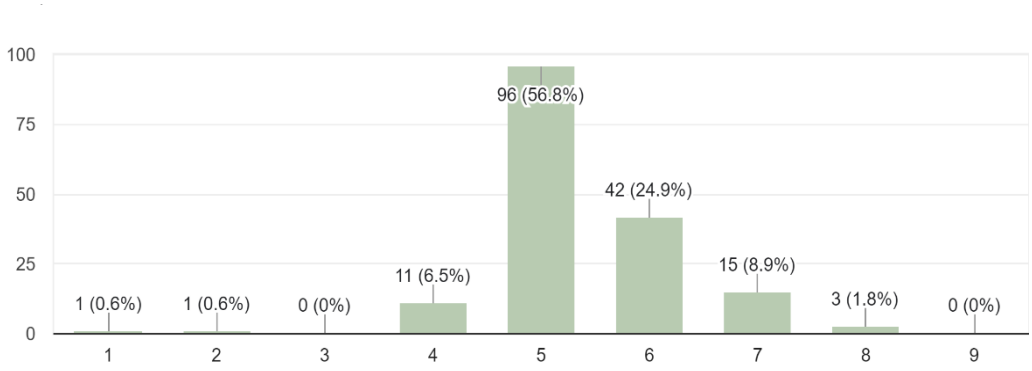


Fig. 9. Owners BCS evaluation of their own companion dog

"So based on this scale, what would you score your dog?"

Once given the poster and having estimated the example pictures, the participants were then asked to use the BCS scale to score their own dog.

The results showed that the majority, 56.8%, had given their own dog a perfect score, while 35.6% gave a higher score, indicating their acknowledgment of their dogs being overweight.

NOTE: BCS 1 & 2 also got a score each but are considered outliers/misinformation.

3.4) Feeding.

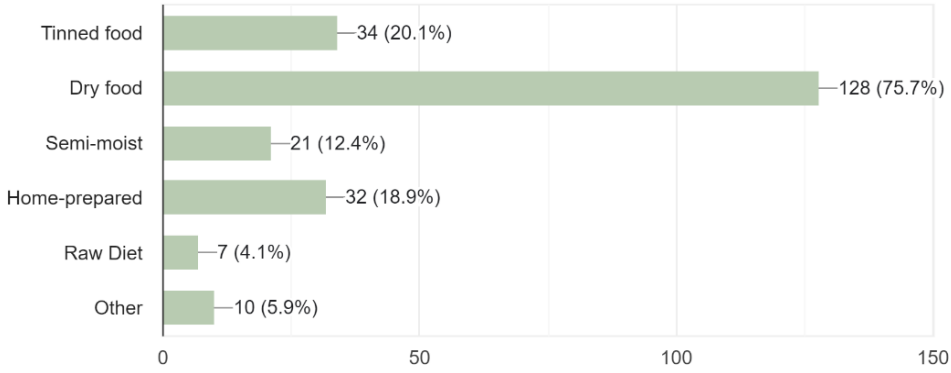


Fig. 10. "What type of food do you give your dog?"

In this question there is overlap in answers as some owners feed a mix of food, such as dry and semi-moist food, but we can clearly see a majority (*75.7%*) of people feed with dry food.

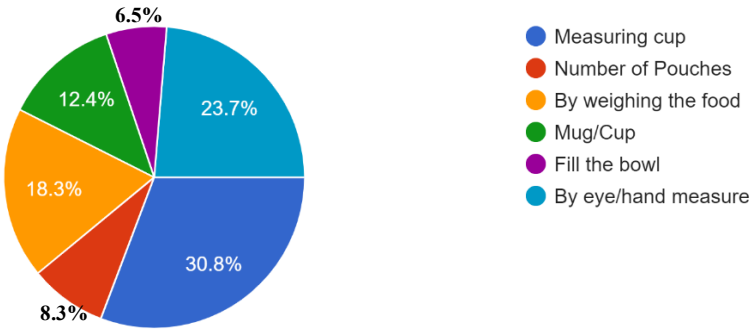


Fig. 11. Method of feeding used by owners

Here we see that 30.8% of owners use a measuring cup, 23.7% of owners measure food by eye, and 45.5% of owners used a different method.

