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Hidden in Plain Sight: Uncovering the Obesogenic Environment Surrounding the UK's Leisure Horses

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ABSTRACT

Equine obesity is a major welfare concern in the UK, and the problem is thought to be increasing. Leisure horses are known to be most at risk of obesity, yet despite plenty of conjecture, the reasons for this are unknown. This study, therefore, aimed to establish the social and environmental factors which owners considered might contribute to levels of obesity in leisure horses in order to address the problem. This project used qualitative research methods to bring together data from interviews with 28 horse owners and 19 equine professionals, two focus groups, two years of field notes, and 17 threads from equine discussion fora. The data were analyzed using a grounded theory approach. This study determined that the environment around the UK's leisure horses is "obesogenic"; that is, the environment is structured in numerous ways that make obesity a likely outcome. This is a result of multiple factors related to the changing relationships between humans and their horses in recent decades, which has led to horses being kept for their companionship rather than for their physical abilities as work or competition animals. In addition, commercial environments have been developed to cater for these leisure horses, including livery yards which often have inflexible rules and rich grasses, a heavily moralized feed and equine care industry, and lack of options for "safe" exercise. In these obesogenic environments, horse owners often find it difficult to make changes to their horses' condition.

KEYWORDS

Equine; human–animal interaction; obesity; qualitative; welfare

Around 60% of the UK's leisure horses are overweight or obese (Robin et al., 2015; Stephenson et al., 2011; Wyse et al., 2008), and at risk of related health problems with potentially fatal consequences such as equine metabolic syndrome, laminitis, strangulating lipomas, osteoarthritis, and many others. Although robust longitudinal data regarding the rise in obesity are lacking, many equine professionals report that the problem has increased in the past few decades, in line with the rise in keeping of leisure horses (Owers & Chubbock, 2013;

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Tackling Obesity in Equine Practice: BEVA Member Survey Results, n.d.). Accordingly, obesity is considered one of the most serious welfare concerns facing leisure horses in the UK.

Keeping horses for leisure is an increasingly popular pastime in the UK (Schuurman & Franklin, 2016), and now accounts for around 60% of the UK's horses (Wylie et al., 2013). Leisure horse owners are non-professional horse people who keep horses as a "hobby" rather than for economic gain; however the word "hobby" itself is somewhat of a misnomer. Horse-keeping may be constructed as "serious leisure" (Schuurman & Franklin, 2016); it is practiced intensively and over many years, requires specialist skills and knowledge, and can provide deep satisfaction for those who are involved.

A horse being owned as a "leisure horse" is known to be a risk associated with obesity (Robin et al., 2015; Stephenson et al., 2011), yet the reasons for this are somewhat unclear and have not been well explored through research. It is likely that lack of exercise (Wylie et al., 2013), over-attention to care such as rugging (i.e., applying a coat to the horse to protect it from the elements, and thus not allowing the horses' natural metabolism to warm it, as would happen in an un-rugged horse) (Over-Rugging Is "a Man-Made Welfare Problem" Says Vets - Horse & Hound, 2017; Rendle et al., 2018) and inappropriate feeding (Horseman et al., 2016) could play a role, but there must be more to the picture, since approximately 40% of leisure horses live in this environment but are not overweight.

Canine welfare science around obesity may provide some insights, given that dogs – like horses – are also experiencing an obesity epidemic (German et al., 2018), though of course the management of dogs is very different from horses, with most dogs kept as pets in the house. The owners of obese dogs are known to behave differently toward their pets in comparison to the owners of dogs of a healthy weight, "humanizing" their animals, for example sharing human food and human spaces such as the bed with their pet (Kienzle & Bergler, 2006). In canine health, the owner's relationship with their pet is thought to have substantial effects on the weight and health of the animal (German, 2015).

While sociologists have studied leisure horse owners (Birke et al., 2010; Schuurman & Franklin, 2016), no research has thus far examined owners' attitudes toward health and weight in horses specifically. However, leisure horse owners are known to value highly the relationship and bond that they have with their horse as well as the embodied acts of caring for it (Birke et al., 2010; Hausberger et al., 2008; Schuurman & Franklin, 2016). Leisure horse owners may, therefore, choose specific acts of care or use specific means of training, in order to create what they feel is a deep and meaningful relationship, for example, through engaging in specific forms of horsemanship focusing on beliefs about the horses' natural instincts (Birke, 2007).

