

A Netnography Study Relating to Raw Meat-based Diets for Pets

Veronika Bulochova^{1*} and Ellen W. Evans²

¹Cardiff School of Sport and Health Sciences, Cardiff Metropolitan University, Cardiff, United Kingdom.

²ZERO2FIVE Food Industry Centre Food and Drink Research Unit, Cardiff Metropolitan University, Cardiff, United Kingdom.

*Corresponding author: st20145898@outlook.cardiffmet.ac.uk



HELIX

Food Industry Centre
Cardiff Metropolitan University

ZERO2FIVE Food & Drink Research Unit
Uned Ymchwil Bwyd a Diod



Prifysgol
Metropolitan
Caerdydd



Abstract

In recent years, raw meat-based diets for domestic cats and dogs have increased in popularity in the UK. Given the association of raw meat with foodborne pathogens, concerns have been raised, regarding the potential health risks to pet-owners when storing, handling and preparing raw meat-based diets for pets.

A netnography study was conducted to explore pet owners' food safety perceptions and practices, regarding raw meat-based pet diets, and websites were reviewed to determine food safety information provision from raw pet food manufacturers/suppliers.

Forum posts ($n=308$) from 'PetForums' (the UK's most popular pet-owners' community social site) archives, relating to 'raw feeding' and 'food safety' were obtained and reviewed using a thematic analysis approach. Manufacturer/supplier websites ($n=33$) were reviewed for provision of food safety guidelines on raw pet feeding.

Although pet owners indicated awareness of pathogens and potential food safety risks, forum posts indicated confusion, regarding appropriate food safety practices when preparing raw meat-based pet food. Pet owners indicated potential food safety malpractices and indifference towards the potential hazards. Pet-owners did not perceive foodborne illness to be a risk to them, suggesting the perception of invulnerability. Lack of time, information shortage and optimistic bias may be contributory factors for neglecting appropriate food safety practices.

The majority of manufacturer/supplier websites (61%) did not provide any food safety instructions or warnings to pet-owners in relation to raw meat-based pet food. The most comprehensive sources of information were provided by manufacturers approved by UK Pet Food Manufacturers' Association. Information, detailing freezing, thawing and refrigeration were most frequently included; information, particularly regarding cross-contamination, was inconsistent and varied between different sources.

Findings from this study indicate that pet-owners need to be adequately informed of potential risks and of appropriate food safety practices to mitigate risks when providing raw meat-based diets for pets.

Introduction

In recent years the trend of raw meat-based feeding of domestic pets (cats and dogs) has increased in popularity. Many concerns have been raised regarding pet-owners safety in relation to the raw feeding practice^{6,10}. In general, raw meat-based feeding involves feeding unprocessed meat products and by-products that do not undergo any thermal processing to pets. Such diets can be home-made, purchased in specialised shops or online.

The presence of pathogenic bacteria in commercially available raw meat-based food for pets has been previously investigated¹⁻⁵. Pathogen transmission can occur via direct/indirect contact with pet food, contact with infected animals and through cross-contamination of domestic environment.

Currently there is a lack of data, detailing the food safety perceptions and practices of pet-owners who provide raw meat-based diets to pets.

This study aimed to explore the self-reported perceptions and practices of the pet owners who provide raw meat-based diets to pets and review the provision of the food safety information, regarding this practice, by the manufacturer/supplier websites.

Methodology

This study consisted of two main stages of data collection:

- Forum posts ($n=308$) obtained from 'PetForums Community' archives⁷, were reviewed using a content-analysis approach for emerging themes relating to 'raw-feeding' and 'food-safety'.

- Manufacturer/supplier websites ($n=33$) were reviewed for provision of food-safety guidelines for pet-owners on raw meat-based diets for pets.

Results

Netnography review of the forum comments

The review of the forum comments ($n=308$) revealed that pet-owners, who feed raw meat diets, indicated awareness of food safety, but often reported potential malpractices (as seen in Table 1). It has been determined that lack of knowledge about the potential hazards and 'optimistic bias' may often serve as reasons for neglecting food safety practices in the household where raw meat-based diets are provided to pets.