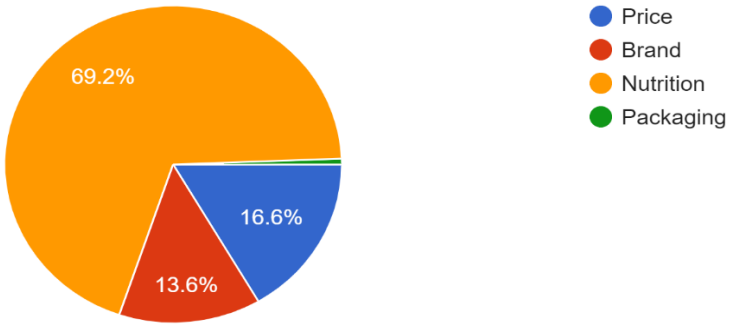


Fig 12. How owners choose dog food

This graph shows us that nearly 70% of people consider nutrition as the priority factor when choosing a dog food for their pet.

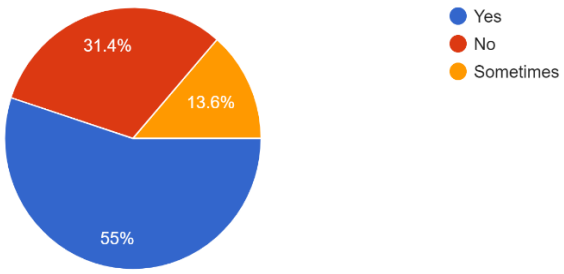


Fig. 13. Do you follow the feeding instruction on the dog food packaging in accordance with your dog's ideal weight?

This graph shows that 55% of people follow the food packaging instructions in accordance with the requirements of their dog.

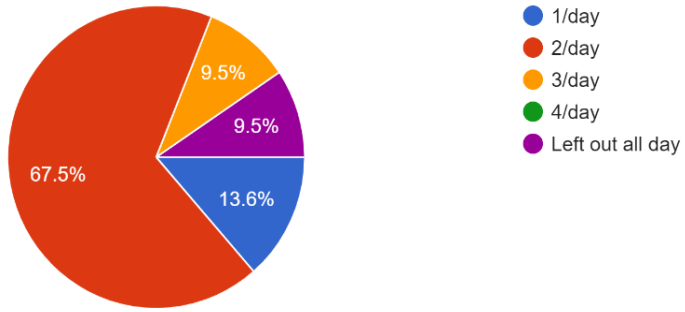


Fig. 14. How often respondents feed their dog.

Here we see that the majority of respondents feed their dog twice a day.

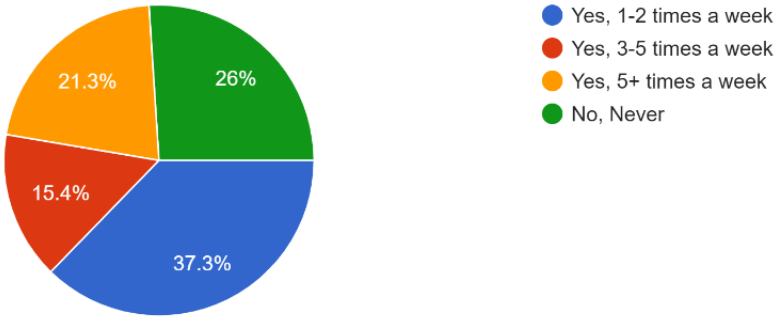


Fig. 15. Does your dog get scraps from the kitchen table, left-overs or "human food"?

A striking result as 74% of people gave their dog scraps of some kind each week. While 26% of people never gave scraps or human food to their companion dog.

"Scraps"/ "human-food" types recorded included.

- Cooked and raw meat, bones, carcass, ham, fish, chicken, turkey, tuna, eggs, liver
- Carrots, potatoes, different vegetables and fruits, bread, rice
- Leftovers from whatever was for dinner that night.
- Biscuits, toast, fries, yogurt, crips, popcorn, different cheese

Most people used cooked meat and vegetables and otherwise regularly regarded as healthy food for a dog, while a small few gave more unsuitable items such as crisps, fries, and biscuits. Cheese was used as treats during training in some cases.