This study used qualitative methods to illuminate the constructed lifeworld of the leisure horse owner; clarifying how such owners think about their horses' care and its health, and how they are influenced by the environment around them. Combining data from different sources, this study set out to understand the reasons behind the high prevalence of obesity in horses in the UK.

Methods

This study used three types of qualitative data, captured over the three year research period:

- (i) Analysis of online discussion fora from three open-access UK-based, searchable leisure horse forums provided a naturally occurring source of data. The three fora were searched using the terms “obese, overweight, fat” between January 2015 and May 2016, and irrelevant results removed. This left 17 discussion threads with 646 individual posts included in the analysis.
- (ii) Semi-structured interviews were conducted with 28 leisure horse owners across the UK, between December 2016 and March 2018. Participants were recruited via social media and advertisements in equine establishments such as feed shops. They were invited to take part in a study about “horse health” rather than obesity specifically, in order not to influence the discussions. Purposive sampling ensured a wide range of types of leisure horse owner (e.g., competing and non-competing, those who kept their horse as a “companion”, etc. (Scantlebury et al., 2014)), type of horse, and horse care situations were included; for example, young and old horses, ridden and retired, home-kept versus livery. Nineteen equine professionals including vets, nutritionists, a behaviorist and others were also interviewed individually about their experiences with helping to discuss and manage equine weight with horse owners, including making use of five transcripts with equine nutritionists which had been collected for a previous project about laminitis.
- (iii) Two focus groups aiming to collect data about how owners planned and negotiated weight management strategies were conducted during June 2018, with a further 21 horse owners.

This study was reviewed and approved by the University of Liverpool Veterinary Ethics committee (number 457). In the individual interviews and focus groups, informed consent was obtained prior to participation, and discussions were audio-recorded, transcribed, and anonymized prior to analysis. All data were imported into NVivo 10, and analyzed using a constructivist Grounded Theory approach (Charmaz, 2008; Corbin & Strauss, 1990). Grounded Theory encourages the researcher to suspend their existing ideas about the topic, and examine the data in close detail, developing “codes” iteratively from the data in a series of increasingly theoretical rounds of coding (Holton, 2010). This process facilitated the emergence of previously unseen constructions surrounding horse care and horse health from the data. Coding was performed in collaboration with two authors, and further discussed with other authors as themes emerged.

As themes emerged from the data, they were developed into overall categories, and the authors discussed how categories were inter-related and interlinked. In line with accepted Grounded Theory methodology, additional data were then added in order to “test” the themes, categories and relationships between categories, in an ongoing and iterative process. Eventually, a conceptual model was developed describing how the categories related to one another. The results and model are described hereafter.

Results

The combined data provided a comprehensive picture of the aspects which were important in shaping horse care practices, and which impacted on equine weight. For the most part, horse owners made decisions about horse health and horse care themselves. There

were occasions on which decisions were delegated to others, such as livery yard owners. The process of caring for a horse therefore involved horse owners negotiating complex decisions about numerous aspects of care, bringing together their own knowledge and capability, their views on the ethics of horse keeping, their views on the individual quirks of the horse in their care, and the multiple external influences such as social norms, professionals, and peers.

In order to depict how these influences might impact on a horse owners' decisions around horse care, the themes deriving from the data were drawn into a conceptual model which illustrates the different aspects of the constructed equestrian world (Figure 1).

Importantly, the data showed that the factors which influenced the horse owners' decisions, also created an environment which promotes obesity. As a result of the multiple obesogenic effects of this environment, all leisure horses could be at risk of obesity, whether kept as pets or for amateur competition, and no matter the type of care given. The model therefore demonstrates the interplay of these factors which produces the *obesogenic* environment within which UK horses exist. The concept of an obesogenic environment has not previously been applied to animal health and welfare (to the author's knowledge), but this term originates from the study of human health, where it describes environments that promote obesity; for example the loss of green spaces, prevalence of fast food outlets, and the high price of fruit and vegetables in comparison with processed foods (Lake & Townshend, 2006).