Table 1. Results of the Netnography review

Attitudes, Beliefs and Emotional Response to threat	Food Safety Knowledge and Risk Perception	Motivation and Experience	Self-Reported Food Safety Practices
<ul style="list-style-type: none"> • Most commonly expressed attitudes were that raw meat is 'better' and 'safer' than the manufactured pet food (Comments 57 and 76). • Pet-owners expressed worry over the safety of their pets and their children, but not their own safety (Comment 12). 	<ul style="list-style-type: none"> • Pet-owners could name the main pathogens that can be present in raw meat, but were often confused about the ways to minimise the risks (Comment 83). • Many considered the meat made for human consumption safer for pets (Comment 1) • The dangers were associated with the direct contact between the pet and human and with a lack of hygiene (Comment 117). • Many did not perceive any risks associated with the practice (Comment 86). • Pet-owners with a compromised immunity and those, who previously experienced foodborne illness were more risk aware (Comment 201). 	<ul style="list-style-type: none"> • The reported length of raw feeding has ranged from under 1 year to over 30 years. • Pet-owners who reported switching back to traditional feeding had compromised immunity and attributed their choice to the avoidance of risks (Comment 160). • The need to control the ingredients in their pet's food was stated as one of the main reasons for the alternative choice (Comments 19 and 36). 	<ul style="list-style-type: none"> • Some pet owners reported taking food safety and hygiene precautions (Comment 10 and 72) • Others were optimistic about the hazards associated with raw meat-based feeding (Comment 18). • Pet-owners also shared comments indicating malpractices that may lead to foodborne illness (Comment 7).
<p>"Cat's natural diet is more nutritious for it than an artificial designed-for human-convenience alternative." (Comment 57)</p> <p>"Cats are designed to eat raw meat safely." (Comment 76)</p> <p>"I am worried about bacteria with the raw as I have young children." (Comment 12)</p>	<p>"The only way a cat would get salmonella from chicken is if it isn't cooked properly but if you are raw feeding you have no need to cook raw food." (Comment 83)</p> <p>"There is a risk to human family members if the dog licks human faces or the human ingests bacteria via their hands." (Comment 117)</p> <p>"Made for human consumption chicken, so from the supermarket, I feel there would be little chance of there being any bugs in it." (Comment 1)</p> <p>"All this paranoia about germs is for the most part just nonsense." (Comment 86)</p> <p>"I have a compromised immune system so it's important for me to avoid such risks." (Comment 201)</p>	<p>"Several of our cats and me caught campylobacter. After that I would never feed raw again." (Comment 160)</p> <p>"Both improved health wise (better teeth, deeper shines to their coats, their coats feel less coarse, and over all they appear more content with life)." (Comment 36)</p> <p>"Who knows what they put in those pouches and cans at the factory." (Comment 19)</p>	<p>"The process and precautions I take in handling raw food that I am going to cook for myself are the same ones I take in preparing my cats' raw food." (Comment 10)</p> <p>"I don't care about what gross things dogs get up to if left to their own devices, their bowls are cleaned after every meal." (Comment 72)</p> <p>"A few germs here and there won't hurt as long as you are generally clean and tidy." (Comment 18)</p> <p>"Rinse meat well with water, you can also cook it lightly on the outside, just a little, to kill the surface bacteria." (Comment 7)</p>

Review of the manufacturer websites

The review of raw meat-based diet manufacturer/supplier websites ($n=33$) revealed that 61% of websites did not provide any consumer safety and hygiene guidelines, regarding raw meat-based feeding.