3.5) Activity levels

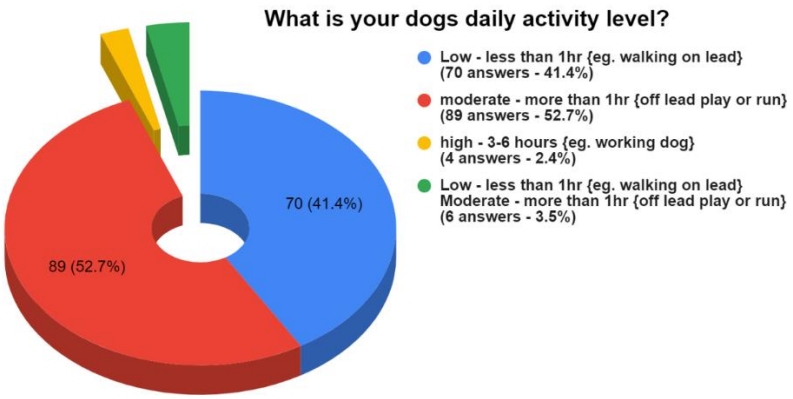


Fig. 16. Daily activity level for companion dogs

Respondents indicated a low activity level in 41.4%, while 52.7% reported a moderate activity level, and only 2.4% of respondents reported that their dog got a high level of activity, with 3.5% reporting a mix of low and moderate.

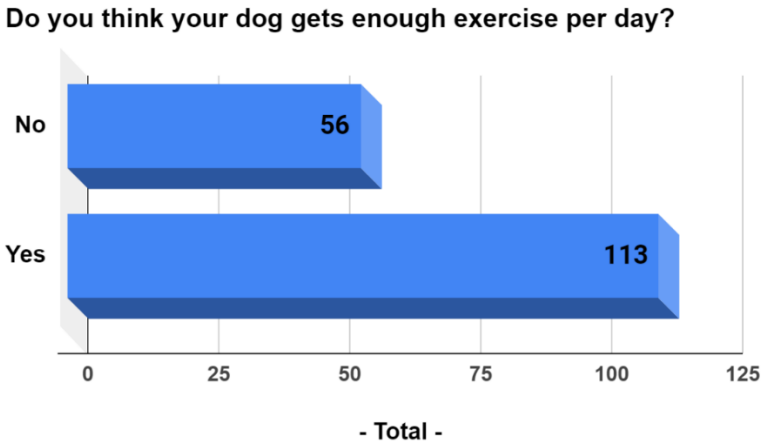


Fig. 17. Owners' opinion on their dog's daily exercise.

113 owners (*67%*) said they believe their dogs get enough daily exercise, while 33% said they don't.

3.6) Post survey question.

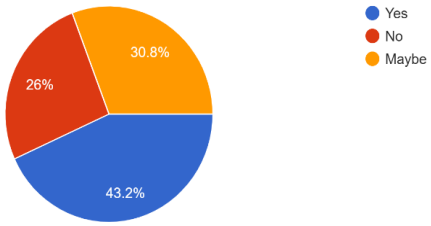


Fig. 18. Willingness of owners to ask further questions of their vet concerning their dogs weight status.

Here we see that 43.2% of owners think they will ask their vet about their dog weight status in their next vet visit, while 26% said "No", and 30.8% said "Maybe".

Discussion:

This study aimed to understand the weight status of companion dogs in Ireland and gain insights into owners' perspectives on canine obesity. With limited official data on this issue in Ireland, the study sought to expand existing knowledge by conducting a survey. The findings revealed that while most owners were aware of their dogs' weight concerns, many were unfamiliar with Body Conditioning Scoring and struggled to assign the correct BCS based on a picture. The study also highlighted that Irish companion dog owners frequently fed their dogs leftovers and scraps and perceived that their dogs received sufficient daily exercise.