The following analysis describes the components of the conceptual model addressing each in turn, and illustrates how each component is integral to the creation of the obesogenic environment within which UK leisure horses exist.

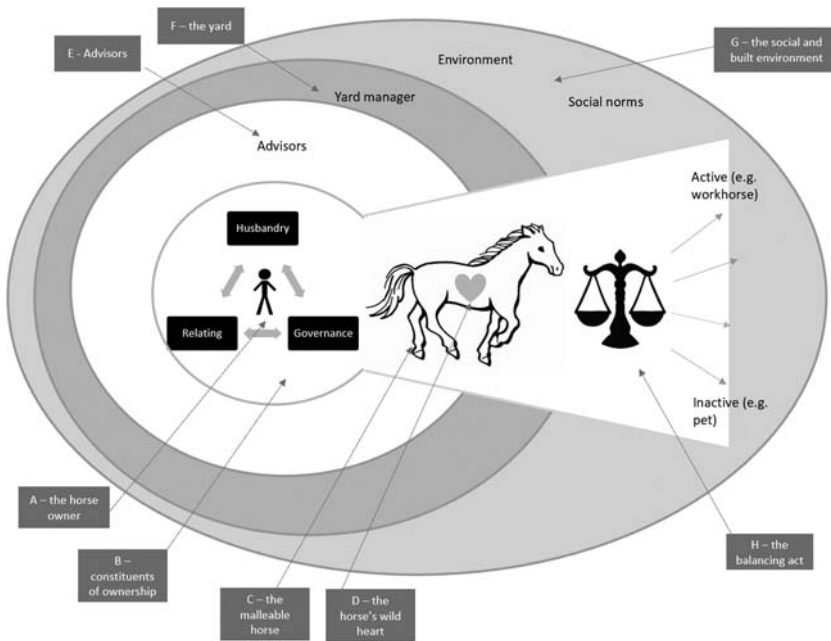


Figure 1. Conceptual model of the equestrian lifeworld of the horse owner, showing how the owner influences their horse and is simultaneously influenced by others.

The Horse Owner

The horse owner is depicted in the center of the model. The data showed that the owner has a sense of their own identity as a horseperson which brings together their history as a horseperson, their ideologies, and the pragmatic boundaries present in their lives, such as ability to juggle life constraints (time, money, weather, ageing, confidence) in order to look after the horse. Being a “horseperson” was variously viewed as a lifestyle, passion or innate need rather than simply a “hobby,” as suggested by Sophie: “with horses is that there’s so much to learn and so much to do with them that it’s kind of a lifestyle. It’s not just a hobby that you can rock up on a Tuesday for your swimming class.” Nevertheless horse care was framed within the realities of an individuals’ daily life; including their time, financial, and physical constraints.

The Horse Owner and the Obesogenic Environment

Many horse owners identified being around the horse and providing care for it, rather than riding or otherwise exercising it, as central to their enjoyment of horse ownership. Kayleigh’s view of her horse encapsulated this perspective: “I’ve not got her to ride, I’ve got her as a, as a, as a friend, y’know and as something to look after and be mine.” As a result, exercising the horse often took a backseat to caring activities.

However, despite their enjoyment of care-provision, owners were restricted by their own “real life” requirements, leaving them ill-equipped for the intensive husbandry processes which may be necessary to manage an animal that is becoming or is already overweight, for example increasing exercise, soaking hay or stabling. This was reflected by Ellie: “I never seem to have time, and he’s gotten quite plump since [sharer] left, which was two months ago. She was riding him four times a week, so it really made a difference.”

Many horse owners also reported feeling vulnerable while riding and handling horses, causing them to restrict their equine activities to those which they perceived as “safer,” for example not riding outside the arena, not riding at speed, avoiding jumping, or not exercising the horse at all. For example, Jill had had to pay for lessons specifically to help overcome her fears of riding her horse: “I’m not particularly brave. I’m actually braver on the ground, which I know is the least safe place to be. I think it’s to do with my age as well.” Owner confidence appeared to play an important role in the ability of horse owners to engage in activities with their horses that have high energy outputs, with lack of confidence and restricted ridden activities contributing to the obesogenic environment.