The websites that provided food safety information ($n=13$) most frequently included guidance on:

- 'correct handwashing', 'freezing', 'thawing' and 'safe refrigeration' of the meat-based pet food (Figure 1)
- Small number of websites instructed pet-owners about the practices used to avoid cross-contamination, such as 'segregation' (using separate utensils, chopping boards, plates) 'cleaning' and 'sanitizing'.
- Manufacturers seldom informed about the pathogens, associated with raw meat.
- Despite the availability of food safety instructions specific to the handling of raw meat-based pet food by the UK Government⁹ and the Pet Food Manufacturers Association⁸, none of the reviewed websites referred to the information.

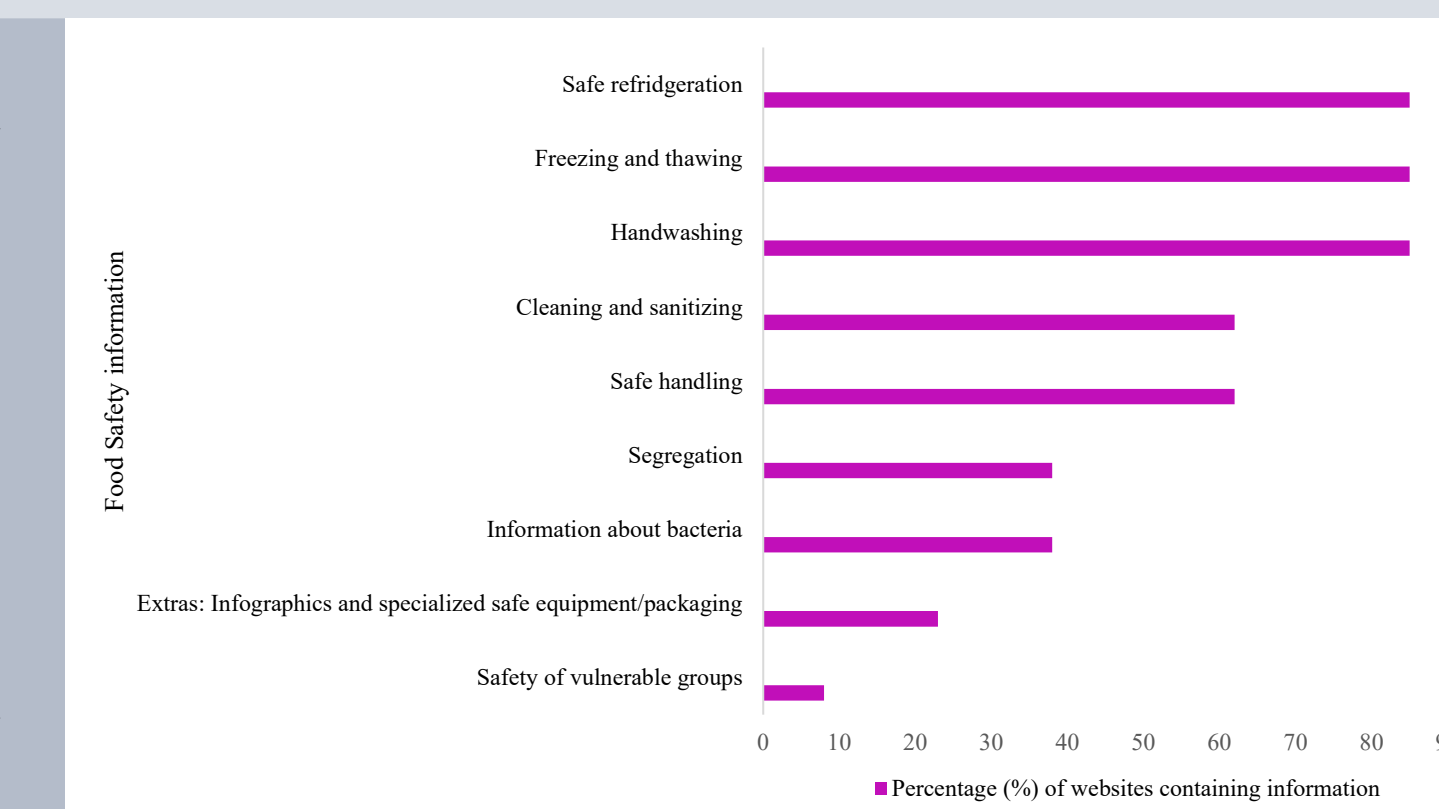


Figure 1. Provision of food safety and hygiene information, regarding raw meat-based feeding, on the manufacturer/supplier websites ($n=13$).