The first objective of this study was to assess the worldwide landscape of canine obesity, enabling a comparison with the situation in Ireland. The prevailing consensus on canine obesity globally indicates that approximately 40-60% of companion dogs are either obese or, at the very least, overweight, as well researched by (German, 2006). While precise data confirming this estimate in Ireland is lacking, it can be reasonably inferred from established research surveys that this estimate holds true, and the global research applies to Ireland. This gap in the literature was unexpected, as the topic of obesity in Irish companion dogs is well known in the veterinary world. A possible reason for this gap is that it is difficult to design a good survey or study to achieve a high level of accurate results due to the nature of the subject. If such a study can be designed and successfully fulfilled, then it would provide a great insight into the current situation of companion dog obesity in Ireland. This research could help realign owner perceptions of obesity and canine health at home. Surveys carried out by researchers such as (PDSA Animal Wellbeing (PAW), 2023) provide great knowledge to the industry and could be implicated in Ireland with the combined help of owners, government, and veterinarians. The results could help further our understanding and help discover solutions to the causes and mindset around canine obesity. This study, to a degree, showcases the need for more research and data collection. It provides a glance at the situation and the parallels to worldwide research. Limitations have impacted the study due to the gaps in the literature. A clearer picture of Ireland’s status regarding obesity in companion dogs could have helped refine the survey and allowed for more precise study construction. For future

research, it is recommended that a larger respondent pool be considered and a more refined approach be applied. An aspect of teaching and educating companion dog owners of the risks and consequences could also be advantageous to discovering plausible solutions.

Aligning with many other studies completed across the world, another key objective of this study was to discover the ability of Irish companion dog owners' ability to utilise a BCS system. This study, based on Irish participants, demonstrated correlation with studies outside of Ireland by (Courcier, et al., 2010) (Lindåse, et al., 2021)and (PDSA Animal Wellbeing (PAW), 2023). Owners' awareness of their dog's ideal condition and their ability to perform an accurate BCS was found to be limited, with many owners missing the correct BCS of the given example dogs by 1- 2 scores which parallels the findings of (Bland, et al., 2009). As seen in *fig.10*, more than half of owners scored their own dog as in perfect condition, and while this result was expected, it shows a good insight to the mindset of owners, as they tend to believe that their companion dog is in good condition. The result of *fig,10* is subject to criticism for the inaccuracy of the picture analysis and scoring completed by the owners. This inability to identify an accurate BCS may be a consequence of the owner's lack of knowledge about canine body condition and misguided perceptions. This result was expected and may be influenced by the upward social trend of overweight dogs being regarded as having a normal weight, as evident in the study by (Freeman, et al., 2006). This builds on the existing evidence of (Kluess, et al., 2021) which indicates a need to further owners' awareness and comprehension of canine body condition and their capacity to identify the optimal condition for their companion dogs. This study shows that there is room to improve on the owners' side of home care in relation to gauging the BCS of companion dogs, and the study shows that Irish owners fit the global image of owner ability to use the BSC system. The BCS system is based on both visual and palpable evaluation, and thus the possibility of error cannot be ignored in the task presented in the owner's survey to award a BCS to only pictures of example dogs. This may appear as a minor limitation, but it also serves as an indication of owners' misconceptions. The reason for this is that the most incorrect answers were scored closer to the ideal, possibly suggesting that these scores were perceived as closer to today's social norm. For more concise and reliable

results, conducting in-person evaluation tests could yield improved outcomes. This approach offers a promising avenue for future research. It is advisable to design a controlled study to assess owners' ability to use the Body Condition Scoring (BCS) system before and after receiving a detailed explanation and example. Involving veterinarians in this practical aspect would greatly enhance the study's results. To obtain a broader range of data, implementing this plan across veterinary clinics in all counties in Ireland is recommended. Extending the study over a longer duration, with owners repeating the test after a significant time lapse, would allow for a more comprehensive evaluation of the educational impact of the study.