Constituents of Ownership

The interactions owners have with their horse can be understood using the three concepts of *husbandry*, *governance*, and *relationship*. In the diagram, these are represented as surrounding the horse owner. *Husbandry* relates to the embodied acts of care which are done “to” or “for” the horse by the owner (or by staff at the request of the owner), such as feeding, exercise, and rugging. The point of husbandry is to ensure that the horse is healthy and has good welfare in the opinion of the owner. The owner’s *relationship* with the horse is concerned with the evolving, ever-changing connection the owner has constructed with the horse. *Governance* relates to the broader responsibility that the owner has for the horse and can include the

means of controlling the horse such as bits and pressure halters, or any other way in which the owner ensures the safety of the animal and the public.

Husbandry, relationship and governance are constantly in flux, flexing in relation to each other as well as in relation to the other elements outlined in this model; for example, as Sandra describes, a horses' behavior can be altered through its routine: "I just decided that it made more sense just to stick with the winter routine all year round and he was the calmest he's ever been." Confining the horse to a specific routine is an example of husbandry *and* governance.

Constituents of Ownership and the Obesogenic Environment

Horse care practices discussed in this study were very diverse. However, clear distinctions emerged between people who wanted to keep their horse as "naturally" as possible, and people who wanted to protect their horses from harms. "Natural" keeping was constructed as allowing the horse choice and access to resources commensurate with wild living, such as socialization with other horses, constant access to forage and outdoor environments, as described by Samantha: "We're quite keen to have them outdoors because horses have evolved to live outdoors ... we do try to treat them as horses." In line with this, there were a number of people who chose not to ride their horses as part of this return to "naturalness." Those horses kept "naturally" often had constant access to feed as part of a perceived "natural" lifestyle; clearly, an environment with constant access to forage and limited energy expenditure had the possibility of leading to overweight horses. However, even within this group, there was a polarization of owners on the subject of rugging – some not rugging their horse so as to allow thermoregulation and a natural loss of weight in winter, while others saw it as an important part of looking after a horse which lived out full time.

Other horse owners prioritized protecting their horse from harm, for example by keeping it inside in stables, or in individual paddocks so it could not be harmed by other horses. Owners with more of a protective ethos in terms of their horse care often employed closed-circuit television (CCTV) in both paddocks and stables, minimized turnout, or reduced their horse's contact with other horses as a way of keeping their horse safe and reducing the risk of injury, as shown by Sue:

They've always been allowed to interact with one another over the fence, but for ease and for safety reasons we've kept them separate and "Kayleigh", I'm just protective over her and I just prefer – I just feel like she's safer in her stable than in the field. So. Although she's a horse.

These factors involved placing the horse within a small, sanitized, and idealized environment as well as limiting its movement. This had the potential to produce an overweight horse. However, the model highlights the importance of the dynamic that exists between all of the elements of the model which make it unlikely that any two sets of circumstance would be identical.

The relationship constructed by the owner with their horse was often at the forefront of the owners' descriptions of their horse-keeping decisions. A result of their complex and deep relationship with the horse was that some owners described not wanting to "use" their horse, or treat it "like a slave" by undertaking ridden exercise. Nadia described succinctly that, for her, ownership is about "not treating your horse as a slave. He's not a slave, he's my friend, so why would I treat him like that."

Constructing exercise as a feature of subordination was central to the idea that the owner's relationship with the horse would be changed by forced exercise. As relationships with horses have changed over time, so too have methods of governance. Many interviewees discussed their changing approach to achieving the horses' compliance through "kinder" training methods which support the construct of horses "as a friend." This shift is part of the changing societal attitude toward horses as sentient animals, and hence reinforces the aspects discussed as part of the relationship with horses. Owners wanted to *relate* to their horse as a part of their governance, rather than acting through force. This is hand-in-hand with not wanting to "treat the horse as a slave," and also aligns directly with husbandry options that attempt to increase the horses' needs "as a horse" by allowing it choice and freedom. Whilst these are admirable and ethical changes, the part they play in the shift towards the horse as a companion animal means that together, they are also potentially contributing to the obesogenic environment.