Conclusion

This study has explored pet-owners' perceptions and practices, specific to raw pet feeding safety and has revealed that although pet-owners indicated awareness of food safety, the potential food safety malpractices were also common. Most importantly, pet-owners were shown to underestimate the potential severity of foodborne illness, indicating 'optimistic bias'. At the same time, there is a considerable lack of provision of food safety information, relating to raw meat-based feeding, on the manufacturer/supplier websites.

Findings indicate that pet-owners need to be adequately informed of potential hazards and of appropriate food safety practices to mitigate risks when providing raw meat-based diets for pets.

Recommendations

- There is a need for provision of comprehensive and reliable food safety instructions to pet-owners, practicing raw meat-based pet feeding.
- Online sources and product labels should be utilised for dissemination of food safety information.
- Future observational studies are necessary, in order to determine the implementation of food safety practices by the raw feeding pet-owners

Acknowledgement

The authors would like to thank Dr. Elizabeth Redmond for support and contribution in preparation for this conference presentation.

References

1. Baede, V.O., Broens, E.M., Spaninks, M.P., Timmerman, A.J., Graveland, H., Wagenaar, J.A., Duim, B., Hordijk, J., 2017. Raw pet food as a risk factor for shedding of extended-spectrum beta-lactamase-producing Enterobacteriaceae in household cats. *PLOS ONE*, 12, e0187239.
2. van Bree, F.P.J., Bokken, G.C.A.M., Mineur, R., Franssen, F., Opsteegh, M., van der Giessen, J.W.B., Lipman, L.J.A., Overgaauw, P.A.M., 2018. Zoonotic bacteria and parasites found in raw meat-based diets for cats and dogs. *Veterinary Record*, 182, 50–50.
3. Chengappa, M.M., Staats, J., Oberst, R.D., Gabbert, N.H., McVey, S., 1993. Prevalence of *Salmonella* in Raw Meat used in Diets of Racing Greyhounds. *Journal of Veterinary Diagnostic Investigation*, 5, 372–377.
4. Fredriksson-Ahomaa, M., Heikkilä, T., Pernu, N., Kovanen, S., Hielm-Björkman, A., Kivistö, R., 2017. Raw Meat-Based Diets in Dogs and Cats. *Veterinary Sciences*, 4, 33.
5. Nemer, S.M., Doran, T., Grabenstein, M., McConnell, T., McGrath, T., Pamboukian, R., Smith, A.C., Achen, M., Danzeisen, G., Kim, S., Liu, Y., Robeson, S., Rosario, G., McWilliams Wilson, K., Reimschuessel, R., 2014. Investigation of *Listeria*, *Salmonella*, and Toxigenic *Escherichia coli* in Various Pet Foods. *Foodborne Pathogens and Disease*, 11, 706–709.
6. Olkkola, S., Kovanen, S., Roine, J., Hänninen, M. L., Hielm-Björkman, A., Kivistö, R., Chang, Y. F., 2015. Population genetics and antimicrobial susceptibility of canine *Campylobacter* isolates collected before and after a raw feeding experiment. *PLoS One*, 10, 1–15.
7. PetForums Community, 2019. Available at: www.petforums.co.uk (Accessed: 14 October 2019).
8. PFMA, 2019. Responsible Raw Feeding for Cats and Dogs. Available from: www.pfma.org.uk
9. Public Health England (PHE), 2018. Raw pet foods: handling and preventing infection. Available from: <https://www.gov.uk/guidance/raw-pet-foods-handling-and-preventing-infection>
10. Waters, A., 2017. Are we at a turning point? *VetRec*, 181, 384.