A further objective was to gauge the patterns of feeding that the survey participants provided to their companion dogs. The study found that the number of owners who give their dogs “human food”, or “scraps”, was exceptionally high at 75% and may be a cause of excess fat accumulation, as was found by (Heuberger & Wakshlag, 2011) in their study. This met the expectations of the author but exceeded in level. This is a significant finding, as it is solely up to the owner to distinguish the correct type of food to provide and what nutritional value it contains. This study result implies similarities with the findings of (Downes, et al., 2017) as owners must exercise control in the household and may be swayed by multiple members of said household practicing different feeding routines for the companion dog. Commercial dog food has the nutritional information provided and thus can indicate, with greater accuracy, a feeding routine for the owner to follow. From the result of *fig. 14*, it can be surmised that owners, although they consider nutrition to be the main factor for choosing a particular dog food, its nutritional advice is somewhat ignored. This discovery from this survey leads to the conclusion that there is a degree of need for owners to be more educated on feeding habits and the potential consequences of misfeeding. There are of course, “scraps” and leftovers that can be acceptable to our canine companions, and this survey uncovered many that are commonly regarded as acceptable, such as chicken, ham, fish, vegetables, and some starches, but compared to such items as biscuits (if not dog biscuits) and crisps, which are not recommended. A closer investigation here would have been beneficial to the analysis of the results.

An insight into the owner's own lifestyle, so that it could be compared to the exercise opportunities provided to the companion dog, as (Lorin, 2016) study found a good correlation between these aspects, would be beneficial for comparisons.

Concerning future studies and research, a more detailed questionnaire delving into the feeding aspects and a practical observational study to evaluate the daily feeding routine over an extended period of time could provide valuable results.

Activity levels accounted for by the owners were unexpected, with the majority of owners reporting that their companion dog received enough exercise, although a concerning amount reported that their dog was provided with only a low level of activity per day. A more concise data analysis is necessary, but it can be hypothesized that owners may perceive canine exercise requirements as lower than they are, and thus the results of this inquiry may be misleading. This perception of activity level may consequentially increase the likelihood of having overweight dogs, as observed by (German, et al., 2017). Unfortunately, there was no collection of detailed information about exercise routines, which resulted in a missed opportunity for potential data gathering and analysis. It is recommended for studies hereafter, that more detailed surveys be designed around the aspect of exercise routine of companion dogs and advised to construct a method of practical evaluation.

The final objective was to understand if owners would be willing to discuss their dog's weight during future vet visits. Surprisingly, only 43.2% of owners indicated they would do so. This low response suggests various possibilities, including a lack of concern among owners, the survey not addressing this issue effectively, or owners feeling that their own judgement of their dog's condition is adequate. The result underscores the need for more comprehensive education on the risks of obesity in companion dogs and the necessity for owners to take this matter seriously, given its prevalence in today's society. The study did not investigate why some owners would not inquire about their dog's Body Condition Score (BCS), missing an opportunity to gain insights into their perspectives. In future research, including such a question could help identify areas where owners might need more information or clarification regarding their overweight companion dogs in Ireland.

Results analysis:

General demographics:

The perspective of owners was also a goal that this study aimed to discover through the means of a survey.

To begin, the survey initiated its findings by establishing the demographic profile of the participants. It revealed that 53% of the respondents hailed from the most densely populated region in Ireland, namely the province of Leinster, home to the capital city, Dublin. It stands to reason that a substantial portion of the canine population is concentrated in this area.

The survey further documented a majority of male dogs (89 males compared to 77 females, as depicted in Figure 1), with 91 out of 133 respondents indicating that their dogs had been neutered. This outcome aligns with the prevailing practice of neutering companion dogs in Ireland, as corroborated by the data illustrated in Figure 2.

The final demographic insight gained from the survey was that 51% of the recorded dogs were aged above 5 years. This finding is consistent with expectations, given the trends observed in dog licensing data from the Department of Rural and Community Development in Ireland. This data indicated a steady increase in registered dogs since 2012, with a slight upturn in 2018 and a subsequent decrease in 2020.

The survey revealed that companion dog owners preferred a variety of dog sizes, with small to large dogs (as depicted in Figure 4) being the most popular, while medium-sized dogs emerged as the most common choice. Although the survey lacked a standardized scale for owners to gauge their companion dogs' size against, it is noteworthy that owners' assessments generally aligned with the ideal weight of companion dogs, as evident in Figure 5.