The Malleable Horse

The horse was constructed by owners as a malleable, changeable being; capable of being manipulated and transformed by the horse owner to produce different types of commodities – ranging from a work-horse (*work* could include competition, physical work such as being a riding school pony, breeding young, etc.), through to a companion animal, for whom the expectations might be less tangible. For the owners, this process of transformation was at the heart of their ownership. Participants consistently discussed and reiterated the change that they had achieved in their horses during their ownership. This is illustrated by Kayleigh:

in a few years' time, when I've had the time to get her to the way I want, I can say I made her like that. I didn't buy her like that. And I can show people pictures of when I first bought her, and there will be a transformation, where there won't be a transformation if you buy an expensive horse, because they're already like that. And that's what I like, because there'll be a transformation, and I'll be, I'll have done that.

The Malleable Horse and the Obesogenic Environment

Horses transformed into the "companion" end of the transformation spectrum were valued for their perceived personality traits rather than their functionality, and therefore not usually expected to expend energy in the same way that a "working" horse might require. For example, Jane prized her horses' extreme docility, because it makes her feel safe: "... a feeling of pent up energy. And she didn't have any. Well she doesn't have any [laughs]. She plants. [refuses to move] [laughs] ... I just felt safe on her." Jane's horse was also reported to suffer from equine metabolic syndrome.

The Wild Heart

While the horse is seen as being malleable, it is also recognized as an animal; a being which owners perceived as essentially "wild at heart," as suggested by Lorraine: *I just think it's amazing that these flight animals would actually let you sit on them. I still find*

that a wonder. Owners considered that horses had their own potentially dangerous agendas and behaviors as a result of their animality, and these affected the husbandry and governance behaviors chosen by the owners; for example, some stabled their horses to create a routine that they felt would prevent their horses becoming “feral.” Understanding and overcoming the horses’ potentially animalistic behavior was a recurring theme for owners throughout the study.

The Wild Heart and the Obesogenic Environment

Unwanted behaviors in horses were much discussed throughout the interviews and focus groups. Owners who were unable to manage these behaviors reported being less able to exercise the horse adequately. Horse owners displayed complex relationships with the construction of their horse as an animal, recognizing the danger and risk they posed alongside the owner’s desire for love and friendship. Fear of riding or of being hurt while riding did not necessarily result in the removal of the horse. Rather, it typically resulted in a change in the activity pursued with the horse, often resulting in the horse doing less physical activity. Several participants reported that they no longer jumped their horses as a result of previous falls.

Another feature of long-standing horse ownership was the nature of human ageing and a decline in physical ability. Older owners reported “slowing down” and reducing the perceived risk of riding by minimizing their activities, avoiding hacking (riding outside the arena in the countryside or on roads), fast work, and jumping, all of which had an impact on the energy expenditure required of the horse. This was expressed by Polly about making the decision to stop hacking out:

I’ve got to be realistic. The roads are busier and busier, and where she is, the roads are narrow and the traffic is not well behaved. It’s just too frightening. The thought of coming off and then her bolting off and hurting a driver or a pedestrian, it’s just more than I can cope with.

Modifiers Around the Owner

The horse owner is encircled by several levels of modifiers which impact on how the horse owner looks after and interacts with their horse. On the model, this is illustrated by the concentric circles around the horse owner.

Advisors

The closest influencers on the horse owner are those who are seen as providing support and advice. This includes specialist expertise which has been brought in to assist in managing and manipulating the horse, and also the individuals’ support network such as friends and peers support, which could include online support.

Advisors and the Obesogenic Environments

Horse owners employed numerous specialists in the care of their horses – veterinary surgeons, farriers, physiotherapists, saddlers, nutritionists, instructors, dental technicians, etc. Theoretically, these individuals could highlight weight issues to owners before the horse became too overweight. Some owners commented that their horse must be an

acceptable weight because they had not been told otherwise. Other owners reported that they had been advised by a professional that their horse was too fat: for example, Samantha's vet pointed out her horse's fat pads:

it was really Tom telling me that, "Look, that is a fat pad right there," and me going, "Oh, gosh, yes, it is," for me to actually then look back and think, "Oh, God, they have actually been creeping on".

However, interviews with professionals suggested that these people had multiple conflicting concerns during a consultation, including the need to find the best way to communicate with the owner without affecting the service they were contracted to supply. They often described being uncomfortable discussing weight with the owner (particularly if the owner is also overweight) and reported finding it difficult to bring up the subject. Humor and euphemisms were often used to soften messages, which risked undermining or obscuring the message.

Horse owners often discussed valuing experience more than an individual's qualifications when responding to advice. Therefore, the views of friends and fellow horse owners on the discussion forums were often actively sought, as described by Alice: "Daisy's horse is in really good nick, so ... I rang Daisy saying, 'I don't know what to feed it,' 'Ah, well, we use this, this and this.'"

Furthermore, owners often mixed with like-minded individuals. Georgia reported on a forum that she did not realize she needed to exercise her stabled, obese horse frequently, because others on the yard did not do so: "most of the horses at the yard where I'm at are only ridden once a week and just left for the rest of it."

Yard Manager

The yard manager or land owner on which a horse is kept has the possibility of exerting a very strong influence on the horse's life and its management. The yard manager has the ability to shape the immediate environment of all of the horse-owning customers; from what type of feed is used, to how the horse can be exercised, and which professionals could see the horse:

they have [preferred farrier] erm – if you don't like him you have to go off the yard to get your feet done basically, yeh you're not allowed any other farrier on except him. (Leanne)

While there were a number of business models in operation, it was clear that yards were run according to the yard manager's preferences and business model. If individuals wanted to do things in a way that did not fit with these preferences, they were commonly told to leave. Yard owner Helen reported: "If people don't want to [do things my way], that's their choice, they don't have to be here." In addition, the management of the land on which horse owners grazed their horses reflected the preferences of the owners or managers; while some yard owners favored neat, green, fertilized fields uninterrupted by electric stakes and tapes, others were less interested in what the fields looked like but how the horses interacted with the space. In many ways, the range of views expressed by the horse owners was replicated in the range and breadth of yard owner/manager views.

Some horse owners were able to avoid this influence by purchasing or renting their own land and stabling, although they remained subject to the influence of local authorities and other environmental regulating bodies.

The Yard and the Obesogenic Environment

The yard owners interviewed discussed multiple competing priorities in their management of the land and facilities. In essence, all the yard owners/managers had the potential to create an obesogenic environment, by providing an inflexible local environment to the horse.

The rules imposed on the horse owners from livery yards often rendered them powerless and limited their management options. Many horse owners were concerned about mentioning problems that were directly contributing to increased weight in their horses. Nadia summed this up: “if you want to change the food or I wanted to swap from straw to shavings, then she reacts a bit childish”; as a result, Nadia had to find methods of managing her horse’s weight which did not impact the yard staff in any way. Natalie, a nutritionist commented that:

grazing management may be difficult, especially if they’re on livery yards. Again it’s quite disappointing at times that you’ll hear, “I’m not allowed to do that,” or, “I can’t turn my horse out with a muzzle,” or, “I can’t strip some grazing.”

Livery yards established on ex-dairy land planted with energy-dense rye grasses intended for dairy cattle produced more energy than is needed for most leisure horses. When this is combined with inflexible management options, owners and professionals identified that there were consequences for the weight of horses. Lorna, a nutritionist, felt passionately about this:

If I had it within my power to destroy off the planet forever rye grass, I would ... an awful lot of livery yards ... The horses are grazing on former dairy grass ... I think the farm diversification schemes, the farmers just don’t realize how bad fertilized rye grass is for horses.

Livery yards also perpetuated the obesogenic environment through the production of bounded spaces which were seen as safe for the handling and exercising the horse (for example, arenas). The interview data suggested that an emphasis on these bounded spaces promotes the idea that there are also *unsafe* spaces such as fields and roads. These ideas feed into the fears of owners about the exercise of their horse beyond the safety of the yard environment.

The Physical and Social Environment

Horse ownership sits within the broader social and cultural norms of the UK which produces a particular UK equine society. UK equine society is created and shaped through the equestrian media, equine events such as horse shows, the built environment, and the extensive commercialist market that has arisen around horses.