Interestingly, the hypothesis that owners might have a skewed knowledge of their companion dogs' weight status proved unfounded. Encouragingly, 77% of owners knew their dogs' current weight, as depicted in Figure 6.

Body condition scoring:

In relation to owners' perspectives on addressing canine body conditioning, it was initially inquired whether they were aware of their dog's Body Condition Score (BCS). The results indicated that 62.7% of owners were not familiar with their dog's BCS, while 37.3% did possess knowledge about their dog's BCS. Subsequently, when assessing this knowledge, only 42.4% of participants were able to accurately identify an example dog's BCS based on a picture.

Furthermore, when owners were asked to assign a BCS to their dogs at home, 56.8% of them assigned a perfect score, aligning closely with the finding of (Kluess, et al., 2021) where 52% of owners accurately scored their dogs at home. It is worth noting, however, that this result does not align with owners' knowledge of their dogs' ideal BCS or the BCS picture questions, as previously mentioned, and so a degree of error is expected.

Feeding:

Establishing a dog's feeding routine and diet composition is of paramount importance for their overall health and body condition. This survey revealed that 49.7% of owners exclusively fed their companion dogs dry food, while 75.7% of participants incorporated a combination of dry food and other food types in their dogs' diets. These statistics are consistent with findings from the study conducted by (Kluess, et al., 2021). Moreover, 30.8% of respondents employed a measuring tool to portion out the food, while 23.7% estimated quantities using a hand/eye method.

The survey also revealed that 69.2% of owners prioritized nutrition when selecting dog food, and 55% adhered to the feeding instructions provided on the packaging. Additionally, the survey discovered that only 26% of owners never offered their companion dogs leftovers, scraps, or human food, while 74% did so to varying degrees on a weekly basis.

Activity levels:

Owners bear the responsibility of ensuring their companion dogs receive adequate exercise. Among the respondents, 52.7% stated that they offered a moderate level of activity, which involved more than one hour of off-leash play or running, while an additional 41.4% indicated a lower level, involving less than an hour of daily exercise.

It is widely accepted that dogs receiving less than one hour of sufficient exercise per day are at a higher risk of obesity unless changes are made to rectify this issue and their diet is effectively adjusted to compensate for their reduced physical activity. This claim is held true by a substantial UK study conducted by (German, et al., 2017)

This survey found that 67% of respondents believed that their companion dogs received adequate exercise. However, only 56% of owners reported providing more than one hour of exercise, leaving 11% of respondents giving the impression that the limited level of exercise was both efficient and sufficient for their companion dog.

- 11% of owners were unaware of their dog's ideal weight. (*fig. 5*)
- 23% were uncertain about their dog's current weight. (*fig. 6*)
- A significant 62.7% of individuals lacked knowledge regarding their dog's Body Condition Score (BCS). (*fig. 7*)
- An alarming 57.6% of BCS picture example responses provided were inaccurate.
- 42% of owners assigned their companion dog a BCS differing from the ideal score. (*fig. 9*)
- A concerning 45% of owners did not adhere to the feeding instructions on their dog food packaging. (*fig. 13*)
- A concerning 74% of owners incorporated scraps, leftovers, or human foods into their dog's diet. (*fig. 15*)
- 41.4% of owners reported that their dogs received a low level of exercise. (*fig. 16*)
- One-third (33%) of owners believed their dogs were not receiving an adequate amount of daily exercise. (*fig. 17*)

Willingness to gain more information.

It's noteworthy that only 43.2% of owners expressed their intention to seek more information about their dog's weight during their next visit to the veterinarian.

The challenge of overweight and obese companion dogs will persist in Ireland and across the globe unless owners exhibit a proactive willingness to enhance their understanding and shift their perspectives concerning canine health.

CONCLUSIONS:

SUMMARY OF FINDINGS:

This study delved into the complex issue of obesity in companion dogs within the context of Ireland. Through an extensive review of existing literature, it became evident that canine obesity is a multifaceted problem influenced by a variety of factors, including diet, exercise routines, genetics, age, sex, and the overall influence of dog owners. Current prevalence rates worldwide reveal a troubling trend, and the findings of this research demonstrate that the global patterns of research can be extended to encompass obesity rates among companion dogs in Ireland.