The Obesogenic Physical and Social Environment

Obesity in horses is now so prevalent that it is described by professionals as a social norm; a view that was held by many professionals and owners alike. For example, vet Susanna

commented: “with all the pictures they see in the Internet and in the media, they genuinely don’t realize that their horse is overweight.” Accordingly, many owners described not having realized how overweight their horses were, and there was a great deal of confusion about the ideal shape for a native pony or cob and whether these breeds were “supposed” to have an apple-bottom or cresty neck (Furtado, 2019; Furtado et al., 2018a, 2018b). This was considered by many to be perpetuated by the discipline of showing, which is widely regarded to prefer and promote overweight horses in many instances (Furtado, 2019).

Furthermore, the changing social status of the horse as a leisure and companion animal is likely to be one of the factors that has led to the increased prevalence of the Traditional or Gypsy cob (now a recognized breed). The social construction of traditional cobs by owners portrays them as trust-worthy, reliable and steady in their nature. Cobs are perceived as eternally greedy, cuddly, and an immensely lovable family pet: “he was a traditional cob so he, he was just a chunky, furry thing (Kayleigh); “She’s a fairly typical Gypsy Cob and as good as gold” (Sue). It is easy, then, to see how these traits combine to create the construct of an animal who physically embodies these traits, socially accepted as fat, unfit, and adored.

In line with the views held by some horse owners (previously discussed above), the UK equine media and equine society generally promote the idea that all horses are potentially dangerous, and that activities such as riding on the roads should be carefully managed or limited. Magazine articles entitled “spook-proof your horse” and “stay safe on the road” accompanied by high-profile reports of accidents to horse and rider while on roads reinforce the idea that hacking is a potentially risky activity. While this may be true, the result of the reinforcement of risk is that many owners chose only short and slow hacks, or exercised their horses within the confines of an arena. The effect of this type of activity often reduced the amount of energy expended from exercise.

Possibly as a result of the increase in horses owned for leisure, there has been a growth in the production of horse related-businesses, with the economic value of the equestrian industry at £4.7 billion per year (British Equestrian Trade Association - Market Information, n.d.). Tack and feed shops contain an array of feeds, supplements, rugs, and other accouterments that are designed to assist owners in some way, and many of which may have obesogenic effects.

Extreme commodification of the horse can be seen in the feed industry. As with all advertising and the way it shapes demand, the language of the feed companies suggests that there are “right” ways to feed your horse, to balance your horse’s diet and to improve the horse’s performance. As a result, nearly all owners in this study fed their horse with something produced and packaged by a commercial feed company. Nutritional requirements were considered extremely complicated and difficult to work out, as expressed by Jill:

even though I’m reasonably clued up about calculating the concentrations of all these things, it is quite difficult to compare things, because they express them in different units. I was sitting there thinking, “Oh, God, it’s quite tricky to work this out”.

When owners did try to estimate their horse’s energy inputs, they focused mainly on bucket feed or supplementary feed such as hay, ignoring the energy and nutrients in

grass – and often neglecting to think about the energy outputs that might be relevant from their horse's exercise.

Often, feeds and supplements were specifically fed in the hope that they would help to solve behavior or health problems that owners perceived in their horses. Feed companies perpetuate such concepts, by providing feeds which appear to have health-benefitting effects (often suggested in the name. There has been an explosion in types of available feed and supplements, many of which were fed by the owners in this study.

The Balancing Act

The scales represent the effects on the horse occurring from the balance of the owners' care, relationship with the horse, the horses' behavior, and the effects of influencers such as the yard. Although some owners showed a recognition of the need to balance a horse's intake with its energy requirements, there was little evidence that this was actively considered until the horse had already been defined as overweight.

The UK's equine obesogenic environment therefore incorporates both the UK's built equine environment, and the relationships owners create and foster with their horses. Hence, the equine environment is obesogenic beyond the physical environment, but also in relation to our relationships with leisure horses, and the organizational and social structures which surround UK horses. Obesity is, essentially, a feature of the creation of the modern leisure horse.

Discussion

This project has identified the range and diversity of influences on horse owners which result in obesity in the UK leisure horse population. The data and subsequent model enable the reader to understand how these influences interact with each other and effectively produce an obesogenic environment for UK equines.