Obesity and overweight in companion dogs not only impact their physical health but also result in behavioural changes and a diminished quality of life.

IMPLICATIONS OF THE STUDY

In the fight against canine obesity, this study shows the responsibility of dog owners cannot be overstated. Acknowledging the significance of their role is essential. As this research underscores the urgent need for awareness campaigns and the education of pet owners, it becomes apparent that individual choices regarding balanced nutrition and regular exercise have a profound impact on their canine companions. Collaboration between veterinarians and pet food manufacturers can pave the way for specialized diets that facilitate weight management, demonstrating the crucial role that the industry can play in curbing canine obesity. Furthermore, urban planning initiatives promoting dog-friendly spaces and encouraging physical activities for dogs are vital steps toward addressing this issue. By recognizing their pivotal role and embracing a proactive approach, dog owners can make a substantial difference in the health and well-being of their beloved pets. The right attitude and the right choices result in a happier dog and a longer, healthier life too.

Limitations of the study

This quantitative study utilized a limited sample from the Irish dog-owning community, which, in turn, limits the scope of its conclusions. Owners' perspectives were examined, and as such, it is imperative to consider potential errors or inaccuracies in their responses. Nevertheless, it's worth noting that the study aligns with estimates and findings from

global literature reviews. The research suggests that in the Western world, where a higher income is more widespread, canine obesity is on the rise, mirroring the trends seen in humans.

Recommendations for future research:

While this study highlights various aspects of canine obesity, there are aspects that further investigation would be beneficial to. Long-term studies examining both feeding and exercise practices, with a specific focus on owners' awareness of the daily care requirements for canine companions, are essential. Research exploring the genetic predisposition of specific breeds can offer valuable insights into preventive strategies. Additionally, qualitative studies delving into the experiences of pet owners with obese dogs and addressing the repercussions of this can provide a unique perspective. Gaining an understanding of the challenges they face and the necessary support systems can aid in the development of effective interventions and awareness campaigns.

Final conclusions:

In conclusion, the obesity epidemic affecting companion dogs in Ireland is a pressing concern that requires immediate attention. By comprehending the root causes, health implications, and societal factors contributing to canine obesity, we can develop comprehensive interventions. Collaborative efforts involving veterinarians, policymakers, the pet industry, and especially dog owners can bring about a significant positive change in the lives of companion dogs. Addressing this issue not only enhances the well-being of dogs but also develops a healthier and more responsible pet-owning culture within Irish society.

SUMMARY:

The problem of companion dog obesity is multifactorial, but many of the causes originate from the owners. The owners directly influence the lifestyle, diet, and exercise of their canine companions, and therefore the outcomes of that influence. An owner has a duty to be aware of any predispositions their companion dog breed may have. In terms of lifestyle, an owner's lifestyle must be free to accommodate the needs of a companion dog before getting one. Owners must be aware of and capable of fulfilling the activity needs of their companion dog. They must also conform to a diet to which their dog is best suited. These two factors go hand-in-hand with each other, as high activity requires high energy, and it is this energy expenditure and energy consumption balance that is critical to sustaining a stable ideal weight. Correct diet and correct activity are a few basic requirements of dog ownership in Ireland and are a legal requirement.

Owners are responsible for the lives and health of their companion dogs, as well as, the impacts of their decisions, including neutering and how it affects their dog afterwards. As seen in Table 1., an overweight or obese dog is far more prone to disease and health issues. The economic impact is far too often seen, as treatment for such health consequences can widely vary. The impact is often not just financial but can also be emotional. Many owners would consider their pet as part of the family, and thus, when they are sick, it has an emotional cost for the owner.

As the gaps in the literature are significant regarding canine obesity in Ireland, this study collected data related to owners' perspectives and lifestyles concerning their companion dogs through the use of a survey. After analysis of this data and consideration of limitations, it can be concluded that the global situation surrounding canine obesity applies to Ireland as well.

Appendix:

QUESTIONNAIRE

A SURVEY ON CANINE BODY CONDITIONING AND OWNERS' PERCEPTIONS.