Each level on the model is not necessarily clear-cut; a particular owner may not be concerned with orthodoxy and may shun the advice of their peers, experts, and social norms. The yard manager is likely to be influenced by others within the model, including for example, the veterinary surgeon or the horse owner themselves. The aspects of husbandry, relationship, and governance – which are heavily influenced by the modifying forces of support networks, yard managers, specialist experts, and society – reflect the characteristics and views of the owner. The horse owner is constrained by numerous external pressures in their bid to care for and transform the horse into an animal of their choosing. To tackle equine obesity in any real sense, it is vital to understand and work with these multiple levels of influence.

The UK's equine environment reflects our changing relationship with the horse, which has resulted in them being "leisurized"; transformed into companion animals which form part of their owner's "serious leisure" (Schuurman & Franklin, 2016). This leisurization involves keeping horses compartmentalized within physical, temporal, and logistical boundaries which are suited to the convenience of the owners' lifestyle; the horses must fit within a space which is separate from the owners' "real life" (their life outside of the horses; for example their work and family time). This space is owned by people

who have the resources to rent space back to horse owners. In this way, the provision of livery may encapsulate, for most horse owners, the experience of their horse ownership. Unlike most other human–animal relationships, the owner and their horse share a common space with other owners and horses, provided by someone else. These settings then begin to “perform” by creating, shaping, and managing the identities of the leisure horse owner (Birke et al., 2010; Schuurman & Franklin, 2016; Smart, 2013). The performance of such spaces has received little research attention, yet is fundamental to equine welfare in the UK.

The data showed some similarities with the results of sociological enquiry into obesity in other companion animals such as dogs and cats: for example, dog and cat obesity are difficult for owners to recognize because its prevalence means that fat has become a social norm, as well as owners’ familiarity with their animal (German, 2011; White et al., 2011), and is linked to the humanizing of pet animals, as they become inextricably linked with our human lives (Kienzle et al., 1998; Kienzle & Bergler, 2006). These factors were similar to the current project, where owners had difficulty identifying obesity in their horses (see also Morrison et al., 2015) and experienced tension in decisions about treating the horse “as a horse” versus humanizing it in their care. However, this study also highlighted that horse care is heavily influenced by the social world in which it occurs, because horse care and riding is performative, often happening in shared social spaces on yards (unlike dog or cat care, occurring predominantly at home). Further, the constant feeding of forage in order to mimic “natural” foraging behavior was seen as integral to horse care by owners, which is clearly problematic in relation to dieting, and differs from dogs and cats who are not perceived to need constant access to forage. Further, the moral tensions around exercise as an exploitative act which were described in this study for horses, do not exist for dogs where walking is usually seen as a positive experience for both the dog and owner (Westgarth et al., 2017).

The existence of the obesogenic environments for companion animals has not been previously recognized to the authors’ knowledge, though the term is well recognized in relation to human health. Recognition of this term can lead to assessing ways of manipulating environments in order to make them less obesogenic. For example, the UK’s sugar taxes reduce the amount of sugar in many drinks (Royal College of Paediatrics and Child Health, 2015), and product placement at supermarkets is being altered so that sweets are not available at checkouts (Thaler & Sunstein, 2009). Alternatively, public health behavior change initiatives help people to learn to behave in the obesogenic environment, in ways that reduce obesity. “Sugar Swaps” and “Couch to 5k,” for example, are initiatives that help people to alter their behavior and build healthy habits, by making simple food swaps, and learning to run 5 km from the sedentary state (couch) (NHS Choices, n.d.a, n.d.b).

The recognition of the obesogenic environment around horses clarifies the need to alter the equine environment, for example promoting yards that facilitate weight management or limitation of pasture access. Further, this recognition illuminates the need to empower horse owners, for example, through the use of the authors’ decision-making guide surrounding equine weight management (T; Furtado et al.), or through initiatives such as Your Horse’s #Hack1000miles campaign (#HACK1000MILES - Your Horse Magazine, n.d.), which encourages and rewards riders for hacking with their horses.

Conclusion

Equine obesity is the result of an intricate combination of factors: a result of our changing lifestyles and our desires to have meaningful relationships with horses. Horses are variously described in the data as providing their owners with therapy, purpose, escape, and love, and the care and attention lavished upon them is testament to the deep affection felt by their owners. This relationship is integral to the study of obesity. One of the most important findings from this study is that we need to find a way to provide environments for our horses that reflect the importance of this relationship but which optimize horse health while also promoting the owner-horse bond.

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