This survey has been created to analyse dog owners' perspectives on their dog's weight and Body Condition. This information will be used in a thesis - "A study of obesity among companion dogs in Ireland" It will ask the reader to condition score some pictures of dogs to see the perspective of the owner.

* Indicates required question

1. Which province in Ireland are you located? *

   Munster / Leinster / Ulster / Connacht

2. What's your dog's name?

   _____

3. What is your dog's sex? *

   Male / Female / Neutered / Intact

4. What category is your dog? *

   Toy / Small / Medium / Large / Giant

5. What age is your dog? *

   Less than 1year / 1-2 years / 2-5 years / 5-10 years / 10+ years

6. Do you know your dog's current weight? *

   Yes / No

7. Are you aware of your dogs 'Body Conditioning Score'? * *Yes / No*

   {This is a scale veterinarians use to estimate an animal's general weight related health status with consideration of fat and muscle.

   1 represents severely thin, 5 is ideal while 9 is severely obese. (See example on next question)}

8. Body Condition Score*

a. What score (1-9) would give this dog? (each dog had an individual question)

- 1 - Severely thin
- 2 - Very thin
- 3 - Very underweight
- 4 - Underweight
- 5 - Ideal
- 6 - Overweight
- 7 - Very overweight
- 8 - Obese
- 9 - Severely obese

b. 1) Have you seen a poster like this before? Possibly, in your local vet clinic. (if yes, please answer part 2) *
2) Have you been able to use this scale to estimate your own dogs' weight/condition?

1) Yes, I have seen this before
1) No, I've never seen this before.

2) Yes, I refer to it when thinking of my dogs' weight/condition.
2) No, I don't use the scale

c. So based on this scale, what would you score your dog?

- 1 - Severely thin
- 2 - Very thin
- 3 - Very underweight
- 4 - Underweight
- 5 - Ideal
- 6 - Overweight
- 7 - Very overweight
- 8 - Obese
- 9 - Severely obese

9. What is your dog's ideal weight? (kg) *

- **I don't know.**
- **1 - 5kg**
- **5 - 10kg**
- **10 - 15kg**
- **15 - 20kg**
- **20 - 25kg**
- **25 - 30kg**
- **30 -40kg**
- **40 - 50kg**
- **50 - 60kg**
- **60 - 70kg**
- **70+ kg**

10. What type of food do you give your dog? *

Check all that apply.

- **Tinned food**
- **Dry food**
- **Semi-moist**
- **Home-prepared**
- **Raw Diet**
- **Other**

11. How do you measure the food amounts for your dog? *

- **Measuring cup**
- **Number of Pouches**
- **By weighing the food**
- **Mug/Cup**
- **Fill the bowl.**
- **By eye/hand measure**

12. Do you follow the feeding instruction on the dog food packaging in accordance to your dog's ideal weight? *

- **Yes**
- **No**
- **Sometimes**

13. How often do you feed your dog? *

- **1/day**
- **2/day**
- **3/day**
- **4/day**
- **Left out all day.**

14. Does your dog get scraps from the kitchen table, left-overs or "human Food"? *

- **Yes, 1-2 times a week.**
- **Yes, 3-5 times a week.**
- **Yes, 5+ times a week.**
- **No, never.**

15. If your dog gets "scrap / human food", please let us know with a brief description. eg, raw or cooked meat, on a bone/carcass, sweets, fruit, vegetables etc..

16. What is your dog's daily activity level? *

Check all that apply.

- [ ] **Low - less than 1hr (eg. walking on lead)**
- [ ] **Moderate - more than 1hr off lead play or run.**
- [ ] **High - 3-6 hours eg. working dog**

17. Do you think your dog gets enough exercise per day? *

- ◯ **Yes**
- ◯ **No**

18. When choosing a dog food, what do you look for first? *

- ◯ **Price**
- ◯ **Brand**
- ◯ **Nutrition**
- ◯ **Packaging**

19. Thank you for completing the Survey!!!! *

Do you think you will ask your vet more about your animal's weight and Body Condition Score at the next visit?

Yes / No / Maybe

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